

OBSERVATIONS IN ORCHESTRATION: JOHN WILLIAMS

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ABSTRACT

This thesis presents a composition using orchestral techniques gleaned from an analysis of the scores of film composer John Williams. Areas of focus include melodic and rhythmic support, harmonic choices, conducting considerations, chord voicings both within a section and across the orchestra, and dynamics and articulations. Whether it be for film, concert music for orchestra, Olympic or network themes, John Williams is responsible for creating some of the most memorable music of the last half-century. The manner in which he orchestrates is central to his success. While Williams' orchestrations appear simplistic, a closer look reveals a rich, studied approach to orchestrating based on a neo-romantic soundscape.

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CHAPTER ONE: An Overview of John Williams

1.1 Introduction

John Williams is not only the composer and conductor of some of Hollywood's most memorable works, he is the orchestrator of the scores, a craft he has been honing since the beginning of his music career. This paper will examine and analyze orchestration techniques used by Williams in both his well-known scores for film and in his lesser-known concert works.

Prior to commencing this thesis, I was not a follower of Williams' work. This was, in large part, because I rarely went to the movies. The film *Schindler's List* changed everything for me. While watching that film, I heard Itzhak Perlman playing solo violin with such passion, supported by a string section orchestrated shockingly low in their register, flirting with the safe outer limits of acceptable chord voicing and creating a rich environment for Williams' haunting theme. That memory has stayed with me until this day and provided the initial inspiration for this thesis.

There is no shortage of instructional material available to the student of orchestration. However, surprisingly little has been written analyzing Williams' approach to orchestration despite his stature as one of the pre-eminent film composers of the 20th century. This thesis intends to fill that gap by shedding light on some of the ways in which Williams creates his unique sound. In particular, I intend to analyze in detail Williams' use of orchestration techniques, including how he assigns melodies to various instruments, his use of harmonic and rhythmic support, dynamics and articulation, flourishes and effects, and his note assignments and the doubling of pitch across the orchestra in order to achieve balance and blend within a section.

The orchestration of a composition is crucial to its success. Whether it is provided by simple piano accompaniment, chamber, or a full orchestra, a melody is only as effective as the support it receives from an ensemble. John Williams is not only a creator of strong melodies, he is an orchestrator and conductor of some of the most recognizable movie soundtracks of the 20th century. His approach to composition and orchestration relies heavily on his predecessors while allowing his own voice to be heard, putting his stamp on film music and concert works performed by orchestras worldwide.

This thesis will open the ‘Williams toolbox’, exploring what gives Williams his distinctive sound in the world of neo-classical film music and composing an orchestral piece that makes use of some of these techniques and concepts. Examined topics will include how Williams chooses to support his melodies through rhythmic interest, harmonic simplicity, instrument range, voicing choices (both within a section and across the orchestra), ease of reading and conducting. These combinations of Williams’ techniques have resulted in some of the most memorable music of the last fifty years.

1.2 A Brief History Of John Williams

Williams was born in Flushing, Queens on February 8, 1932. His father was a jazz drummer who moved the family to Los Angeles when Williams was a child. Williams grew up playing both the piano and the trumpet.

In 1951, Williams was drafted into the military and served in the U.S. Air Force. During his time in the Air Force, he elected to join a service band as pianist and trumpet player. He also wrote for the band. He was stationed, among other places, in St. John’s, Newfoundland. Williams attributes his start as a film composer to his time spent in that city. While there he was

approached by Joey Smallwood, then Premier of Newfoundland, to write music for a Tourism Newfoundland Documentary.¹ Of composing that first piece, Williams said:

It was not an original score, I did not have a clue or an idea on how to do that. What I did was go to the library, it must have been in St. John's, and pick a Newfoundland folk song or two which formed the basis of what I arranged for that little film.²

Following three years in the Air Force, Williams studied piano performance at the Juilliard School of Music, playing in jazz clubs by night. In 1955, after his studies at Juilliard were completed, Williams left New York for California. In Los Angeles, Williams found work as a studio pianist in Hollywood performing on film scores by composers such as Jerry Goldsmith, Elmer Bernstein and Henry Mancini. During his time as a studio musician, Williams began writing cues for the composers for whom he was working. By the late 1950s, Williams began composing his own music for TV, including the series *Gilligan's Island* and *Lost in Space*. He subsequently moved into composing music for feature films.

Williams is undoubtedly best known for his work with Steven Spielberg. Their association began in 1974 when Spielberg hired Williams to compose the music for his directorial debut, *The Sugarland Express*. They have one of the most famous working relationships in film history. Almost all of Spielberg's films have featured Williams' scores. His scores are found in such movies as *Jaws* (1975), *Close Encounters Of The Third Kind* (1977), *E.T.* (1982), *Jurassic Park* (1993), *Schindler's List* (1993), *Catch Me If You Can* (2002), *Munich* (2005) *Lincoln* (2012), and all four *Indiana Jones* films. Spielberg recognized the importance of their collaboration in 2016

¹ Barrett, Heather, "Star Wars Composer John Williams' First Score a 1952 Newfoundland Film", *cbc.ca*, September 30, 2015, <https://www.cbc.ca/news/canada/newfoundland-labrador/star-wars-composer-john-williams-first-score-a-1952-newfoundland-film-1.3241603>

² O'Connor, Joe, "How legendary American composer John Williams got his start in Newfoundland", *nationalpost.com*, October 14, 2015, <http://nationalpost.com/entertainment/music/how-legendary-american-composer-john-williams-got-his-start-in-newfoundland>

when he indicated that Williams was “the single most significant contributor to [his] success as a filmmaker”.³

Williams’ work is by no means limited to his collaboration with Spielberg. He has also had a significant relationship with the filmmaker George Lucas, composing the music for all nine *Star Wars* movies, and has composed music for many other movies, including *Superman* (1978), *The Witches of Eastwick* (1987), *Home Alone* (1990), *JFK* (1991), *Angela’s Ashes* (1999), the first three *Harry Potter* films, *Memoirs of a Geisha* (2005) and *The Book Thief* (2013). Indeed, in an ongoing career, he has worked, to date, on more than 100 films.⁴ Of his prodigious output, Williams says: “I developed from very early on a habit of writing something every day, good or bad.”⁵

Williams has written music for many American cultural events including numerous Olympic Games, the Disney Concert Hall and the rededication of the Statue of Liberty.⁶ Williams has also written pieces both for concert band and orchestra. In addition, he was the conductor for the Boston Pops Orchestra from 1980 to 1993. He has also conducted the London Symphony and popular concerts at the Hollywood Bowl.

Williams’ influences are vast and varied. Through his extensive musical training, years of performance, and decades of composing for television, film, and live events he has achieved a high degree of craftsmanship in a number of 20th century compositional idioms. However, at

³ American Film Institute, “Steven Spielberg Praises John Williams”, *You Tube*, Uploaded by American Film Institute, August 8, 2016, <https://www.youtube.com/watch?v=tJY5l6l253c&t=16s>

⁴ “John Williams”, *biography.com*, Biography, July 30, 2019, <https://www.biography.com/musician/john-williams>

⁵ *Ibid*

⁶ “John Williams”, *Wikipedia: The Free Encyclopedia*, Wikimedia Foundation, May 6, 2020, 7:08 (UTC), https://en.wikipedia.org/wiki/John_Williams#Conducting_and_performing

heart, Williams remains a quintessentially neo-romantic composer.⁷ His lush musical creations are the direct descendants of composers like Tchaikovsky and Wagner whose large-scale orchestral music and concept of leitmotif influenced both Williams and his predecessors, most notably, the Austrian composer Erich Korngold.⁸ Williams himself acknowledged the direct lineage between 18th and 19th century classical composers and early film composers like Korngold and Alex North when talking about the history of film music during a 2010 lecture at the University of California: “Nobody had any idea how to accompany [for] films so the only examples they had [were] to take art music from Europe - Wagner, Brahms, Webern, most from 18th century opera.”⁹

⁷ “John Williams”, *Wikipedia: The Free Encyclopedia*, Wikimedia Foundation, May 6, 2020, 7:08 (UTC), https://en.wikipedia.org/wiki/John_Williams

⁸ *Ibid*

⁹ University of Southern California, “John Williams Interview - University of Southern California - Part 2”, *You Tube*, Uploaded by richirare, April 3, 2012, <https://youtu.be/BDzJJQTmq6A>

CHAPTER TWO: The Williams Approach

2.1 The Williams Approach

In an interview with *Music Magazine Express*, Williams attributed his success in the music business to his enjoyment of writing and his strong work ethic:

One of my great good fortunes is that work for me is fun and it's what I do every day. I write something every day, whether it's good, bad or indifferent, just habit and practice, six and a half days a week, something goes on paper.¹⁰

Williams admits he spends a tremendous amount of time crafting his melodies:

Writing a tune is like sculpting, you get four or five notes, you take one out and move one around, and you do a bit more and eventually, as the sculptor says, "In that rock there is a statue, we have to go find it."¹¹

Williams reflected on the importance of making his musical choices seem inevitable, no matter how long it takes to do so, in a conversation with Ian Freer about "The Raiders March":

The interesting thing about "The Raiders March" is that it is a very simple little tune, but I spend more time on those bits of musical grammar than anything else. The sequence of notes has to sound just right so that it seems inevitable, like it has always been with us. It was something that I chiselled away at for a few weeks to find the correct musical shape. Those little simplicities are often the hardest things to capture.¹²

¹⁰ Music Express Magazine "John Williams Interview for Music Express Magazine", *You Tube*, Uploaded by Music Express Magazine, April 20, 2012, <https://youtu.be/zNX2rNaCDso>

¹¹ "John Williams' Quotes", *classicfm.com*, Classic FM, undated, <http://www.classicfm.com/composers/williams/guides/facts-williams/sculptor/>

¹² Freer, Ian, "Eighty Reasons Why John Williams Is The Man", *empireonline.com*, February 6, 2012, <https://www.empireonline.com/movies/features/john-williams/>

It is one thing to write a strong melody. It is quite another to know how to present and support that melody in an orchestration competing with a soundtrack full of dialogue and sound effects.¹³ For example, Williams' score for *Raiders of the Lost Ark* required music to accompany, of all things, the overwhelming sound effect of rumbling boulders (a chapter repeatedly overlooked in instructional orchestration books). Williams discussed how he approached that challenge: "My solution was to get up high in the orchestra and use trumpets. High repeated notes over and over ... on the loudest instruments of the orchestra, the trumpets, to penetrate the sound effects track as much as I could and to grab the ear of the listener."¹⁴ He went on to say:

Unlike a concert where there's only music that we hear, in film we hear the music, we hear the sound of the spaceship, we hear the sounds of the guns, the sound of the dialogue ... and that has to be a wedded unity and the object of how we try to marry the music to the film.¹⁵

This aspect of orchestration is extremely important to composers whose music accompanies film, adding yet another skill set to an already demanding craft. It requires a keen awareness of options that would heighten a visual experience through creative means. Talking about how he approached "The Flying Theme" in *Superman*, Williams shared: "One of the things one can do in orchestration is kind of leave out the bottom of the orchestra suddenly so that the whole thing

¹³ Williams will, at times, engage the services of colleagues in orchestrating his soundtracks. Production deadlines are such that it would be physically impossible to write and score music for a full length feature film in the time frame allotted a composer. Despite the assistance he receives from others, Williams remains very much involved in the process of orchestrating his compositions. He often provides his assistants "sketch scores" complete with melodies, counter melodies, and instrumentation. It then becomes the tedious, time-consuming task of the assistant to fill in the gaps according to Williams' instructions and the assistant's familiarity with Williams' earlier work.

¹⁴ "Williams Talks Film Music With Gene Shalit", *You Tube*, Uploaded by lawford83, June 4, 2008, <https://youtu.be/PlwqlHkF870>

¹⁵ Music Express Magazine "John Williams Interview for Music Express Magazine", *You Tube*, Uploaded by Music Express Magazine, April 20, 2012, <https://youtu.be/zNX2rNaCDso>

seems to be aloft ... build up and then slide the bottom out so the whole orchestra seems to be floating.”¹⁶

Williams’ talents go beyond writing strong themes. He uses the orchestra to punctuate and support the visuals on screen as well as to convey emotion. In speaking about the importance of orchestration to the work he does, Williams said:

I do think the composer without the ability to orchestrate is without some essential tools. Just from a timbral point of view, the orchestral setting in terms of the scene in the film can be more important than the melodic or rhetorical material. One can admire a providentially given gift, but what you respect is someone who has all of it: the natural talent it all sits on, but also all the tools and technical expertise to bring it forward.¹⁷

While Williams has written concert works for smaller ensembles, including concertos for violin, clarinet, harp, and tuba, he has composed the bulk of his work for full orchestra. Williams has often spoken directly about the power that comes from a full orchestra: “There is nothing yet invented that delivers the emotional impact that [a full orchestra] can.”¹⁸ In conversation with the journalist Lester Holt, Williams said: “The invention of the orchestra, with woodwinds and strings and percussion is one of the great artistic inventions of civilization and there is nothing quite like it.”¹⁹

The orchestra, it seems, is where Williams lives and where he flourishes. Williams has discussed the process he uses in writing music for film. He begins by repeatedly watching

¹⁶ “Williams Talks Film Music With Gene Shalit”, *You Tube*, Uploaded by lawford83, June 4, 2008, <https://youtu.be/PlwqlHkF870>

¹⁷ Sullivan, Jack, “Conversations With John Williams”, *The Chronicle of Higher Education*, Vol. 53, Issue 19, January 12, 2007, pg. 6

¹⁸ *Ibid*, pg. 6

¹⁹ MSNBC, “John Williams: The Mission”, *You Tube*, Uploaded by Frank Radice, December 12, 2009, <https://youtu.be/FwBImLdP4ZQ>

footage assembled by the production team: “Every film [or] the action has a kind of tempo or rhythm in it, or doesn’t have it, you know? And [when] I look at the film, I’m trying to find out just exactly how fast is it or how slow is it because the film is telling me what the tempo is.”²⁰

Williams identified one of his constant challenges: “The themes are the most difficult to write. I try to analyze the character. Those qualities are starting points for me to develop musical phrases that would fit this kind of a character.”²¹

This underscores Williams’ extensive use of leitmotif, a technique used by some of his most admired predecessors, including Wagner, Stravinsky, and Korngold. Leitmotif pairs a character, emotion, place, or other idea in opera or film to a melodic theme. This can be very effective in reinforcing a character’s presence in a scene or, more subliminally, referencing a character without a physical presence. Perhaps the most famous use of leitmotif in Williams’ writing is the two recurring semitones, low in the orchestra, associated with the presence of the shark in the 1975 Spielberg film *Jaws*.

Unlike many of his contemporaries writing for film today, Williams does not make use of any technological tools: “I don’t have a synthesizer or computer. I haven’t been educated in that technology. When I was studying and learning music, these things didn’t exist and I’ve actually been too busy in the intervening years to retool and learn it all.”²² However, technology is very much a part of realizing his scores once the recording phase begins. Recording engineers, whether it be in a concert hall or recording studio often have over one hundred microphones

²⁰ Indie Film Academy, “Steven Spielberg with John Williams Talk About The Soundtracks For E.T. and Jaws”, *You Tube*, Uploaded by Indie Film Academy, October 19, 2014, https://www.youtube.com/watch?v=5_8RTDbDVTU

²¹ Music Express Magazine “John Williams Interview for Music Express Magazine”, *You Tube*, Uploaded by Music Express Magazine, April 20, 2012, <https://youtu.be/zNX2rNaCDso>

²² “John Williams”, *biography.com*, Biography, July 30, 2019, <https://www.biography.com/musician/john-williams>

capturing the performance. This enables the volume of a soloist, section, or an effect to be adjusted, suiting the film as need be.

Another modern recording technique which Williams takes advantage of is overdubbing, a process whereby a soloist can be recorded and ‘added’ to the orchestra at a later date.²³ Overdubbing allows for more time working with a soloist in a relaxed environment, often one on one, shaping subtleties in performance or adding very nuanced timing to synchronize with a movement on screen long after the recording of the full orchestra.

A Williams orchestra typically uses the instruments set out in Ex. 2.1 below.

Ex 2.1: Standard Orchestra Instrumentation

FLUTE 1	TROMBONE 1
FLUTE 2	TROMBONE 2
PICCOLO (or flute double)	TROMBONE 3 (or bass trombone double)
OBOE 1	TUBA
OBOE 2 (or English horn double)	
Bb CLARINET 1	TIMPANI
Bb CLARINET 2	PERCUSSION 1 (bass drum, snare, triangle, crash/suspended cymbal, tambourine, woodblock)
BASS CLARINET (or Bb clarinet/Eb clarinet double)	PERCUSSION 2 (glockenspiel, xylophone, chimes, marimba, vibraphone)
BASSOON 1	HARP
BASSOON 2	PIANO/CELESTE
FRENCH HORN 1	
FRENCH HORN 2	VIOLIN 1
FRENCH HORN 3	VIOLIN 2
FRENCH HORN 4	VIOLA
Bb (or C) TRUMPET 1	CELLO
Bb (or C) TRUMPET 2	CONTRABASS
Bb (or C) TRUMPET 3	

This instrumentation is, at times, augmented to accommodate the sound requirements of a particular film. For example, the score for *Memoirs of a Geisha* uses standard orchestral instrumentation along with Japanese instruments including the koto, a string instrument, the

²³ “John Williams scores *Memoirs of a Geisha*”, *YouTube*, Uploaded by Loki1982axala, October 3, 2010 <https://www.youtube.com/watch?v=EADmfeL17ZE>

shakuhachi, a wooden flute, and Tibetan ‘singing’ bowl percussion instruments. In his earlier work, synthesizers were added to orchestral scores in *Family Plot* and *Dracula*. However, aside from these early works, his compositions largely remain traditionally orchestral.

Some positions within an orchestra require a musician to play a second instrument within the same family. This is known as doubling. One of the main reasons for doubling is to add another colour to the section. For example, an orchestrator might want the colour of an oboe but it is slightly too low for the instrument’s range. The player would be directed to switch to english horn (the next lowest instrument in the double reed family) to play a specific passage before returning to the oboe. The writing for these secondary instruments is generally less technically demanding and more about adding another musical colour to the orchestra. In general, either the second flute doubles on piccolo or two flutes are joined by a piccolo player who doubles on flute. Similarly, two oboes are standard with an english horn option as a third player or an oboist doubles on english horn. It is not uncommon for a bass clarinetist to double on both Bb and Eb clarinets. Either third trombone will double on bass trombone or be a dedicated tenor trombone player in the section. All percussion instruments required will be listed in the score. The pianist generally doubles on the celeste. These are all common doubling practices that Williams takes advantage of in his orchestrations.

2.2 Melodic Support

Not only has Williams written some of the most recognizable movie themes in the last fifty years, he has also created the environment surrounding and supporting those melodies. As can be seen from an analysis of his scores, Williams’ orchestrations are equally as creative as the melodies they support. Just as a composer might “hear” supporting harmony for a melody they

are composing, Williams realizes his orchestrations as he composes: the two are inseparable. In other words, he hears his intended orchestrations as he writes.

A very telling and impressive moment demonstrating Williams' marriage of composition and orchestration can be seen in an interview he and Steven Spielberg gave to Universal Pictures Sweden. In the interview, Williams, at the piano, is playing an idea for Spielberg for the first time. The piano performance is a reduction of a score that he has not yet written. Williams is playing the theme in the same key, at the same tempo, with the same harmony and inner line movements as what would be recorded months later in the score for the 1982 film *E.T.*²⁴

Williams is aware of the need for theme recognition as well as the power of repetition when writing for film. Capitalizing on the strength of the rhythm and the shape of the melody, Williams found a creative way to take a two bar idea and develop it into one of his most recognizable creations, *E.T.*'s "The Flying Theme" (see Ex. 2.2 below).

This theme has all the hallmarks of a well-crafted melody, namely, the use of repeated elements, both rhythmically and melodically. The seed of the idea is presented in the first two bars. Measures three and four are rhythmically identical to one and two and measures five and six bear a strong rhythmic resemblance. Melodically, the overall shape of the first two measures are repeated in m.3 and 4 and m.5 and 6: the result being an eight-bar theme based on two bars of inspiration.

This theme illustrates another one of Williams' strengths: the ability to create a connection between what is happening on screen and what is happening in the score. "The Flying Theme" accompanies a scene in *E.T.* where Elliot, the main character, defies gravity as he races on his

²⁴ "Steven Spielberg och John Williams skapar ledmotivet till E.T. The Extra-Terrestrial", *YouTube*, Uploaded by UniversalPicsSweden, October 15, 2012, https://youtu.be/EDC_fppZ1Kg

bicycle to evade the police. The melody supports this visual as it rises in pitch (m.1 G to G', m.3 A to A', and m.5 D to high C) resulting in an ascending melody ending a tenth higher than it started, supporting the ascent of the bicycle.

Ex. 2.2 “The Flying Theme” from *E.T.*



Once his themes are written, Williams’ focus shifts to how these themes will be supported. There are numerous examples of Williams intentionally assigning his melodies to solo instruments delicately supported by an orchestra: *Schindler’s List*’s solo violin, *JFK*’s solo trumpet, and *Memoirs of a Geisha*’s solo cello. Williams has suggested in interviews that having a solo instrument carry the theme helps convey a sense of “solitude or isolation” where an onscreen moment calls for such treatment.²⁵

In contrast to having a single instrument provide the melody, Williams will at times assign the melody to entire sections of the orchestra. For example, the power and excitement of the trumpet department is called upon to provide the melody in the opening bars of the “Superman March”. As can be seen in Ex. 2.3 below, Williams assigns all four trumpets to the melody (pick up to m.21), separated by an octave.

Ex. 2.3 Brass Note Assignment in the “Superman March” m.20-22

The musical notation for the 'Superman March' shows two staves for Trumpet 1,2 and Trumpet 3,4. The key signature is one sharp (F#) and the time signature is 12/8. The notation indicates that all four trumpets play the melody, with the two staves representing pairs of instruments. The melody is shown for measures 21 and 22, with measure 22 ending with a double bar line.

²⁵ “John Williams scores *Memoirs of a Geisha*”, *YouTube*, Uploaded by Loki1982axala, October 3, 2010 <https://www.youtube.com/watch?v=EADmfeL17ZE>

It is not until m.23 that Williams shares the trumpet melody with explosive brass support. This support takes the form of a massive chord Fma9#11, using every member of the brass section in a wall of sound not unlike an arrangement for a jazz big band. See Ex. 2.4 below.

Ex.2.4 Piano Reduction Brass Note Assignment in the “Superman March” m.23

Shortly thereafter, at m.27, four trumpets, nine woodwinds, glockenspiel, vibraphone, harp, and piano are all dedicated to playing the melody in unison while lower strings and lower brass provide rhythmic and harmonic support. At m.35, all the violas and cellos are assigned the melody, once again, all in unison. It is not uncommon to hear large numbers of instruments assigned to his melodies doubled or tripled at the octave so as to create a richer timbre as well as a perceived increase in volume.

Rarely does Williams use longer note values in the melody without assigning some rhythmic activity to other parts of the orchestra to maintain momentum and interest. In example 2.5 below, from the “Superman March”, the trumpets and french horns have just finished an eight-bar melody on the downbeat of m.26 with a half note. Williams immediately assigns triplet octave C’s to the trombones, tuba, and timpani to maintain forward motion. The very next bar (m.27) provides support for the melody through rhythmic dialogue between the lower brass/timpani and the trumpet/woodwinds. The underlying eighth note pulse is the constant that supports the melody throughout the score, driving this exciting march.

Ex. 2.5 “Superman March” Rhythmic Support of a Melody m.26-28

The image displays a musical score for two staves. The top staff is labeled 'Trumpets / Woodwinds' and the bottom staff is labeled 'Trom/Tuba/Timp/Strings'. Both staves are in 12/8 time. Measure 27 shows the Trumpets/Woodwinds playing a melody of eighth notes, while the Trom/Tuba/Timp/Strings provide a rhythmic accompaniment of eighth notes. Measure 28 shows the Trumpets/Woodwinds playing a melody of eighth notes, while the Trom/Tuba/Timp/Strings provide a rhythmic accompaniment of eighth notes.

Not only does the flow of his melodies seem inevitable, but so too does his approach to supporting them. One feels a sense of balance and completeness listening to his orchestrations. The accompaniment provides the perfect support, one that does not compete with his melodies, but adds to the interest and excitement of his work.

2.3 Harmonic Support - Overview

Angular leaps, multiple layers of rhythm, the use of extreme ranges of instruments or extreme volumes are some of the tools available to the composer/orchestrator to elicit an emotional response in a composition. Williams cleverly uses one of the more advanced tools by way of harmony. Consonant and dissonant harmony in music provide another approach to creating tension and release, in addition to providing melodic support.

A classic example of this approach is Bernard Herrmann's use of the minor second in the 1960 film *Psycho*. Herrmann, (a mentor of Williams), embraced the sharp tension created by the minor second high in the violin section in the famous “shower scene” from the film. This greatly augmented the visual tension of the attack on screen. Ethnomusicologist Adam Scovell writes

“Herrmanns’ [*Psycho*] score is perhaps one of the most instantly recognizable in the whole of cinema.”²⁶

Williams makes constant use of harmonic techniques that will support his melodies and elicit a response in the listener. In an interview discussing the score for *Star Wars: Episode VII*, Williams said, “I know where to put the ‘surprise button’ to help elicit a reaction.”²⁷ Williams tends to focus on aspects of harmony which are concerned with chord inversions, chord colours, reharmonization, harmonic pedalling, and polytonality. In this section, I will analyze these harmonic techniques more closely to uncover how Williams achieves his ends.

2.3.1 Chords and Inversions

There is no shortage of melodies that are harmonized with very few chords. As such, a melody will often dictate very simple harmony. However, a composer, in particular a film composer, finding the need to restate themes or theme fragments multiple times, will support them with alternate harmony or orchestration, conveying different degrees of tension and release as required by the film. Just as intervals performed harmonically produce varying degrees of consonance and dissonance, so do chords. Some hold tremendous consonance and stability while others produce a need for change or resolution. It stands to reason that a combination of chords or a chord progression can contribute to a sense of calm or one of restlessness. Williams is very aware of this power and harmonizes his melodies according to the desired outcome.

²⁶ Scovell, Adam, “Analysis of Sound and Music in Alfred Hitchcock’s *Psycho* (1960) – Part 1”, *Celluloid Wicker Man*, December 16, 2013, <https://celluloidwickerman.com/2013/12/16/analysis-of-sound-and-music-in-alfred-hitchcocks-psycho-1960-part-1/>

²⁷ “Interview: John Williams on Scoring *Star Wars: Episode VII*”, *YouTube*, Uploaded by Star Wars, July 27, 2013, <https://youtu.be/kQ4jZr1w0AI>

Just as the quality of a chord can contribute to a sense of stability or instability, so can inversions of a chord. For example, a simple triad voiced from the third (1st inversion) or the fifth (2nd inversion) is less stable than one in root position. Williams takes full advantage of this by supporting “Adventures on Earth” from *E.T.* entirely with chords in 1st inversion, as demonstrated in example 2.6 below.

Ex. 2.6 1st Inversion Harmony in “Adventures on Earth” *E.T.* Piano Reduction m.118-121

The musical score for Example 2.6 shows the first four measures of the piano reduction of "Adventures on Earth" from *E.T.* The melody is written in the right hand, and the harmony is written in the left hand. The harmony consists of major 7th chords in first inversion. The chords are: Dbma7/F, Cma7/E, Bma7/D#, and Dma7/F#.

The downbeats of every bar create a minor sixth between the melody and bass and is far richer and ironically more stable than if Williams had the orchestra in root position (with both the melody and root beginning on the tonic). Williams’ approach in the above example suggests forward motion without complete resolution. In addition to the sense of movement achieved through the use of 1st inversion chords, Williams bases the melody on a Lydian scale with a raised fourth degree which makes many appearances in his work. Finally, in the example above, Williams provides harmonic support for the melody using major 7th chords, which also complement the sense of lift and motion he has established through the melody.

As with triads in first position, Williams is purposeful in his voicing of 7th chords. In any good part-writing exercise, one needs to pay particular attention to proper voice doublings in a chord. Voice doublings may even play a part in the choice of melody note at any given time. Williams has a particular fondness for voicing 7th chords from the seventh degree. The resulting

closeness of the major 2nd using a V7th (or mi 2nd using a ma7th) to the root of the chord obscures its stable sonority and makes for a rich texture generally found in more complex chords.

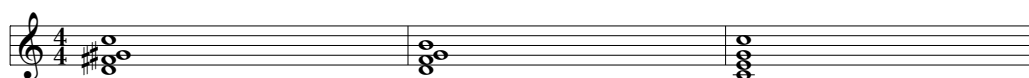
Williams' use of this inversion is particularly convenient when the melody is employing the fifth degree of the scale, but is used extensively in his writing regardless of the melody degree. In the "Superman March", Williams assigns the secondary theme to the french horns. In bar 46, beat 2 (example 2.7 below), he voices the major 7th in 3rd inversion creating a minor 2nd between the F# and G: a rich jazz voicing that he often incorporates into his orchestral note assignments. He sets it up with three inversions of C6 using close whole tone relationships.

Ex. 2.7 "Superman March" Voicing Major 7th chord in 3rd inversion m.46



Some chords created and utilized by composers are so unique that musicologists and theorists assign to them a name. For example, the "Petrushka Chord" when discussing the work of Stravinsky, Wagner's "Tristan Chord", and the "Copland Chord" developed by Aaron Copland. Williams himself has such a distinctive chord: a V7#11 chord made up of two tritones stacked a major third apart (see Ex. 2.8 below). The chord serves as a stand-alone or dominant functioning sonority. Its whole tone structure affords multiple melodic options that Williams capitalizes on. While not Williams' creation, he calls upon the chord when in need of a colourful sonority, either mid-phrase or in a cadence.

Ex. 2.8 Use of V7#11 in Williams' Writing D7#11 to G7 to C



The “Williams” chord draws on a Lydian dominant scale allowing for melodic options which suggest movement or lift, not unlike a whole-tone scale. Another way of describing it is as a D7 #11 chord (derived from the fourth degree of A melodic minor).

2.3.2 Harmonic Pedal and Ostinato

Yet another approach used by Williams to support a melody is harmonic pedalling. Examples of this compositional technique can be seen in works by Purcell, Chopin, and Wagner. Pedalling has a unifying effect while at the same time creating tension by providing a foundation upon which non-chordal harmonies and melodies can exist above the pedal. The opening seven measures of the “Superman March” is a good example of how Williams uses harmonic pedalling to support the opening fanfare. In Ex. 2.9 below, the timpani provides a pedal C while the horns, trumpets and trombones outline dominant harmony in the fourth bar.

In the seventh bar of example 2.9 below, the brass create harmonic movement with Ab/C, Bb/C, Db/C before resolving to yet another sequence of harmonic pedalling. This second sequence employs the stacking of 4ths and a G7sus4, all over a pedal G in preparation for the main theme in C major. The result is a tremendous amount of harmonic tension.

Ex 2.9 Harmonic Pedalling in “Superman March” m.1-7

The musical score for Ex. 2.9 consists of two staves: Brass (top) and Timpani (bottom). The key signature is one flat (Bb) and the time signature is 4/4. The Brass part features a melodic line with various ornaments, including triplets and sixteenth-note runs. The Timpani part provides a steady pedal point on the note C (middle C) throughout the seven measures, indicated by a single note on the staff with a repeat sign and a 'C' below it.

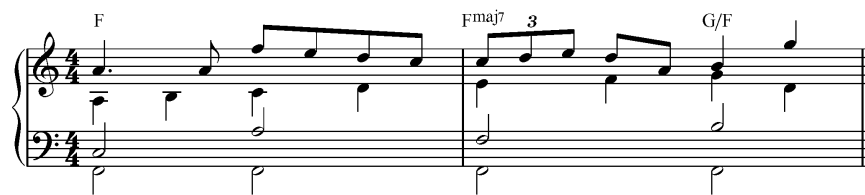
Williams also uses a form of ostinato pedalling to great effect in “Theme From The Lost World” from the *Jurassic Park* series. The opening seventy-two bars drive relentlessly over a pedal A, propelled by the timpani’s alternating root/fifth eighth notes. The concept manages to sustain interest due to the constant meter changes (not often employed in Williams’ writing). This, combined with a haunting triadic horn melody, contributes to a deliberately unsettling landscape by keeping the engaged listener challenged in determining phrase beginnings and endings.

2.3.3 Reharmonization

Reharmonization can be defined as the alteration of an original harmony upon the restatement of a theme. Williams will often reharmonize a melody either with a simple variation of the original harmony, or use more advanced techniques, which help elicit a specific emotional response from the listener.

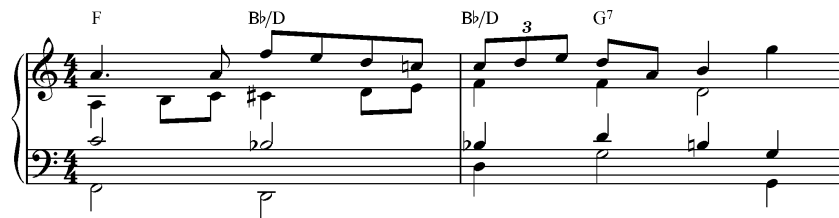
This is well-exemplified in the secondary theme from *Star Wars* as heard in the use of two chord presentations in Ex. 2.10 and 2.11 below. Given that melodies generally use notes that are part of the chord of the moment, there are multiple chord options available to the composer to support melodies, all helpful in creating various degrees of tension. The first hearing of the secondary *Star Wars* theme is supported by an F harmonic pedal, as seen in Ex. 2.10 below.

Ex.2.10 *Star Wars* Secondary Theme m.114-115



The next hearing of this secondary theme, as set out in example 2.11 below, received more complex treatment. The strong root motion alone (F, D, D, G), would be a straightforward approach to harmonizing the melody. However, this two-bar example is very polyphonic. Williams borrows from the natural minor in creating the rising alto line with a raised fourth (B) in the alto voice. The C# in the alto has a diminished quality letting the voice leading dictate the vertical sonorities. In addition, the early arrival of the destination G in the second bar is a deliberate shift from the expected resolution on beat three. Clearly, Williams is showcasing his harmonic skill amidst this otherwise conservative approach.

Ex. 2.11 *Star Wars* Secondary Theme Reharmonization m.28-31 (condensed)

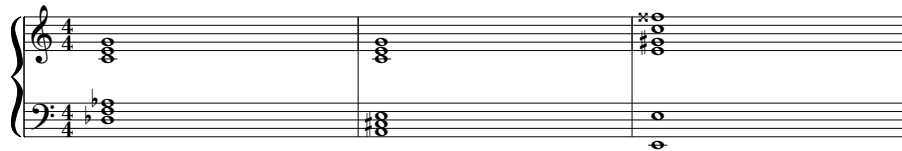


2.3.4 Bitonal Approach

One of the most obvious and unsettling harmonic techniques at the disposal of a composer or orchestrator is the use of bitonality: the simultaneous use of two key centres which together often produce an unstable environment. The ear struggles to align itself with one key centre while the composer intentionally prevents the resolution. An example of Williams' use of bitonality occurs in m.62 - 64 of the “Star Wars Theme” (see Ex. 2.12 below). Firmly based in Bb major, the theme is purposely jarring by way of a C triad/Db triad for two bars followed by C triad/A triad and a slightly less dissonant E b6#9 /E. The bitonality in this section creates an intentionally unsettling soundscape for the listener by restricting the resources necessary to identify a key

centre. It is remarkable how Williams incorporates such approaches while still making his work accessible to the general public.

Ex.2.12 Williams' use of a bitonal approach in “Star Wars Theme” (piano reduction)



2.4 Rhythmic Support

Few energizing techniques are as powerful as an entire orchestra playing the same rhythm. Perhaps the most dramatic example in Williams' writing is again in the main *Star Wars* theme when we hear the entire orchestra playing a highly unsettling Db#4/ C chord for seven bars, the last three half notes dictated with a dramatic ritard (see Ex.2.13 below). The two quarter notes on beat two of the fourth bar (m.85) are of interest. They are well-placed in disrupting the lilt of the quarter note triplets adding to the tension of this dramatic phrase.

Ex. 2.13 Mono Rhythm in “Star Wars Theme” m.82-89



Williams' use of rhythms in his accompaniments is very effective in encouraging the listener to participate in the experience. These rhythms are often quite complex, but the underlying beat or pulse is convincingly implied. Often large sections of the orchestra will play an identical rhythm, providing strong harmonic support while a melody using a different rhythm plays above: a simple but highly effective approach to orchestration.

Williams chooses his rhythms as carefully as his pitches and chords. The rhythm of an accompaniment should support the intended focus without distraction. Example 2.14 below

demonstrates Williams' use of two simultaneous rhythms: one in the melody and the second in the accompaniment. If one is rhythmically simple, the other can afford to be more complex. Ironically, the accompanying rhythm is by far the more complex of the two yet still manages to be subordinate to the unison trumpets.

Ex. 2.14 Rhythmic Dialogue Trumpets and Trombones *Star Wars* m.4-11



As noted above, the accompaniment to the melody in the example 2.14 is both rhythmically complex and harmonically simple. The bassoons, french horns, snare drum, lower brass, and lower strings play an exciting rhythm that alternates essentially between simple and compound time while supporting four unison trumpets providing the melody. Embedded in the rhythm is the basic harmony of I (Bb) and V (Fm7), all that is necessary to support the trumpet melody. The whole thing is really a cleverly disguised march for orchestra. The accompaniment has fewer measures of activity playing on the downbeats rather than the offbeats. The genius in this approach is his engagement of the listener. The listener is compelled, even given the complexity of quarter and eighth note triplets, to tap along in the rests embedded in the accompaniment. The fact that Williams has designed the piece as a march is further supported at m.87 when the tuba is

assigned a descending quarter note line along with typical march-like support from the percussion section.

Williams is quite demanding of his orchestra's rhythmic abilities. Even the performance of simple rhythms can become challenging when musicians are required to listen to other instruments some thirty feet away in a concert hall or recording studio. Another example of Williams' use of complex rhythms to accompany his melodies can be found in the main theme for *Raiders of the Lost Ark* performed at a brisk 120 bpm (see Ex. 2.15 below). The trombones are given a challenging sixteenth-note accompaniment providing the only harmonic support in the passage. The accuracy of the performance of the two simultaneous rhythms relies heavily on the listenership across the orchestra. The basses and timpani finish the rhythm (on the 'and' of the third beat that the trombones started) in all four bars.

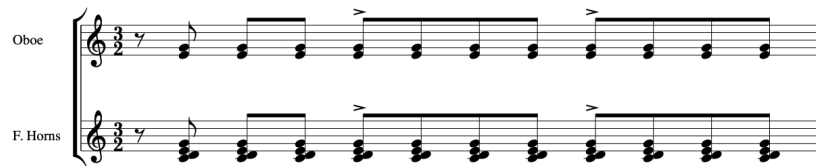
Ex. 2.15 Rhythmic Interaction in "Raiders' March" m.7-11

The musical score for measures 7-11 of "Raiders' March" is presented in two systems. The first system contains staves for 4 Trumpets, 3 Trombones, and Basso and Timp. The second system contains staves for the continuation of these parts. The key signature is one flat (B-flat major or D minor), and the time signature is 4/4. The Trumpets play a descending quarter-note melody. The Trombones play a complex sixteenth-note accompaniment. The Basso and Timp play a simple quarter-note accompaniment.

In lieu of percussion instruments to drive his creations, Williams will often use ostinato rhythms provided by other sections of the orchestra. Such rhythms can provide a foundation for counter-rhythms, inner moving lines or melodies, creating energy and forward motion. Example 2.16 below from *E.T.* sees Williams assigning a simple yet highly effective eight bar driving

eighth-note rhythm to both the french horns and oboe, providing the harmonic foundation for the string and clarinet melody, while the flutes provide their diatonic flourishes. Williams emphasizes his intentions by explicitly indicating in the score that the notes should be “Driving (In 3)”.

Ex. 2.16 Ostinato Rhythm in *E.T.* m.9



In contrast to his use of rhythmic support in the examples above, Williams does something quite different in his score for the film *Angela's Ashes*. In that score, Williams, from the outset, injects much agitation by means of asymmetrical mixed meters. An opening bar of 6/8, followed by one in 7/8, 15/8 and 12/8 is not conducive to toe-tapping given the constant change in meter. As well, the repetition of the hemiola in the melody contributes to its angularness, conveying an unstable footing.

2.5 Woodwinds

Williams often calls upon the woodwind section to play very diverse roles in the space of a relatively short piece of music. “Yoda’s Theme” from *The Empire Strikes Back* demonstrates this point. This four-minute piece sees the woodwinds playing five distinctly different roles in a short period of time. The clarinets and bassoons start by supporting the melody with simple triadic whole notes. This is followed by a single oboe responsible for the melody (doubled by the french horns) while three flutes supply supportive harmony along with the strings. Lastly, the focus shifts entirely to the woodwinds with two flutes and piccolo providing the melody, supported by clarinets, oboes, and bassoons. Most impressive is Williams’ ability to make extremely varied

assignments within the woodwind section sound inevitable, convincing the ear of the listener that each instrument was the perfect choice for their assigned part.

Unlike the brass and string families, woodwinds can present a balancing challenge as their dynamic abilities are very restricted depending on the range assigned. Because of this, when playing as a section, whether the focus of the moment, or in an accompanying role, the note assignment of the woodwind family requires special attention. The flute, for example, is not capable of loud volumes in their low register. Conversely, double-reed instruments, like oboes, english horn or bassoons find it difficult to play softly in their lower range. This is not to say that Williams will not write for flute in the lower registers, he just reserves those moments for times when dynamics allow and ideally when instrumentation is sparse.

Another way Williams achieves woodwind dynamic balance is by adapting a melody such that an instrument is kept in its power range. For example, in “Hedwig’s Theme” from *Harry Potter*, at m.128, the melody and harmony are entirely triadic in nature (see Ex. 2.17 below). The trumpets are the focus, carrying the melody, but the woodwinds in a supporting role are assigned inversions of the trumpet triad. Williams intentionally keeps the flutes high in their range, sometimes abandoning the melody they were assigned and reassigning them a higher note in the triad, knowing others are playing the melody note of the moment. The oboes are in their mid to lower registers, able to project, and the clarinets, with fewer dynamic restrictions, are assigned the remaining notes to complete the triad. As the woodwinds are not responsible for the melody, Williams allows for some quick neighbouring note embellishments, adding further colour. With this busy triadic activity in the higher woodwinds, Williams provides balance in the section by assigning longer note values to the bassoons and contrabassoon playing pedal tones throughout.

Ex. 2.17 Harry Potter “Hedwig’s Theme” Woodwind Embellishment m.128-131

The image shows a musical score for two woodwind parts: Piccolo/Flute/Oboe/Clarinet (top staff) and Bassoon (bottom staff). The music is in 4/4 time and consists of two systems of two measures each. The top staff features a melodic line with eighth and sixteenth notes, while the bottom staff provides a harmonic accompaniment with sustained notes and some moving lines.

The clarinet, with its cylindrical bore and few overtones, has a wonderful ability to blend. As such, Williams often has the clarinet doubled with instruments from other sections. For example, the clarinet’s pure, round, vibrato-less classical tone is often heard supporting melodies in the string section. As Arthur Olaf Andersen notes in *Practical Orchestration*, “Clarinets blend beautifully with the violins, violas and cellos.”²⁸ The bass clarinet and bassoons often play dual roles in an orchestra. In ensemble playing, they will take on bass and tenor roles in the woodwind section and will often switch to supporting the cellos or horn section when the rest of the woodwinds are tacit. In fact, it is not uncommon to see the bass clarinet doubling the cellos, note for note, given their ability to blend both in texture and range. Williams will also split the lower woodwinds, assigning the bass clarinet to ground the upper woodwinds, while lending the bassoons to the cellos.

The oboe, the most agile of the double reed family, is widely used for the doubling of a melody and is ideal as a virtuosic solo instrument, able to cut through dense orchestration in any range. Williams’ “Nimbus 2000 Theme”, supporting Harry Potter’s magical broom in *Harry Potter And The Philosopher’s Stone*, features the oboes with others from the double reed family -

²⁸ Andersen, Arthur Olaf, *Practical Orchestration*, C.C. Birchard & Co., 1929, pg. 124

the English horn and bassoons. Williams takes advantage of the wide range of articulations available to the group of instruments presenting the theme.

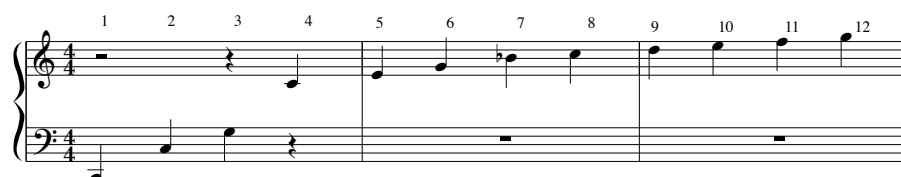
Williams created one of his most recognizable themes for *Close Encounters of the Third Kind*. That theme, consisting of five notes, is played by each of the flute, bassoon, and clarinet, before it is presented for a final time by the celeste. This approach is not uncommon as Williams often distributes his solo work throughout much of the woodwind family, not favouring one instrument over another. Whether it be the focal instrument of an entire theme or dividing segments of the melody throughout several instruments, he uses every colour of the woodwind section at his disposal.

2.6 Brass

A trumpet player himself in his teenage years, Williams not only knows the regal and stately qualities the brass department can provide, he knows the power, excitement, and majesty they afford an orchestration. Brass features are plentiful in Williams' writing: from solo trumpet in "Summon the Heroes" from *Lincoln* to sectional works in "Fanfare to Fenway" and "Liberty Fanfare". Williams demands much from his brass sections with delicate articulations, challenging interval leaps, and extreme range expectations that produce exciting results.

Some of Williams' most recognizable themes feature the brass section. The melodies of brass fanfares often make use of notes available in the numbered partials of the harmonic overtone series (see Ex. 2.18 below). These harmonics are very accessible to members of the brass family.

Ex. 2.18 Harmonic Overtone Series



There is no shortage of melodies (including “The Last Post” and “Reveille”) that are either based entirely on the overtone series or heavily influenced by it. This is because fanfares based on the overtone series can be performed on any brass instrument without the use of valves or slides. Open fourths and fifths above and below the tonic are favourites for brass fanfare writing. In this way, modern brass instruments are used to mimic the brass bugle of the past, which was void of valves and required manipulation of the airspeed travelling through the instrument to implement pitch change.

Aaron Copland, a mentor of Williams, uses the 3rd, 4th and 6th degrees of the overtone series in the opening of “Fanfare for the Common Man” (see Ex. 2.19 below). The fourth partial of the series often acts as the tonic in overtone compositions: the dominant available at both the third and sixth partial.

Ex 2.19 “Fanfare for the Common Man” Aaron Copland Trumpet Fanfare m.1-3



Another of Williams’ mentors, Eric Korngold, was clearly inspired by the overtone series. Once again, the 3rd partial (F#) is used as the dominant, the 4th (B) as the tonic, and the 6th (F#) as the dominant above the tonic (see Ex 2.20 below).

Ex. 2.20 *Kings Row* Korngold “Main Theme” m.1-5



Williams too uses the overtone series to present his main theme for *Star Wars*. In addition to the 3rd partial (G), 4th (C), and 6th (G’), he uses the 8th partial (high C), the “tonic”, an octave higher than the fourth, to outline his theme (see Ex 2.21 below).

Ex. 2.21 “Star Wars Theme” m.3-9



Turning to orchestration in a melodic setting, Williams often assigns 1st and 2nd trumpets the melody, doubled by the 3rd and 4th an octave below. This octave spread is not uncommon in orchestral works and yields surprisingly more power than if all were in unison. As seen in example 2.22 below, an excerpt from the “Olympic Fanfare and Theme”, Williams has the 1st and 3rd trumpet assigned to the melody and the 2nd and 4th, the harmony. There are at least two reasons for this assignment. The first is improved tuning. Exposed open fifths and fourths (inverted fifths) are very unforgiving intervals to tune and require close proximity for success. The second reason is the third trumpet is considered the “alternate lead” in the section and would be given a higher part. Interestingly, in the same example, identical assignments are given to the french horns with the exception of the fermata half note. Here, Williams has the 1st and 3rd horn on the 3rd of the IV chord while the 1st and 3rd trumpet are assigned the fifth degree.

Ex 2.22 “Olympic Fanfare and Theme” Trumpet Note Assignment m.1-2

Musical notation for Ex. 2.22, "Olympic Fanfare and Theme" Trumpet Note Assignment m.1-2. The notation shows two staves. The top staff is labeled "Trum I and II" and the bottom staff is labeled "Trum III and IV". Both staves are in 4/4 time. The melody is played by Trum I and II, and the harmony is played by Trum III and IV. The notation shows a series of eighth and sixteenth notes, followed by a fermata half note.

The french horns are perhaps the section most closely associated with Williams’ sound, playing a versatile role in his orchestrations as they sit in the middle of the frequency spectrum in the brass family. French horns are assigned both melodic and harmonic duties in a Williams orchestration. They are equally capable of exciting articulations alongside other instruments in the brass section (see Ex. 2.22 above).

The french horn, with its conical bore, provides perhaps the most instantly recognizable timbre in the brass family, blending equally well with strings and woodwinds. Similar to the woodwind section discussed in Chapter 2.5, careful attention to dynamics is important when balancing a brass section. For example, writing forte in everyone's part will not necessarily achieve proper balance as a french horn does not have the same projection capabilities as a trumpet or trombone. There are several workarounds for this, the simplest being to score for more horn players. In the opening fanfare for *Call of the Champions*, Williams does just that. Not only does he write for six french horns helping balance the brass section, he assigns two players each to the three-note triad. Meanwhile, both the trumpets and trombones are assigned just one note each, achieving balance in this double forte entrance. Furthermore, not competing with any other brass, he assigns his opening theme to all six french horns in unison, adding one trumpet to join them, thereby ensuring their forte performance is heard over the *mf* markings for the rest of the orchestra.

“Hogwarts Forever” from *Harry Potter and the Philosopher’s Stone* demonstrates Williams’ ability to write for quartet. The piece, scored for four horns, provides melodic and rhythmic interest in each part (see Ex. 2.23 below). Smaller ensembles often reveal tuning shortcomings, therefore good intonation is imperative to the success of this short piece full of non-intuitive harmonies.

Ex. 2.23 “Hogwarts Forever” from *Harry Potter* Four-Part Horn Writing m.1-4

The musical score for four horns (Horn 1, 2, 3, 4) in 4/4 time, measures 1-4. The score shows four distinct parts with various melodic and rhythmic patterns. Horn 1 starts with a quarter rest, then plays a series of eighth and quarter notes. Horn 2 plays a steady eighth-note pattern. Horn 3 plays a series of quarter notes. Horn 4 plays a series of eighth notes, ending with a triplet of eighth notes in measure 4.

Williams' writing for the trombone requires strong players. Many of the scores analyzed not only require the nimble articulations normally associated with trumpets and french horns, but the performer's tuning must be accurate given Williams' tendency for major second and minor second voicings. A passage from "Adventures on Earth", from the *E.T.* score, demonstrates the high skill level required by Williams' trombone section (see Ex. 2.24 below).

Ex 2.24 "Adventures on Earth" Trombone 1, 2 and Bass Trombone m.118-121



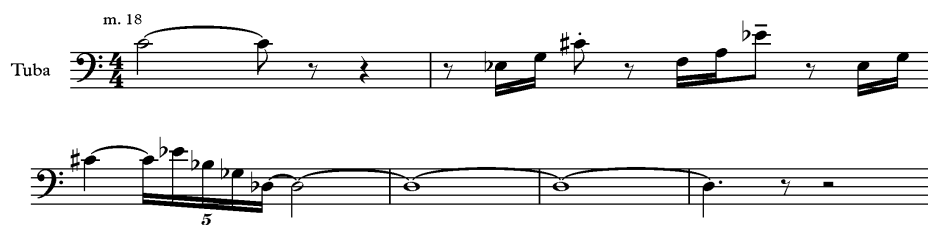
The success of the passage at m.118 above, given the brisk tempo (160 bpm), relies on the ostinato rhythm the trombones provide.²⁹ This is of particular importance given that the trombones are responsible for the only rhythmic activity in the passage. In addition to providing rhythmic interest driving this section forward, the trombones provide the outline of the harmony. The trio is assigned a 7th, tonic, and 5th voicing, omitting the 3rd starting on the second bar, establishing a minor 2nd growl only the trombones could provide in this range. This two-bar pattern holds all of the rhythmic interest during this phrase as the woodwinds and strings are simply playing a quarter note melody. Interestingly, four bars later in the phrase, Williams assigns the same part to the trumpets doubling the trombones an octave higher. This provides a texture change without introducing new content, helping to provide a very clean, driving accompaniment.

²⁹ See also Ex. 2.16 in Chapter 2.4.

A discussion of Williams' fondness for the brass department would not be complete without an acknowledgement of his featured use of the tuba in two of his best-known scores. In *Close Encounters of the Third Kind*, Williams features the tuba in a prominent role by using the tuba as a stand-in for the aliens in the musical dialogue between spaceship and scientist (clarinet), in one of the most famous uses of leitmotif in all of Williams' works.

The tuba, along with four french horns, is called upon to state the angular melody floating above the haunting lower strings in the movie *Jaws* (see Ex. 2.25 below). Williams marries the tuba with contrabassoon in some very exposed writing knowing that the late tuba virtuoso, Tommy Johnson, would be on the recording session. Williams challenged the dexterity of Johnson once again writing very high in the tuba range. When asked why the part was written in such a high register, when the french horn might seem more appropriate, Williams responded: "Well, I wanted something that was in that register but I wanted it to sound a little more threatening".³⁰

Ex. 2.25 Tuba Melody in *Jaws* m.18-23



Williams has a formula writing for brass that is very effective in simultaneously providing melody, supporting harmony, and rhythmic interest. Example 2.26 below shows an effective distribution of interest Williams often uses when orchestrating for brass. The instrument choices

³⁰ Chaundy, Bob, "Spies, Sports, and Sharks", *news.bbc.co.uk*, November 6, 2006, http://news.bbc.co.uk/2/hi/uk_news/magazine/6107576.stm

will vary, but in this case, the french horns and the first two trumpets are providing the melody either in unison, thirds, or sixths during the shorter note values and breaking into full chords when the note values lengthen. Underlying this is a rhythmic accompaniment provided by the trombones and the tuba, at times in an intertwined rhythmic conversation, and, at other times, in rhythmic unison providing unifying strength. The rhythmic content is based on the introductory fanfare itself, all contributing to the unification of the composition.

Ex. 2.26 Part Writing for Brass in *Olympic Fanfare and Theme* m.77-80

The image shows a musical score for brass instruments, measures 77-80. The instruments are listed on the left: Fr Hn 1 and 2, Fr Hn 3 and 4, Tr 1 and 2, Tr 3 and 4, Tb 1 and 2, Tb 3 and 4, and Tba. The score is in 4/4 time. Measures 77 and 78 show the French horns and trumpets playing a melody in unison, while the trombones and tuba provide a rhythmic accompaniment. Measures 79 and 80 show the French horns and trumpets playing a melody in thirds, while the trombones and tuba provide a rhythmic accompaniment. The tuba part is written in the bass clef, while the other instruments are in the treble clef.

2.7 Strings

Orchestrators find unique ways to achieve their goals. Although string instruments commonly play one note at a time, they are quite capable of playing double stops (i.e. playing two or more notes simultaneously on adjacent strings). This technique is standard fare in string writing, but physical limitations can restrict certain combinations of notes. Williams favours the technique known as “divisi” (assigning one half of the string section one note, and the other half another).³¹

³¹ It is my view that divisi yields more accurate tuning and, for that reason, I much prefer it in contrapuntal writing.

The eight bars of string writing shown in Ex. 2.27 below is from Williams' *Liberty Fanfare*, and serves as a masterclass for divisi string orchestration. In measures 83 to 90 below, Williams divides the 1st and 2nd violins, the violas, the cellos and the basses, providing seven independent lines interacting with one another simultaneously. The passage, while short, is complex. It contains a strong transitional theme, rhythmic independence and dependency, contrapuntal entrances, varied bowing techniques and harmonic interest.

Ex. 2.27 *Liberty Fanfare* String Interlude m.83-90

Good balance is required in any divisi writing, and achieving good balance is even more challenging when a section of the orchestra plays in combination with the remainder. Unlike the example from *Liberty Fanfare* above, in the “Theme From The Lost World”, Williams has his string section playing nine separate parts, all of which need to be heard when intermingled with the rest of the orchestra (see Ex. 2.28 below).

Ex. 2.28 *The Lost World* Nine Divisi Strings Parts m.48-49

The musical score shows five staves for string instruments. Violin I and Violin II are in treble clef, Viola is in alto clef, and Violoncello and Contrabass are in bass clef. The key signature has one sharp (F#). Measure 48 is marked with a box containing the number 48. In measure 48, Violin I and II play a melody starting on G4, marked with a forte (f) dynamic and a divisi (div.) instruction. Viola plays a sustained chord marked with a forte (f) dynamic and a divisi (div.) instruction. Violoncello and Contrabass play a rhythmic pattern of eighth notes, marked with a forte (f) dynamic. In measure 49, Violin I and II play a melody with a fermata. Viola plays a sustained chord with a fermata. Violoncello and Contrabass continue their rhythmic pattern.

It is particularly difficult to balance the string section with other sections of the orchestra while utilizing a divisi technique. It is something at which Williams excels. While divisi writing allows for greater texture and more harmonic extensions, the result is not as loud. This means the rest of the orchestration needs to compensate for the ‘thinness’ of the section playing divided parts. The obvious remedy for this problem is through the use of dynamics, but Williams often eschews that remedy in favour of strategically choosing other instruments to support his string section. In example 2.28 above, the strings are supported by the upper woodwinds, which are assigned identical parts. In addition, the cellos and basses are supported by the bass clarinet, bassoon and contrabassoon. This combination of instruments not only yields richer texture, but allows for fewer moving parts, resulting in a cleaner presentation.

Williams generally keeps things simple for the double basses. He often doubles the bass or cello lines with the bass clarinet, bassoon, piano, or contrabassoon not only because they blend well, occupying the same frequency space, but also because they help in the clarity of articulation and execution of a note, something not always achievable by strings alone.

Consistent string bowing directions for the entire section result in a unified sound and are often left to the discretion of the concertmaster, or at the very least, the leader of every section.³² As professional violist Holly Mulcahy states: “the personnel, the conductor, the styles and tastes, and the varying acoustics (in the hall) are all factors (in assigning bowings).”³³

Specific notations are used to achieve various timbral results. One example of this is in the “Bike Chase” sequence of *E.T.* where violins 1 and 2 are required to play the melody ‘sul G’. This instruction for the left hand tells the player to play the entire passage using only the G string (the lowest on a violin), forcing a distinctive glissando between notes. This approach ensures a textural consistency. Without this instruction, the player would naturally switch to the D string, losing the glissando as well as the richness and consistency of sound provided by playing the thicker G string higher on the neck. This, along with the fortissimo dynamic marking, brings the part to the forefront.

Many of Williams’ techniques are standard fare for any string section. The doubling of the violin melody at the octave by the violas or cellos adds strength, depth and power. From assigning divisi, tremolo, trills, glissing (from one note to another), pizzicato and arco bowings, Williams does not stray far from stock orchestration practices. What does stand out is the speed at which he requires the string section to play. Just as Williams might write challenging parts in consultation with particular soloists (Itzhak Perlman or Yo-Yo Ma), he assigns extraordinarily fast runs to his string section, knowing the calibre of player hired for his recordings. These fast

³² As Andersen indicates in his book *Practical Orchestration*, “The importance of bowing may be likened to the importance of phrasing in helping with a unified sound.” Andersen, Arthur Olaf, *Practical Orchestration*, C.C. Birchard & Co., 1929, pg. 83

³³ Mulcahy, Holly, “Bowing For Mahlers; Decisions On Bowing Direction”, *Neo Classical*, September 4, 2015, <https://insidethearts.com/neoclassical/2015/09/bowing-for-mahlers/>

runs are in keeping with Williams' constant search for textural exploration. Scale-like passages and arpeggios are a staple of string players' practice routines but Williams tests the limits with his expectations.

2.8 Harp

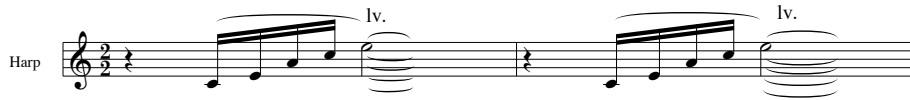
It wasn't until the 19th century that the double-action harp, one that included pedals allowing for chromaticism, became a fixture in the orchestra. As a result, the harp was seldom used in an orchestral setting before this time because the fixed scales of the harp limited its usefulness. However, the harp takes on many roles in a Williams orchestration. The harp is assigned melodies on its own or in combination with other instruments. In addition, it provides harmonic accompaniment through the use of chords or arpeggiation. Finally, it is assigned scale-like runs or flourishes.

Williams' use of the harp in combination with other instruments to present a melody is nicely exemplified in "Hedwig's Theme" from *Harry Potter And The Philosopher's Stone*. After the initial statement of the theme by the celeste, the harp, joined by the alto flute, english horn, bassoon, and vibraphone, restate the theme in unison. This quintet, which combines the bite of the double reeds and the mellowness of the harp, vibraphone and alto flute creates the perfect texture for this ominous and somewhat angular theme.

In addition to presenting the melody, Williams later uses the harp's polyphonic capabilities to support the chord of the moment (see Ex. 2.29 below). In m.139 and 140, the harp is providing harmonic support in the key of A minor in the secondary theme. The sixteenth note rhythm ending on beat three is in contrast to the triplets being played by both the clarinets and violas. At

a brisk 1/2 note = 80 bpm, the harp line is perceived more like a quick arpeggiated chord, masking any conflict of rhythm with the triplets.

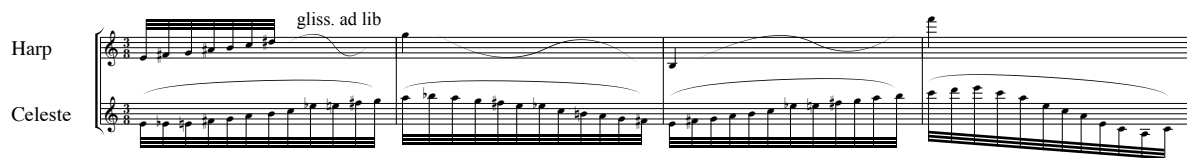
Ex. 2.29 Harp Support in “Hedwig’s Theme” *HP and the Philosopher’s Stone* m.139-140



Williams assigns flourishes to the harp, celeste, and violins 1 and 2 in “Hedwig’s Theme”. The harp has for centuries been called upon to play arpeggios, diatonic runs and glissandos mid-phrase or to support a transition into a new section of music. They are plentiful in Williams’ scores. For example, Williams includes over eighteen separate harp runs or glissandos in “Hedwig’s Theme” alone.

Williams will, at times, give the harp the freedom to create its own rhythm within a designated range. For example, in the excerpt from “Hedwig’s Theme” set out in example 2.30 below, the celeste is given a strict 32nd note run while Williams allows the harpist freedom over the rhythm they are to play in the passage. Curiously, the fourth degree of the scale notated in the harp part (A#) differs from the A natural in the celeste.

Ex 2.30 Harp Runs in “Hedwig’s Theme” *Harry Potter and the Philosopher’s Stone* m.35-38



Finally, Williams’ attention to detail presents itself in a delicately placed harp glissando in “Hedwig’s Theme”, as can be seen in example 2.31 below. Until the glissando in m.74, the harp has been doubling the woodwind and vibraphone melody that concludes on the downbeat of m.73. The next phrase of the melody is given to the french horns starting with a pickup to m.75.

Williams chooses to have the harp conclude the melody and immediately play a diatonic two-octave glissando before the french horn restates the theme. This glissando acts as the glue between two sections as the entire orchestra is resting. Williams could have had the harp end the glissando on the next downbeat but chose not to do so. As important as this solo harp moment is in maintaining momentum, Williams has the run stop exactly on the french horn pickup to allow for a clean entrance by the horns.

Ex. 2.31 Harp Glissando *Harry Potter And The Philosopher's Stone* m.71-74

The musical score for measures 67-74 of *Harry Potter and the Philosopher's Stone* features a Harp (Hp.) and French Horn (Hrn.) part. Measure 67 shows the Harp playing a diatonic two-octave glissando. Measure 73 shows the Harp playing a glissando (labeled 'gliss.') and the French Horn playing a pickup note.

2.9 Choir

Williams has used choirs in more than thirty of his scores. Choral writing can be found in pieces composed for *Saving Private Ryan*, *Schindler's List*, and *Star Wars*. Williams has choirs sing neutral syllables, such as “ooh and aah”, which add another layer of texture to his music. An exception to this is the piece Williams wrote for the opening ceremonies of the 2002 Olympic Winter Games, sung by the Mormon Tabernacle Choir. Entitled *Call of the Champions*, the piece is scored for choir and orchestra, including an expanded brass section with six french horns, four trumpets, and four trombones. This is reminiscent of some later adaptations of Handel's *Messiah* or a Mahler symphony. Williams found inspiration for the piece from the Latin phrase that was used as the motto for the Olympic Games: “Citius, altius, fortius”, meaning “faster, higher, and

stronger”. These three words are the only ones found in the entire text, the remaining notes to be sung to “Ah——”.

Similar to divisi used in the strings, Williams splits the alto and tenor sections of the choir in m.1-6 (see Ex. 2.32 below) to allow the melody, an F# atop the 1st inversion F# major triad, to be assigned to both the sopranos and first tenor. At the same time, Williams maintains good chord balance with the altos, second tenor and bass providing the 3rd and 5th of the chord. The score provides cued parts for additional horn players in the event the piece is performed without a choir. This seems a suitable instrument choice given the vast range of the horn along with its blending capabilities, which are not unlike the human voice.

Ex. 2.32 Divisi in *Call of the Champions* Chorus m.1-4

The musical score for Ex. 2.32, Divisi in *Call of the Champions* Chorus m.1-4, is written for Soprano, Alto, Tenor, and Bass parts. The key signature is one sharp (F#) and the time signature is 3/4. The Soprano part has a melody of F#4, A4, B4, C5, with lyrics 'Ci ti us', 'al ti us', 'for ti us', and 'Ah'. The Alto and Tenor parts are in divisi, each playing a three-part harmony. The Bass part provides the bass line. The score is divided into four measures, each with a 3-measure rest for the Soprano part.

2.10 Percussion

Rarely does Williams see the need for more than a standard set of percussion instruments in his work. Timpani, bass drum, snare drum, cymbals and a generous assortment of tuned percussion instruments: marimba, xylophone, vibraphone, glockenspiel, chimes, celeste and piano (the last two technically part of the percussion family) are all that are needed to get through most Williams scores. Williams chooses to weave his percussion instruments judiciously

into the fabric of the orchestra rather than force them upon the listener to achieve his writing goals. He shows restraint in his use of the percussion section. When called upon, he uses it in one of three ways: for transitions, to support rhythmic punctuations assigned to the rest of the orchestra, and for using pitched percussion to double melodies.

In a symphonic setting, one can expect the percussion section to be busiest during transitions where they are needed to support the end of a phrase and announce the beginning of another. Timpani are often called upon to provide such support. Two timpani have been used in orchestras for centuries to reinforce cadences using drums of fixed pitches. They are also one of the few orchestral instruments that have seen significant physical modifications over the last century, allowing them to quickly change pitch in semi-tone increments by way of a hydraulic pedalling system. Beethoven made use of two timpani of fixed pitches for his symphonies, whereas modern composers are allowed greater freedom with key centres given the timpani's present-day tuning flexibility. Today, the use of four timpani are standard in a modern orchestra. It is not uncommon to see six timpani in Williams' scores.

Williams will also reinforce phrase endings with centuries-old techniques using suspended cymbal and snare drum rolls as effective tools to support transitions. Much like a harp or piano glissando, these non-pitched instruments can provide excitement in transitioning from one section to another. The non-pitched snare drum and cymbals are an odd match to support the pitched instruments in an orchestra but 'blend' surprisingly well. It is not unusual for Williams to pair suspended cymbal and snare drum rolls with harp or piano glissandi to further highlight a new phrase.

Williams will use drums, where appropriate, to reinforce the emotional impact of moments in a film. For example, the use of a field drum and bass drum are the ideal tools in providing an American patriotic presence. *JFK*, a film about the assassination of the American President, begins with a solo concert snare drum in combination with a much deeper rope field drum. This is followed by a single trumpet and the pedal tone of the basses providing an ominous drone, one so fitting for the subject matter. The fife and drum or the trumpet and drum have military associations that help convey emotional resonance in the film.

Williams also uses pitched percussion instruments in many of his pieces. He chooses to assign entire melodies to the marimba or glockenspiel in combination with other sections of the orchestra. Most notable is his use of the celeste in the *Harry Potter* scores. Williams also takes advantage of the 20th century invention of the vibraphone for creating “mysterious” textures. The blend of vibraphone, alto flute, english horn, bassoon, muted trumpet, and harp used in “Hedwig’s Theme” is a particularly haunting combination. The *ppp* ‘misterioso’ indication in the vibraphone is in contrast with all others playing at *mp* suggesting that Williams wants the vibraphone’s presence to be felt, but not heard.

Williams prefers to use the percussion section sporadically to punctuate, enhance, and support rather than relying on it to provide continuous rhythmic accompaniment. I believe Williams sees the percussion department as another voice in the overall texture of the orchestra. Surprisingly, he alters this approach in his score for the “Theme From The Lost World”, relying heavily on the percussion section. In this piece, timpani and two “tuned” drums (joined by the bass clarinet, bassoon, contrabassoon and cellos) relentlessly drive the one-hundred and eleven bar multi-

metered theme, accompanying the movements of prehistoric creatures on screen. In commenting on that score, Williams noted:

With its slightly darker and more mysterious mood ...
...I used extensive percussive rhythms, mixed with
irregular but dancelike metric patterns, all of which
could be combined and presented with full orchestra
force and energy.³⁴

Williams, himself a pianist, uses the piano sparingly in his orchestrations, preferring to use it as another colour rather than follow the approach employed by many of his Hollywood contemporaries: a piano-based theme supported by orchestra. Williams will often assign identical arpeggiated flourishes to both the harp and piano, casting a mystical sheen while providing harmonic support to the melody. He often has the piano doubling the woodwinds, strings, or harp. In a Williams orchestration, the piano typically uses octave doublings or, at times, three simultaneous notes, but never more than four. Other than occasional arpeggiated downbeats, the piano rarely plays chords on its own.

2.11 Dynamics and Articulation

Two things come to mind when reading a Williams score. First, given the detailed articulation markings, it is clear that Williams gives much thought to how he wants his music performed. Second, given so much information, the musicians can assume he expects to hear this detail.

Orchestral musicians, in addition to playing the correct notes at the correct time and for the correct duration, are expected to play all indicated articulations assigned to notes. With orchestras approaching one hundred musicians, attention to detail is paramount in achieving a unified sound. Often the more information on the page, the more thought the composer has given

³⁴ Williams, John, "Theme From The Lost World", *The Lost World: Full Score*, MCA Music Publishing, 1997, pg. 2

to how they want the part played. As a result, composers and orchestrators are very particular about wanting to hear those articulations executed.

Members of professional orchestras are highly trained technicians. Every piece of information provided on a page of music given to an orchestral player is reproduced exactly as written: no more, no less. If an intended legato trumpet phrase is without a slur indication, the player will tongue every note. If a woodwind section is missing staccato markings, the notes will receive full value. Consequently, without the musician's careful adherence to dynamic markings and articulations provided by the orchestrator, the ensemble will not be balanced and unified. The more specific the instructions, the more likely the orchestrator will get the intended result.

Detailed articulations can be found throughout Williams' scores. For example, considerable detail can be found in the trumpet notation opening Williams' "Superman March" (see Ex. 2.33 below). The slurred triplet on the second beat of bar one directs the trumpets to slur the first two notes, with the second and third triplet played staccato. The second bar sees accents on all three notes with tenuto signs over the first two suggesting that there is to be no gap between all three. The crescendo in the third bar in itself implies a tenuto marking over the half note with no space until striking the fourth bar downbeat.

Ex. 2.33 Trumpet Dynamics and Articulation in *Superman* m.1-4



The first beat of the fourth bar in the example above is of particular interest. Beat one could easily have been written with a beamed dotted eighth/sixteenth note rhythm with a staccato symbol underneath the dotted eighth. Williams prefers to write these kinds of rhythms as

detached sixteenth notes with an eighth rest in-between. However subtle, this sends a clear message to the player that his or her task is not to make the first note short, but to ensure a gap between the two sixteenth notes. As well, the accent on the downbeat helps convey Williams' desire with respect to the weight of the note. These clear articulations demonstrate that Williams is very specific about what he expects to hear coming from the trumpet section presenting this theme. As the theme continues, other sections have similar articulation markings, making for a very unified execution of the main theme. This is not to say that every note has detailed markings. Williams is very aware of how musicians would naturally articulate a passage and only clarifies when there might be doubt or something out of the ordinary he is wanting to hear.

In contrast to the detailed articulation present in the *Superman* example above, simple accents are all that are necessary for Williams' famous motif in *Jaws* which can be seen in example 2.34 below. The energy and unsettledness of the theme at m.12 is helped tremendously by the use of both horizontal and vertical accents: a highly effective approach to creating unrest within a three-note pattern. The lower detached divisi of the cellos and contrabass acts as a secondary theme punctuating downbeats as well as defining beats two and four in the second bar of the pattern. Williams makes much from very little in this iconic theme.

Ex. 2.34 Simple Cello and Bass Accents in "Shark Theme" from *Jaws* m.12-13

The image shows a musical score for two parts: Vc. (Violoncello) and Cb. (Contrabasso). Both parts are in 4/4 time. The Vc. part consists of a continuous eighth-note pattern with accents (>) on every note. The Cb. part consists of a continuous eighth-note pattern with accents (>) on every note. In measure 12, the Cb. part has a 'div.' (divisi) marking above the first note. In measure 13, the Cb. part has a 'div.' marking above the first note and a 'div.' marking above the second note. The Vc. part has a 'div.' marking above the first note in measure 13. The Cb. part has a 'div.' marking above the first note in measure 13.

Balance in an orchestra is achieved in one of two ways: through dynamic markings or through the number of players assigned to a part. Williams employs both techniques at various times in his compositions.

Williams is meticulous in his dynamic assignments so as to ensure balance within his ensembles. I believe that this attention to detail allows the musicians in a Williams orchestra to play with confidence that the composer and orchestrator have given careful consideration to blend and balance.

For example, in m.75 of “Hedwigs’ Theme”, Williams achieves balance by assigning *f* to four unison horns playing the melody, *mf* to the english horn (also playing the melody) and *mf* to the violas, providing scale-like harmonic support while at the same time ensuring a horn focus.

The second approach to balance is by assigning a portion of a section of the orchestra to a part, thereby limiting the volume output. This generally applies to the brass department. For example, “a1” or “a2” in a trumpet, french horn, or trombone part suggests that only one or two of the players in the section should play the part. The string equivalent is using ‘divisi’ as described in Chapter 2.7 above.

In a rehearsal, a live performance, or a recording session, an attentive conductor will often suggest subtle changes to the orchestra’s playing, reacting to the acoustics in a hall, a particularly strong section of the orchestra, or an exuberant section leader, to achieve the desired outcome. Williams is such a conductor. For example, in a rehearsal for a concert for the Shoah Foundation playing his “Raiders’ March”, Williams can be seen quickly responding to an imbalance in the woodwind and french horn section, gesturing that a much lower volume was needed at that

moment.³⁵ This suggests that the dynamic markings that had been sufficient for other orchestras were not satisfying Williams' need for balance in that performance of the piece. As noted above, the recipe needed for a nice blend with one orchestra might not be the same for another.

At other times Williams will, in rehearsal, further refine even the detailed articulation markings set out in his scores. For example, in a rehearsal for the commissioned work "For The President's Own" with the United States Army Band, Williams can be seen addressing the brass section and commenting: "Those quarter notes need a little bit more length to them."³⁶ Yet another subtle suggestion is made in a recording session for the "Great Performances Theme" for PBS, where Williams is heard saying: "I'm going to see if I can't legato-ify the trumpets".³⁷

In conclusion, Williams uses dynamics and articulation markings to great effect. A unified approach, whether writing for small or large ensembles delivers a powerful message to the listener and requires the efforts of everyone involved, especially when the composer is at the podium.

2.12 Ornamentations

Every instrument has the ability to play exciting flourishes or effects. Many are available to even a novice musician without much effort, and an experienced orchestrator will capitalize on this. A trill, for example, between specific notes is quite achievable on many instruments with ease. A film orchestrator will utilize these ear-catching ornamentations to help achieve the filmmaker's goals. For example, a tremolo played by a string section can add excitement and is

³⁵ "John Williams conducts 'Raiders March', Shoah Foundation rehearsal - December 8, 2016", *YouTube*, Uploaded by David Blanchard, December 14, 2016, <https://www.youtube.com/watch?v=JcVTb6O7AnY&feature=youtu.be>

³⁶ "Marine Band Celebrates Anniversary with John Williams", *YouTube*, Uploaded by United States Marine Band, July 11, 2013, <https://youtu.be/QDHR8tex8hY>

³⁷ "John Williams Records Great Performances Theme Song | Great Performances on PBS", *YouTube*, Uploaded by Great Performances on PBS, July 24, 2015, <https://youtu.be/E2s3fVMPwL8>

available at both very low and high volumes. Williams capitalizes on this use of a tremolo by assigning double stops to the first violins, as seen in example 2.35 below, from *Harry Potter and the Philosopher's Stone*. This shimmering effect at m.17 accompanying the celeste theme, along with fast scale-like runs at *ppp*, is effective in creating atmosphere in the piece.

Ex. 2.35 1st Violin Fingered Tremolo “Hedwig’s Theme” m.17-20



Unlike a string tremolo, a woodwind tremolo requires that the player alternate between two notes very quickly, creating a sense of harmony within a single instrument. Accompanying the main trumpet theme from *Superman* at m.19 are the piano, woodwinds and strings. Williams assigns a tremolo to the woodwinds at that bar creating a shimmer, thereby separating them from the piano and strings.

Scales or arpeggiated runs in the woodwinds are exhilarating, ear-catching flourishes used extensively in Williams’ writing. The flute and piccolo are some of the most nimble members of the orchestra and their ability to cut through the density of other instruments makes them ideal candidates for assigning exciting flourishes. They are often heard preceding a strong downbeat or punctuation in the brass section to help strengthen the anticipation of the approaching chord. Measure 14 of the “Superman Theme” sees an interesting flourish on beat one, ending on beat two, as seen in example 2.36 below. Williams assigns the flutes, piccolo, oboe, and clarinets to play an arpeggiated, seven-note run in the time of one beat. At the same time, he has the oboes catching the last three notes of the Eb7sus4 arpeggio.

Ex. 2.36 Woodwind Flourish in “Superman Theme” m.14



Two things stand out in the passage above. First, asking five players to play seven notes in the time of one quarter note will result in many timing interpretations. Second, Williams' intent in this passage is to create excitement given that the rhythm assigned to the oboe does not line up with the flutes or clarinets. Whereas m.14 has the woodwinds playing an arpeggiated flourish in unison, m.15 has the woodwinds playing a sus2 chord flourish as they climb through a G Aeolian scale. At this brisk tempo, Williams only requires the listener to process the tension created by the burst as the tempo is far too fast to appreciate its complex harmonic content.

Working with some of the best orchestras in the world allows Williams to write very challenging string runs confident in the knowledge they will be performed accurately. In example 2.37 below, the 1st and 2nd violins (along with the celeste) are assigned fast 32nd note runs (174 bpm) starting at bar 35 and continuing for 39 bars. The entire passage is marked between *ppp* and *mp*, which suggests Williams is after an underlying buzz of excitement to accompany the melody, played by a most interesting collection of harp, vibraphone, bassoon, english horn and alto flute.

Ex. 2.37 Celeste and Violin runs in “Hedwig’s Theme” m.35-38



Advanced brass and woodwind players have the ability to double and triple tongue when playing notes too fast for single tonguing. Williams uses this to great effect in the *Olympic Fanfare* (as previously seen in Ex.2.22 at pg.30), which he was commissioned to write for the Olympic Games in 1984. At the tempo at which that piece is written (i.e. quarter note equals 88 bpm) the passage most definitely requires double tonguing by the trumpets, french horns and trombones.

2.13 Effects

Williams seldom leaves anything to chance. Short of some liberties afforded to soloists, dynamics and articulations are strictly adhered to in order to create a homogenous ensemble. This changes in *JFK*. Starting at m.109 of “The Motorcade”, shrieks can be heard from the woodwinds, strings, and percussion section that are closer to an atonal ‘new music’ repertoire than Williams normally entertains. Short, atonal *fff* blasts echo above the drone of the basses as the harp freely glisses in an undetermined key throughout its entire range. The first violins are asked to strike a string marked as an ‘x’ in the score between the bridge and the tailpiece, and the piano is directed to play ‘the highest white cluster’ of notes - quite effective in creating an unsettling and alarming environment.

An equally experimental effect is achieved in the score for *Memoirs of a Geisha*. The piece requires bows to be drawn across the lip of Tibetan metal bowls sitting atop a timpani, causing both to vibrate, resulting in a multitude of harmonics. Cymbals, crotales, and various sized gongs or vibraphone notes are bowed or scraped with a coin and made to resonate, creating an eerie palate of sound in keeping with the needs of the film. This approach to percussion writing is far

from uncommon in 20th century percussion ensemble compositions by John Cage or Steve Reich but rarely seen in Williams' tonal writing.

With no shortage of sound palates available from the orchestra, Williams' use of flourishes and effects are an integral part of delivering the sense of excitement, intrigue, and anticipation so often required by a film composer.

2.14 Conducting Considerations

Many conductors start their careers as professional musicians and finish as conductors. Others come to conducting through composition because they want control over the performance of their pieces. Williams came to conducting through his experience as a musician, composer, and orchestrator: "I found [conducting] a wonderful antidote to the monastic lifestyle of a composer."³⁸ Williams has said that he took up conducting in "self-defence" against music directors who weren't sufficiently familiar with his scores: "I wanted to bring what I had written to the fore in the most representative way I thought it could be given. And that was my sole motivation to conduct".³⁹

There are several approaches embedded in a Williams composition and orchestration that guarantee a unified performance by the orchestra whether in a recording session or on the concert stage. In a Williams orchestration, the parts are so detailed, the pieces often play themselves, while Williams himself gestures in broad strokes from the podium to give the intended feeling of the piece.

³⁸ Sullivan, Jack, "Conversations With John Williams", *The Chronicle of Higher Education*, Vol. 53, Issue 19, January 12, 2007, pg. 5

³⁹ Sullivan, Jack, "Conversations With John Williams", *The Chronicle of Higher Education*, Vol. 53, Issue 19, January 12, 2007, pg. 6

When given the option, Williams will conduct less rather than more, producing musical results by prompting the musicians to do what they do best: engaging their listening skills. There is an unquantifiable bonus to this minimalist approach. Ensemble playing is often more homogenous as it forces players to subdivide and interpret large gestures rather than strictly reacting to the dictation of the conductor. Conducting in “one” or “two” is a technique that requires the conductor to display note values from the podium to the orchestra that are twice or three times the value of the original beat note. For example, a brisk waltz might be better conducted in ‘one’, that is, one gesture per bar, representing the equivalent of three quarter notes in a bar rather than dictating every beat. Another example would be conducting in ‘two’, or duple, when a tempo in 4/4 would be too brisk to dictate every beat. In other words, half the gestures while the music progresses at the same rate.

Williams takes this concept of conducting in ‘one’ or ‘two’ a step further. Being the composer of most of the material he conducts, he incorporates the “one” or “two” approach into the time signatures in which he chooses to write. Many of Williams’ best-known works are well-disguised marches. Many marches are written in 2/2 or ‘cut time’ for ease of reading purposes. Writing in cut time eliminates the need for one layer of beamed notes, reducing clutter on the page when reading fast passages. When given the choice, Williams will write in 2/2 as opposed to 4/4, 3/2 as opposed to three bars of 2/4, or 12/8 allowing him the option of conducting in a quick ‘four’ or a moderate ‘two’.

With time constraints in preparation for a concert or a recording session, a conductor will start sections with the “correct” conducting pattern for clarity of tempo and switch to ‘one’ or ‘two’ when the correct tempo is established. These tools are often anticipated by orchestral players and

never discussed. This concept of conducting in ‘one’ or ‘two’ transfers much responsibility to the musicians to subdivide rhythms on their own.

Whether it be a solo instrumentalist taking subtle liberties with a cadenza or a section leader dictating a ritard, players who feel as if they are creative contributors rather than mere highly trained technicians following orders will take pride and satisfaction in their assigned responsibilities. This often results in superior performances. Having been at the receiving end of a baton, Williams knows how this sensitivity affects a performance and creates a powerful, creative collaboration with his musicians.

2.15 Writing Effectively for Musicians

Prior to conducting the Boston Symphony in concert at Tanglewood in August of 2019, Williams turned to the audience with high praise for the members of the orchestra. “These cultural institutions that we have in our country, like the Boston Symphony, represent a standard of excellence and superior art ...they are holding the culture up to be very high.”⁴⁰

The subtlest changes in tuning, a change in dynamics or tempo, or an alteration in phrasing will prompt an immediate reaction from an engaged player. In a performance setting, musicians are in a constant state of reacting in real-time to minute changes they hear surrounding them. Listening on this level goes beyond the mastery of a musician’s own instrument, requiring the ability to not only play with tremendous confidence and authority, but also to simultaneously react and match the approach of surrounding performers when in a subordinate role.

Given his own experience as a professional musician, Williams is well aware of the dedication to craft required by orchestral musicians. Williams writes taking into consideration their physical

⁴⁰ “John Williams’ Film Night”, *YouTube*, Uploaded By Boston Pops, August 29, 2019, <https://www.youtube.com/watch?v=j7pCf38yLak&feature=youtu.be>

needs and each instrument's limitations. While it goes without saying that every player has their strengths, it is generally accepted that orchestral musicians are some of the strongest sight-readers in the world. Orchestrators trust that notes, dynamic markings, tempo indications, articulations, bowings, slurs, metric modulations and phrase markings will be performed as indicated. Conversely, musicians trust the indicated markings have been given careful consideration and, as noted earlier in this paper, will play a passage exactly as written. In the case of film music, musicians on a recording session are not necessarily privy to how the music is being used in a scene and must trust the indicated markings, which are sometimes in conflict with their musical instincts.

Some instruments of the orchestra are afforded special consideration when a challenging or exposed passage is approaching. This is often the case when writing for the trumpet. Whereas many musicians can play their instruments for lengthy periods without a break, trumpeters, for example, need regular periods of rest to ensure they are playing on a refreshed embouchure. The combination of high and loud playing is very taxing on a trumpet player and for this reason, where possible, they are assigned periods of rest between passages.

In general, orchestral string players would much prefer reading a key signature with sharps than flats. Brass players, on the other hand, generally prefer flat key signatures. The choice to write for A or Bb clarinet, or a Bb or C trumpet in a score has little to do with the quality of the sound, rather it has to do with placing the passage in a more friendly key signature. This results in easier reading, fingering, and ultimately better intonation. Knowing this, Williams will allow time for a player to change instruments to ensure the best possible performance.

At times, non-musical terms can be helpful in conveying to a player how to approach a part. This is often used by conductors during the rehearsal process in an attempt to extract the intended sound from the orchestra. In an interview with violinist Itzhak Perlman, Perlman describes being guided by such an approach during a recording session with Williams for *Memoirs of a Geisha*. Williams suggests a passage be “bouncy” and, in another section, “introverted”.⁴¹

In the score for the film *JFK*, Williams describes the sounds he wants from his orchestra directly, without the use of traditional musical terminology. For example, in the third bar of the piece, Williams uses the term “distant” in the french horn section to help achieve the desired effect. Later in the same score, at m.65, Williams tells the trombones to play their passage “nobly”. Similarly, in the score for *The Patriot*, Williams indicates to his orchestra that the first entrance of the main theme should be played “heroically”. This atypical, direct terminology is used by Williams regularly to help get the sound he wants from the orchestra.

A good example of Williams’ collaborative conducting style was demonstrated during a live performance of *Call of the Champions* at the Cultural Olympiad Concert in February of 2002.⁴² The piece is written entirely in 3/2 and the extensive use of written quarter note triplets in the accompaniment, combined with common note values in the melody, makes for a straightforward conducting performance. This is helpful given this orchestration calls for over two hundred performers. Williams demonstrated his confidence in the orchestra in m.125 through m.127, a

⁴¹ “John Williams scores *Memoirs of a Geisha*”, *YouTube*, Uploaded by Loki1982axala, October 3, 2010 <https://www.youtube.com/watch?v=EADmfeL17ZE>

⁴² “*Call of the Champions* - John Williams Conducting the Mormon Tabernacle Choir”, *You Tube*, Uploaded by The Tabernacle Choir at Temple Square, February 6, 2014, <https://www.youtube.com/watch?v=67vvJOom1T4>

passage in which he felt it necessary to devote his attention to the choir, thus trusting the orchestra to continue playing through a familiar passage without any guidance. This responsibility is not only expected by an orchestra with such abilities, it is a quiet acknowledgment of the respect Williams has for the musicians with whom he works.

Williams will at times change time signatures in order to ensure an accurate performance from his musicians. In “Superman March”, Williams gives clear rhythmic direction to the clarinets and bass clarinet by changing the time signature to 4/4, departing from 12/8. As both time signatures share a quadruple conducting pattern, no confusion will arise from the altered notation. The eighth-note rhythm required by the clarinets would result in duple bracketed quarter notes if written in 12/8. Instead, the switch from 12/8 to 4/4 is much easier to read and likely yields a more accurate performance. There is no need for a courtesy conversion in the part (dotted quarter equals quarter) as the intent is clear and standard orchestral convention.

An orchestrator might achieve improved balance by indicating to a player if others in the orchestra are doubling or in some way blending with their part. This alerts the player to listen across the orchestra, adjusting as need be, yielding a more musical blend. Williams’ “The Flight to Neverland” from *Hook* is one of many examples in which we see helpful indications of the intended blend marked in the parts.

In m.54, Williams has the 3rd trombone move to support the tuba, leaving only two players in the trombone section. Williams “borrows” from the french horn section by assigning the fourth horn, generally a low-note specialist, to complete the trombone trio. The text “w/Tbns” in the music alerts the fourth horn player they are temporarily part of the trombone section, making the player aware of the need for blend (See Ex. 2.38 below).

Ex.2.38 Fourth Horn blending with Trombones “Flight to Neverland” m.53-54

The image displays a musical score for measures 53 and 54 of the piece "Flight to Neverland". The score is written for six parts: Horn I, II, III; Horn IV; Tpt. (Trumpet); Trb. I, II (Trombone I and II); Trb. III (Trombone III); and Tuba. The key signature is one flat (B-flat major or D minor), and the time signature is 9/8. The Horn I, II, III part is marked with a forte dynamic (f) and a breath mark (a3). The Horn IV part is marked with a forte dynamic (f) and a breath mark (w/Tbns.). The Tpt. part is marked with a forte dynamic (f) and a breath mark. The Trb. I, II part is marked with a forte dynamic (f) and a breath mark. The Trb. III part is marked with a forte dynamic (f) and a breath mark. The Tuba part is marked with a forte dynamic (f) and a breath mark. The score shows the Fourth Horn and Trombone parts blending together in measures 53 and 54.

As seen in the examples above, Williams gives much thought to both his note assignments and the way in which they are presented in the score and parts. Ultimately, his attention to detail yields a cleaner recording or performance.

In conclusion, the 'Williams Approach' is based on a thorough understanding of both the freedom and limitations inherent in the playing of orchestral instruments. Williams constantly demonstrates his knowledge of elements such as articulations, dynamics, range extremes and assignment of voicings in his writing for woodwinds, brass, strings, harp, choir and percussion instruments. In the end, however, it is his placing of this knowledge at the service of his musicality that sets him apart.

CHAPTER THREE: “Tribute to John Williams”

3.1 The Composition And Orchestration Process

“Tribute to John Williams” is an adventure in the world of orchestration for symphony orchestra. Inspiration was drawn from a combination of textures and templates discovered by listening to and analyzing over twenty scores by John Williams as well as the assimilation of my own interests in melody, harmony, texture and reharmonization. The result is a suite of through-composed themes for full orchestra.

Sections in Williams’ music were drawn upon specifically for their textures and inspired the support of my own melodies. The piece attempts to emulate his treatment of both solo instruments and larger sections of the orchestra as well his use of varied time signatures, tempos, and textures. While most of his compositions support motion pictures, “Tribute to John Williams” was written for music’s sake alone. Two components were involved in creating this suite for orchestra: composition and orchestration. Much time was taken composing themes that warranted elaborate orchestration, in itself a daunting task.

While writing “Tribute to John Williams”, it became clear that not every Williams technique (as analyzed in Chapter Two) would find its way into the work. Instead, each tempo, note value, articulation and orchestration was dictated by what best served the music. The challenge throughout the orchestration process was “listening” to what these newly composed themes required. It was important not to force Williams’ techniques upon the themes for the sake of demonstration. Williams supports his melodies with only what is required from the orchestra: nothing is superfluous or out of place. This piece attempts to do the same.

3.2 A Brief Overview

“Tribute to John Williams” consists specifically of seven themes connected by transitional material as set out in Ex.3.1 below. The seven themes vary in terms of musical style or genre. Two of the themes are waltzes. The rest range from playful, light-hearted dances to dramatic and sombre hymns. Great care was taken creating a sense of flow between sections. The assembly of the themes at times required transitional material when modulating to different key centres. Often, a ritardando or grand pause before the next theme seemed the appropriate solution. Different key centres, time signatures, and textures all required attention in creating flowing relationships.

Ex.3.1 “Tribute to John Williams” Structural Overview

FORM	Time Sig.	Principle Key Centre	Measure	Structure & Number of Bars	Approach
Fanfare	2/2	F	1-12	a + tag 10 + 2	Triumphant
Introduction	5/4	V of Cmaj	13-20	a 8	Driving
Theme One	3/2	C	21-36	a + a' 8 + 8	Soaring
Transition One	5/4	Gb, F	37-44	a + a' + a + tag 2 + 2 + 2 + 2	Lightly
Theme Two	2/2	Fmi	45-75	a + a' + tag + a'' + tag 8 + 8 + 2+4 + 8 + 1	Playful
Theme Three	2/2 (tag in 3/4)	Fmi, G#mi, Cmi	76-103	a + a' + a'' + tag (in 3/4) 8 + 8 + 8 + 4	Misterioso
Theme Four	3/4	C, Db, C	104-156	intro + a + b + a' + c + tag 4 + 16 + 4 + 16 + 12 + 1	Scherzando
Transition Two	2/2	C, Db	157-164	a + a' 4 + 4	Ominous
Theme Five	2/2	F	165-189	a + a' 12 + 12	Majestic
Theme Six	3/4	F	190-239	intro + a + b + c + a' + a'' 8 + 8 + 8 + 8 + 8 + 8	Playful
Theme Seven	4/4	F	238-263	a + a' + a'' + c 8 + 8 + 6 + 4	Maestoso

3.3 The Opening Fanfare and Introduction

The piece begins with a brass fanfare, which is fitting as Williams has written so many memorable themes utilizing the brass section. Inspiration for the opening fanfare can be traced to his brass writing in “Liberty Fanfare” and his compositions for the Olympic Games. The initial intent for this fanfare was to implement double and triple tonguing techniques. However, there is a grandness that accompanies longer note values. I determined that experimenting with anything other than long note values for this fanfare devalued the simplicity of the melody. As a result, I abandoned double and triple tonguing techniques in favour of a ten-bar rising melody and contrary descending root motion (see Ex. 3.2 below). This offered harmonic opportunities for multiple colourful chord extensions to be the focus of the fanfare.

Example 3.2 Melody and Root Movement m.1-12

The musical score for Example 3.2 is written in 2/2 time. It consists of two staves: a treble staff and a bass staff. The melody is written in the treble staff, and the root motion is written in the bass staff. The score is divided into two systems. The first system contains measures 1 through 8, and the second system contains measures 9 through 12. Above the staff, chord extensions are indicated for each measure: Fadd2, F+5/Eb, Dmin9, Bbm6/Db5, Fadd2/C, Cbm7b5, Bb, A sus4, 9 Db/Ab, Gb/Ab, and Ab. The melody starts on a dotted half note in measure 1 and rises steadily through the measures. The root motion in the bass staff descends in a contrary motion to the melody. The score includes phrase markings over the first ten bars, indicating a continuous flow through staggered breathing.

The decision to use the dotted half note in the first six bars required much thought as each chord needed weight as well as separation. Instead of dotted half notes, whole notes with breath marks were considered. However, the temptation to “cheat” the whole note led to the dotted half notes being the preferred option. In addition to the dotted half notes, the score indicates phrase markings over the first ten bars. The intent here was to achieve uninterrupted flow through staggered breathing and to avoid ensemble members breathing at the same time. As noted in Chapter 2.10, clear instruction not only saves valuable rehearsal time, it removes ambiguity as orchestral players are trained to play exactly what is on the page.

The brass is joined by the strings and percussion section starting on the downbeat of the ninth bar: Db/Ab or I 6/4. This is followed by a deceptive cadence in m.11-12.⁴³ The Gb/Ab to Ab in the last two bars of example 3.2 above suggests dominant functioning harmony preparing the listener for new material in Db major. Instead, the post-fanfare cadence in m.11-12 is followed by an eight bar orchestral introduction, all over a pedal G. This pedal, with its scale-like melody, invites more opportunity to explore harmonic extensions in preparation for the first theme in C major.

3.4 Theme One

The treatment of Theme One is modelled after Williams' "The Flying Theme" from *ET*.

Ex. 3.3 Theme One m.21-28



The choice to write in 3/2, as discussed in Chapter 2.13, requires that both the conductor and orchestra share the responsibility of internalizing the eighth note subdivisions of the half note. The orchestration is surprisingly simple given the large sound. The clarinets and bassoons are in octaves joining the violins and violas in playing the melody. The french horns join the oboes providing driving eighth notes while outlining the harmony. The basses, cellos, trumpets and trombones provide harmonic colour with moving lines and triadic support. Finally, the flutes provide octave runs creating excitement for the opening theme.

The second presentation of Theme One (m.29-36) posed a significant challenge: how to restate the theme using different orchestration while maintaining energy. Up until this time, the french

⁴³ I define a "deceptive cadence" as a deliberate avoidance of an anticipated harmony.

horns and oboes outlined the harmony playing ostinato eighth notes. Unlike the strings and percussion, brass and woodwind players not only need time to rest, they also need time to breathe. In addition, the listener needs a change from the horns playing the ostinato eighth notes. In order to accommodate that rest, the restatement of the theme now shifts to the strings. This orchestration approach was modelled after Williams. Both the oboes and french horns continue with harmonic support with the use of longer note values. The restatement of the theme by the strings also benefits from a harmonic colour change assigned to the cello. Instead of the passing I 6/4 (G/B) from C to A minor in the first presentation, the G# in the second bar of the theme in the cellos creates a secondary dominant to the A minor giving this second hearing a needed lift, a nod to Wagner as much as to Williams.

3.5 Transition One

Theme One of “Tribute to John Williams” concludes with a C7 in m.36, preparing for the F minor of Theme Two in m.45. Although functional, this change of key and time signature felt far too abrupt. As a result, a transition was required. The challenge was writing material without introducing another theme. Transition One, as set out in example 3.4 below, sees an abrupt textural and harmonic shift, departing C major and preparing for Theme Two in F minor. The result is a transition with a purposefully ambiguous key centre alternating between parallel harmonies Gb (tri-tone substitution of C) and F. Shorter note values and an odd time signature act more like a B section to the first theme and helped prepare the ear for Theme Two.

Ex. 3.4 Transition One: Melodic and Harmonic Reduction (m.37-44)

The musical score is written for three staves in 5/4 time. The first system (measures 37-40) shows a melodic line in the upper staff with notes Gb, Ab/Db, Gb, Ab/Db, and F. The lower two staves provide harmonic support with chords and single notes. The second system (measures 41-44) continues the melodic and harmonic patterns, ending with a C7 chord. Chord symbols are written above the upper staff: Gb, Ab/Db, Gb, Ab/Db, F, Gb, Ab/Db, Csus4, G7, C7sus4, and C7.

This transitional section is reminiscent of *Appalachian Spring*, the work of another of Williams' mentors, Aaron Copland.⁴⁴ One concern in orchestrating this first transition was that a change in colour would result in a drop in energy. However, the variation of instruments and the addition of a syncopated melody proved sufficient to sustain energy through the transition. The introduction of the piano and percussion, along with staccato markings and tremolo bowings in the strings all help to ease the listener into a new listening environment.

Long sections of odd time signatures, for example, 5/4 or 7/4, can often take their toll on the listener. The goal in this transition was to create a flow, obscuring the sensation of an odd time signature while facilitating a key change from C to F minor. The result is a highly repetitive rhythm and melody. The rhythm itself is not too tired to use once again at the end of the phrase (m.43-44) providing familiar material to take the listener into Theme Two.

⁴⁴ Regarded as one of Copland's strongest works, *Appalachian Spring* is an important example of tonal 20th century chamber writing.

3.6 Theme Two

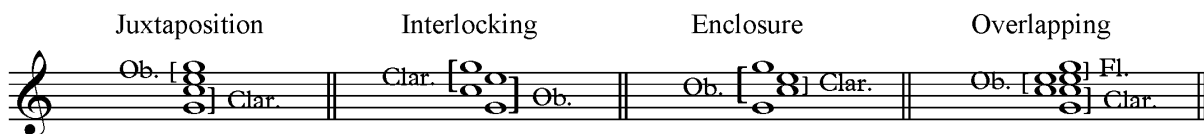
Inspired by “Hedwig’s Theme”, Theme Two (m.45-52), written in F minor is eight bars long and repeated three times. This simple melody dictates simple harmony allowing for embellishment with each hearing. The first time we hear the theme, it features a french horn trio, woodwinds and celeste. The second time, we hear the addition of brass and strings building to the final presentation using full orchestra. The three presentations utilize the underlying triadic support of the melody as set out in example 3.5 below.

Ex. 3.5 Theme Two Melody and Triadic Support m.45-48



The triadic voice distribution in the first presentation (m.45-52) required special attention. The blending of voices in the brass and string sections is much easier than in the woodwinds. With their individual textures, the flutes, clarinets, oboes, and bassoons require careful orchestration to achieve a unified blend. Example 3.6 below outlines four possible woodwind voicings: juxtaposition, interlock, enclosure, and overlap. As other woodwind instruments are introduced, they follow the same pattern established in each of the four voicing examples below.

Ex. 3.6 Woodwind Note Assignments⁴⁵



Williams often uses “juxtaposition” note assignments in his orchestrations. It is the safest choice of the four options. It is clean-sounding with each like instrument staying close together.

⁴⁵ Andersen, Arthur Olaf, *Practical Orchestration*, C.C. Birchard & Co., 1929, pg. 173

In addition, it generally allows the section to play in the middle of their power range. Other voicings, such as “interlocking” or “enclosure” (as seen in example 3.6 above) are also viable options. The concern, however, is one of balance within the section. For example, a flute is not capable of forte volumes in its lower register (third space C and lower). For this reason, dynamic restrictions will dictate voice assignments above blend considerations. The fourth type of voicing, overlapping (also set out in example 3.6 above) is for close voicings within a smaller range. Much care is needed with “overlapping” as note doubling or tripling might offset the doubling of the third or fifth degree of a chord, disrupting the harmonic balance.

The second presentation of Theme Two (m.53-62) hears the trumpets joining the french horns using the same triadic approach. The trombones and tuba are added for greater rhythmic and harmonic support, again with simplistic triadic voicings on the downbeats. The string section, playing diatonic flourishes, add energy and continue to ground the harmony.

Measures 63-66 (Ex. 3.7 below) of Theme Two act as a four bar interlude, all over a pedal C. The arpeggiated string lines combined with the offbeats in the basses prepare the listener for the final hearing of the theme with full orchestra.

Ex. 3.7 Theme Two: Interlude Reduction m.63-66.

Vn, Va, Vc

Inner voices

Cb

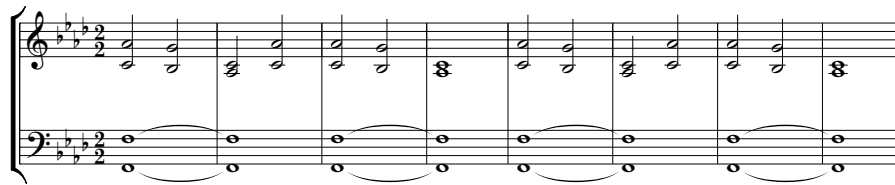
65

The last presentation of Theme Two (m.67-75) uses full orchestra with fanfare trumpets accompanying an ornamented woodwind melody to conclude the theme.

3.7 Theme Three

Theme Three allowed for an opportunity to re-orchestrate an idea with every subsequent hearing. The theme is presented three times, each time in a different key centre. The first time we hear it in F minor (m.76), the second time in G# minor (m.84) and the final time in C minor (m.92). The harmonic and melodic foundation is rooted in the use of sixths surrounding the tonic of the moment. The seed of the idea is set out in the eight bar piano reduction presented below in example 3.8 below, in F minor.

Ex. 3.8 Theme Three: Melody and Harmony in Fmi m.76-83



The celeste, glockenspiel, harp, and piano were chosen for their long decay in providing the foundation to Theme Three. The underlying harmonic and rhythmic pattern they provide balance the longer note values in the melody.

There were many considerations in choosing the harmony in Theme Three. A repeated descending melody in sixths combined with a pedal bass (F, G#, and C) set up multiple harmonic options, specifically in the tenor voice. I considered four options. Those options are set out as piano reductions in examples 3.9 to 3.12 below. In each of those examples, the soprano, alto and bass voices are identical. All of the examples were viable choices, however example 3.9 was chosen as most in keeping with the tone of the suite. The other three options would undoubtedly be employed in a larger work. However, given this is a short piece, it proved best to choose just one.

Ex 3.9 Theme Three Harmonic Option One m.80-83

Harmonic progression for Ex 3.9 (m.80-83): F9sus4, Fmi, Fmi, Db M7/F, Fmi6, Bbm6/F, Fmi.

Ex 3.10 Theme Three Harmonic Option Two m.80-83

Harmonic progression for Ex 3.10 (m.80-83): Bbm6/F, Db/F, Fmi6, Fmi6, Fmi7, Eb/F, Fmi6.

Ex 3.11 Theme Three Harmonic Option Three m.80-83

Harmonic progression for Ex 3.11 (m.80-83): Gmi/F, Fmi6, Fmi7, Fmi7, Fmi6, Gmi/F, Db M7/F.

Ex 3.12 Theme Three Harmonic Option Four m.80-83

Harmonic progression for Ex 3.12 (m.80-83): Gmi/F, Fmi6, Fmi7, Fmi MA7, Edim/F, Fmi7.

In addition to harmonic variations, Theme Three provided opportunities for varied orchestration. I began the theme with a “call and response” melody, giving the “call” to the first violin and viola and the “response” to the flutes and clarinets. There is also a “call and response” in the assignment of voices supporting the tenor part of the harmonic structure. The woodwinds provide the “call” in the third and fourth bar while the french horns provide the “response” in measures seven and eight.

The second hearing of Theme Three at m.84 has the trombones joining the cellos to reinforce the tenor voice. The timpani provide rhythmic interest with deliberate punctuation on the second beat of every bar. The celeste provides dual function both doubling the harp and supporting the timpani. The techniques outlined above, along with the shift to G# minor, provide interest in this presentation of the theme.

Eighth-note triplets in the woodwinds and violins, along with a key change and simple reharmonization are the focus of the third presentation at m.92. As a result, I abandoned the colourful harmony the tenor voice previously provided in favour of a simpler approach by means of a pedal C with I and V harmony.

A metrical change to 3/4 was added as a tag at m.100 following the third hearing of Theme Three in preparation for Theme Four. A four bar pedal G with a descending harmonic minor line, combined with a substantial ritard was all that was needed to prepare a new tonal centre and new time signature.

3.8 Theme Four

Theme Four is a waltz. There is a four-bar introduction defining the new and somewhat surprising C major tonality, followed by an eight-bar theme. The inspiration for this waltz arose from playing with parallel harmonies from the tonic triad. The third beat of each bar of the four-bar introduction alternates between parallel triads a semitone below and above the tonic (see Ex. 3.13 below).

The basses start the introduction by playing an arpeggiated root-fifth-tenth while the cellos provide chromatic support. The dissonance created between the tenth of the basses (E) and violin (G#) on beat two of m.104 create a palatable harmonic rub. I chose not to have the basses

continue their pattern at m.105 due to the dissonance resulting from the E in the basses and the F in the violins. Yet, I wanted to keep the semitone shape of the violin line. As a result, something had to change. It felt forced to have the basses alter their C-G-E pattern, so the tenth was simply omitted. (This was Williams telling me to include only what is necessary: not to force things.)

Ex. 3.13 Theme Four Introduction m.104-107 (piano reduction)

While proving effective as an introduction, the dominant functioning B triad and Db triad over the pedal C was weak as the harmonic foundation for a theme. The solution was to simplify the harmony once the melody started, thereby allowing the melody to be the focus (see Ex. 3.14 below). The melody landing on the dotted half notes Ab and Eb in m.2 and m.4 are convenient chord tones that give this motif its character.

Ex. 3.14 Theme Four Melody and Harmony m.108-111

A four bar staccato interlude at m.124 based in Ab and Ab/Bb harmony provides both rhythmic and tonal contrast preceding the unexpected shift to Db major at m.128 for the second presentation of Theme Four.

The last five bars following the augmentation at m.152-156 also needed new treatment to maintain interest. A “two against three” rhythm all over a dominant pedal provides a strong transition. The rhythm appears more complex in the score than what the ear perceives. I considered switching time signatures from 3/4 to 4/4 as the next section is in 2/2 (see Ex.3.15 and Ex.3.16 below). I chose to maintain the 3/4 time signature rather than shift to 4/4 and risk interrupting the flow of the line (not to mention unnecessary anxiety for the conductor). Both approaches work but staying in 3/4 and using hemiola ensures a seamless outcome.

The Second Transition was necessary as proceeding directly to the stately Theme Five felt too sudden. The eight bar long transition intentionally uses long note values to prepare the ear for the solemnity of the upcoming theme. Theme Four ended on a unison

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C nicely preparing for F major. I rejected the idea of making an immediate V - I segue as it felt too abrupt.

Rhythmically, I chose simple quarter notes in the first four bars and the layering of whole notes in the last four bars, along with a ritardando. This allowed for an ambiguous tonal cluster deliberately obscuring the next tonal centre. It also allowed for a Williams-inspired descending Lydian b7 to be assigned to the woodwinds. A grand pause follows the final chord in Transition Two giving the ear time to rest (see Ex. 3.17 below).

Ex. 3.17 Transition Two: Piano Reduction m.157-164

Chord progression for Ex. 3.17:

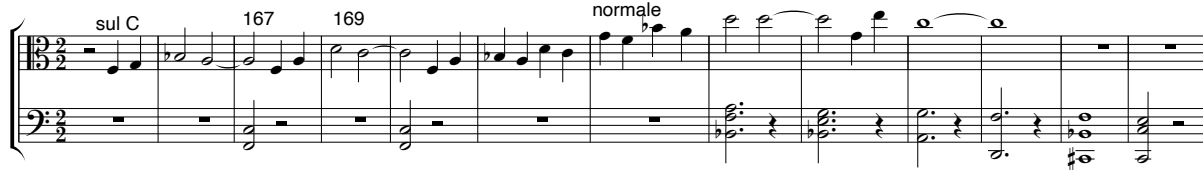
Measure	Chord
1	Cmi add9
2	Fmi6/C
3	Cmi add9
4	Fmi6/C
5	Db6
6	Db7
7	Db7(9#11)
8	Db7(9,13)

3.10 Theme Five

Solemn and majestic themes are often best served by slower tempos and longer note values. Williams' "Hymn To The Fallen" from *Saving Private Ryan* provided melodic inspiration for Theme Five. I felt that orchestration could add richness to the theme by assigning notes to the lower instrument registers and, in particular, the string family. The viola, known for its low register growl, seemed the ideal voice for this regal theme.

The violas are marked "sul C", indicating that they play the first five bars on the low C string. This not only contributes to a consistent tone, it has the player making interval leaps that may result in an audible slur or glissando which allows for greater expression. The remaining strings are also in their lower registers contributing to the rich tones starting this section (see Ex. 3.18 below).

Ex 3.18 Theme Five: Violas and Harmonic Support m.165-177



The tonic harmonization in the first six bars (m.165-171) allows the focus to remain on the melody. The downbeats of both m.167 and 169 are a reinforcement of the tonic triad, firmly establishing the theme in F major. The horns, lower brass, and timpani, provide grounding through root, fifth, and tenth support, adhering to common practices of assigning wider intervals to lower range chords.⁴⁷ The vision was to allow the melody to breathe without conspicuous reinforcement. Descending contrary motion in the cellos provide the only necessary support.

An orchestrator is always waiting for moments when a suspended fourth or second, a tritone substitution, or an unsuspecting dominant functioning substitution can change the colour of a chord. A single note change or addition in a supportive chord can often provide moments of interest for the engaged listener. Such changes are often very brief and subtle yet highly effective, creating a lift in an arrangement, especially upon the restatement of an idea. Some occur unintentionally while others are more purposeful. The restatement of Theme Five at m.178 (see Ex. 3.19 below) provides such a moment as the melody (Bb) is the sus4 of F. The C in the second violins, the fifth of F, makes the ear aware that the Bb is the note providing the suspension. The bass entrance reveals the intended resolution to an F. As the violins are the only instrument playing the C at a dynamic level below the rest of the section, the suspension is felt more than heard.

⁴⁷ I considered adding some colour to the chord preceding the downbeat but found it competed with the 4-3 movement of the melody in m.166 and the 6-5 movement in m.168.

Ex.3.19 4/6 Voicing m.177-179

The musical score for Ex.3.19 is in 4/6 time and features three staves: Melody, Harmony, and Bass. The key signature has one flat (B-flat). The melody begins with a whole note F4, followed by a half note G4, and then a whole note F4. The harmony consists of a whole note F4 and a half note G4. The bass line is a whole note F4. Above the staff, the chords are labeled F 4/6, F/C, and F.

The twelve bar phrase ends unresolved as both the melody and root end on the dominant (C). This was fortuitous as it serves both a repetition of the melody as well as providing a V chord in preparation for the next theme in C major.

3.11 Theme Six

Theme Six, a gentle waltz, is based on a simple three chord progression placed over an F pedal. This theme was intended to have a child-like quality similar to “Hedwig’s Theme” in the *Harry Potter* series and explores parallel harmony, pedal bass, and multiple textures through the use of varied articulation. An eight-bar introduction sets up an a, b, c, a’, a’’ form. The rhythmic dialogue between the celeste and the strings works well within one bar of the 3/4 time signature prior to the entrance of the melody (see Ex 3.20 below).

Ex 3.20 Rhythmic dialogue between Strings and Celeste m.190-193

The musical score for Ex 3.20 is in 3/4 time and features two staves: Strings and Celeste. The key signature has one flat (B-flat). The strings play a whole note F4, followed by a half note G4, and then a whole note F4. The celeste plays a whole note F4, followed by a half note G4, and then a whole note F4.

The moderate tempo of Theme Six is such that a sixteenth note Williams-like run from the strings and clarinet in the introduction to the theme nicely supported the progression. The pitches of the runs required careful consideration as parallel harmony dictates the use of non-diatonic scales. The intent was to start each octave run on the fifth, sixth, and flat sixth degree, thereby supporting the F, G triad/F, Bbm/F to F sequence (see Ex. 3.21 below).

Ex 3.21 Violin and Clarinet Unison Run m.194-197



The first bar of the violin and clarinet run in example 3.21 above (C Mixolydian over F pedal and D Dorian over F pedal) felt complete. Measures 194 and 195 started on the fifth of each chord (C and D respectively). The approach to the third run (m.196) starting on the fifth was abandoned for two reasons. First, because the beginning of each string run should rise in pitch. Second, and more importantly, because the run needed to end on the third of the chord (A of the F major) to support the F major phrase ending. Given the note A was the destination, an F Aeolian scale was the solution prior to the A resolution in the F chord.

For Theme Six, I departed from my usual practice of writing a melody followed by the development of harmonic support. In this case, I started with the harmonic foundation of the theme and constructed the melody from there. As a result, the C-B-Bb-F of the melody in the first four bars are all chord tones of the supporting harmony. The octave leap on the fifth degree in the first bar sets up an opportunity for a meandering descent back to the tonic in the fourth bar.

The rhythmic symmetry in the second and third bars allow for the colourful Bb on the downbeat of bar three. (see Ex. 3.22 below).

Ex 3.22 Theme Six Melody and Harmony m.198-201

In the second presentation of Theme Six at m.222, the basses provide a dual function rather than their customary role as root provider. Not only are they pedalling on the 5th of the chord (C), they are responsible for the 6th (D), the flat 6th (Db) and the 5th again in the fourth bar (see Ex. 3.23 below). This is playable on the instrument in 4th position but could be broken up between the section if intonation suffers.

Ex. 3.23 Bass Pedal (IVth Position) m.222

The third and final presentation of Theme Six features a solo french horn supported by staccato woodwinds, not unlike the “Dance of the Reed Flutes” in “The Nutcracker Suite” by Tchaikovsky, a composer from whom Williams repeatedly draws inspiration.

3.12 Theme Seven

It is often the case in Western music that the finalis of a melody ends on the tonic. It was originally my intention to follow that practice in writing a melody for this final theme. However,

I strayed from that practice as I wrote the arrangement and used more voices of the orchestra with every repetition.

Theme Seven's eight-bar melody is rhythmically simple and offers multiple harmonic treatments (see Ex 3.24 below). It proves a suitable hymn-like finish to the suite, given its repetitive nature.

Ex. 3.24 Theme Seven Melody m.238-245



There are three presentations of Theme Seven, starting with a solo clarinet accompanied by the harp. The obvious choice was to start each successive presentation with the addition of another section of the orchestra. In the end, this did not prove to be the best approach. The beginning of each new section sounded too abrupt and lacked the gradual intensity I was looking for, as well as a creative component. The solution was to start introducing new voices mid-phrase. The strings make a subtle unison entrance supporting the clarinet as early as the third bar (m.240), breaking out into a full section by phrase-end (m.245). A solo trumpet finishes the eight-bar phrase unresolved on the fifth degree, suggesting that things are going to continue to build.

The first four bars of the melody use only the tonic, fourth and fifth degrees of the scale. The second four bars use essentially the same pitches with the addition of some passing notes. The nice thing about a simple melody is that it allows room for more activity from the orchestra without feeling too busy.

Changing colours once again, the second presentation of Theme Seven (at m.246) hears the flutes doubling the clarinets an octave higher and the addition of a winding french horn line doubled by the cellos. Bass clarinet would have been the first choice for doubling the cellos, but in their absence, the horn is a welcome substitute.

Rather than start the tutti finish at the start of the third presentation of Theme Seven, I chose to call on all the brass to join halfway through the second phrase after being inspired by an inner Williams-like rising fourth horn line in measure 252. The trumpets playing the melody as they had eight bars earlier now had the support of the entire section.

The last presentation of Theme Seven, starting at m.254, provided a rare opportunity for a two octave descent from the basses. The simplicity of the melody allowed for diatonic harmonization, not unlike an organist harmonizing the last verse of a hymn by assigning one chord for every quarter note.

The lack of tonic resolution, both harmonically and melodically, in the last presentation of Theme Seven led to uncertainty as to how it would ultimately resolve. There were a number of ventured endings in an attempt to bring the suite to a triumphant conclusion, but all introduced new melodic material too late in the composition. The solution was to refrain from a melodic approach and employ the trumpets to do what the trumpets do best: a fanfare. This allowed for a nice bookend to the start of the suite. I replaced my first approach, a bVI, bVII, I harmonic progression, with a descending bVI (Phrygian) root movement allowing the trumpets to rise in simple triadic inversions to their resolution on the tonic triad.

CHAPTER FOUR

Conclusion

One of the challenges in creating this suite was writing themes that warranted hours of orchestration, drawing attention to another one of Williams' many strengths: memorable melodies. In another setting, many of the themes in this thesis could have been further developed into larger works. Restraint was needed to adhere to the focus of this study: the orchestration and support of a melody rather than the full development of one particular theme. As such, not all of Williams' orchestration techniques are incorporated into my suite.

Another challenge was creating a sense of flow between sections. Different key centres, tempos, and orchestration within a short work can be jarring to the listener. As a result, I spent much time creating the illusion the work was through-composed. An effort was made to achieve smooth transitions through careful key preparation, textural considerations, and the use of tempo changes, preparing the ear for new material.

Williams' orchestrations are complex. He approaches his craft on multiple levels simultaneously. Dynamics, texture placements, voicings, registers, melody harmonization, the interaction of melody and root movement, and the choice of instruments best suiting his theme: all these are careful decisions made to ensure that he achieves the intended reaction in the listener. Williams has a way of making his orchestrations transparent and accessible to the listener. Simple is good. The obvious is good.

Williams' work ethic is inspiring. His attention to detail is impressive. His modesty is appreciated. His music has terrific appeal to both the musician and the weekend

movie-goer. Williams creates accessible music that sticks in the memory of the listener, but upon closer inspection, relies on a wide variety of very advanced compositional techniques.

His address to the audience standing in front of the Boston Symphony at Tanglewood in the summer of 2019 (as quoted earlier in this paper) serves as a tribute to Williams himself. “These cultural institutions that we have in our country, like the Boston Symphony, represent a standard of excellence and superior art ...they are holding the culture up to be very high.”⁴⁸

Always gracious and quick to deflect a compliment, Williams’ gentle humility was on display in an interview during a master class at the University of Southern California: “Writing concert music, I think everyone would agree, is much harder.”⁴⁹ That is quite a statement coming from one of the most admired American composers of all time.

As with all study, one realizes how vast any subject can become once one starts to probe more deeply. It is my hope that having studied Williams’ approaches to orchestration, I will be able to incorporate many more of his orchestration techniques into my own writing going forward.

Thank you, Mr. Williams.

⁴⁸ “John Williams’ Film Night”, *YouTube*, Uploaded By Boston Pops, August 29, 2019, <https://www.youtube.com/watch?v=j7pCf38yLak&feature=youtu.be>

⁴⁹ “John Williams Interview - University of Southern California - Part 2”, *YouTube*, Uploaded by richirare, April 3, 2012, <https://youtu.be/BDzJJQTmq6A>

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Appendix: Score “Tribute to John Williams”

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ORCHESTRATION

1st and 2nd Flute	Timpani
1st and 2nd Clarinet	Percussion
1st and 2nd Oboe (Eng. Hn.)	Harp
1st and 2nd Bassoon	Piano/ Celeste
1, 2, 3, 4 French Horn	1, 2 Violin
1, 2, 3 Trumpet	Viola
1, 2, 3 Trombone	Cello
Tuba	Contrabass

Tribute To John Williams

Composed & Orchestrated by:
David Wilson

Fanfare
Triumphant (♩ = 72) **poco rit. a Tempo**

Flute I
Flute II
Oboe I
English Horn
Clarinet I
Clarinet II
Bassoon I
Bassoon II
Horn I
Horn II
Horn III
Horn IV
Trumpet I
Trumpet II
Trumpet III
Trombone I
Trombone II
Trombone III
Tuba
Timpani ^{G#, C}
Cymbals
Snare Drum
Harp
Piano
Violin I
Violin II
Viola
Violoncello
Contrabass

Triumphant (♩ = 72) **poco rit. a Tempo**

This bass part requires a low C extension. If not available, play all notes below low E up an octave.

1 2 3 4 5 6 7 8 9 10 11 12

Introduction

A Driving (♩ = 169)

FL. I
FL. II
Ob. I
Eng. Hn.
CL. I
CL. II
Bsn. I
Bsn. II
Hn. I
Hn. II
Hn. III
Hn. IV
Tpt. I
Tpt. II
Tpt. III
Tbn. I
Tbn. II
Tbn. III
Tbn.
Timp.
Glock.
Chim.
Hp.
Pno.
Vln. I
Vln. II
Vla.
Vcl.
Cb.

13 14 15 16 17 18 19 20

Theme One

B Soaring ($\text{♩} = 81$)

Fl. I

Fl. II

Ob.

Eng. Hn.

Cl. I

Cl. II

Bsn. I

Bsn. II

Hn. I

Hn. II

Hn. III

Hn. IV

Tpt. I

Tpt. II

Tpt. III

Tbn. I

Tbn. II

Tbn. III

Tba.

Timp.

Cym.

Chim.

Hp.

Pno.

B Soaring ($\text{♩} = 81$)

legato

Vln. I

Vln. II

Vla.

Vcl.

Cb.

21

22

23

24

To T. Bl.

Fl. I

Fl. II

Ob.

Eng. Hn.

Cl. I

Cl. II

Bsn. I

Bsn. II

Hrn. I

Hrn. II

Hrn. III

Hrn. IV

Tpt. I

Tpt. II

Tpt. III

Tbn. I

Tbn. II

Tbn. III

Tba.

Timp.

Cym.

Chim.

Hp.

Pno.

Vln. I

Vln. II

Vla.

Vcl.

Cb.

25

26

27

28

C

Fl. I
Fl. II
Ob. I
Eng. Hn.
Cl. I
Cl. II
Bsn. I
Bsn. II
Hn. I
Hn. II
Hn. III
Hn. IV
Tpt. I
Tpt. II
Tpt. III
Tbn. I
Tbn. II
Tbn. III
Tba.
Timp.
Cym.
Chim.
Hp.
Pno.
Vln. I
Vln. II
Vla.
Vc.
Cb.

Temple Blocks

C major *ff*

Colendo *ff*

29 30 31 32 33 34 35 36

40

Fl. I

Fl. II

Ob. I

Eng. Hn.

Cl. I

Cl. II

Bsn. I

Bsn. II

Hr. I

Hr. II

Hr. III

Hr. IV

Tpt. I

Tpt. II

Tpt. III

Tbn. I

Tbn. II

Tbn. III

Tba.

Timp.

T. Bl.

Chim.

Hp.

Pno.

Vln. I

Vln. II

Vla.

Vc.

Ch.

41

42

43

44

To Cym.

L.H.

Celesta

Arco

mf

Theme Two

E Playful

Fl. I
 Fl. II
 Ob. I
 Eng. Hn.
 Cl. I
 Cl. II
 Bsn. I
 Bsn. II
 Hn. I
 Hn. II
 Hn. III
 Hn. IV
 Tpt. I
 Tpt. II
 Tpt. III
 Tbn. I
 Tbn. II
 Tbn. III
 Tbn.
 Timp.
 T. Bl.
 Chm.
 Hrp.
 Pno.
 Vln. I
 Vln. II
 Vla.
 Vc.
 Cb.

45 46 47 48 49 50 51 52

F

Fl. I
Fl. II
Ob. I
Eng. Hn.
Cl. I
Cl. II
Bsn. I
Bsn. II
Hn. I
Hn. II
Hn. III
Hn. IV
Tpt. I
Tpt. II
Tpt. III
Tbn. I
Tbn. II
Tbn. III
Tbn.
Timp.
T. Bl.
Chim.
Hp.
Pno.
Vln. I
Vln. II
Vla.
Vc.
Cb.

53 54 55 56

Fl. I

Fl. II

Ob. I

Eng. Hrn.

Cl. I

Cl. II

Bsn. I

Bsn. II

Hrn. I

Hrn. II

Hrn. III

Hrn. IV

Tpt. I

Tpt. II

Tpt. III

Tbn. I

Tbn. II

Tbn. III

Tbn.

Timp.

T. Bl.

Chim.

Hp.

Pno.

Vln. I

Vln. II

Vla.

Vcl.

Cb.

57 58 59 60 61 62

To Ob.

G **H**

Fl. I *ff*

Fl. II *ff*

Ob. I *ff*

Eng. Hn. *ff* (Oboe)

Cl. I *ff*

Cl. II *ff*

Bsn. I *ff*

Bsn. II *ff*

Hn. I *ff*

Hn. II *ff*

Hn. III *ff*

Hn. IV *ff*

Tpt. I *ff* *Soli*

Tpt. II *ff* *Soli*

Tpt. III *ff* *Soli*

Tbn. I *ff*

Tbn. II *ff*

Tbn. III *ff*

Tbn. *ff*

Timp. *mf* *ff*

T. Bl. *Cymbals*

Chim. *Sleigh Bells* *To Glock.*

Bass Drum *ff*

Hp.

Pnc. *mf* *ff*

Vln. I *mf* *ff* **G** **H**

Vln. II *mf* *ff*

Vla. *mf* *ff*

Vc. *mf* *ff*

Cb. *mf* *ff*

63 64 65 66 67 68 69 70

Fl. I

Fl. II

Ob. I

Ob. II

Cl. I

Cl. II

Bsn. I

Bsn. II

Hr. I

Hr. II

Hr. III

Hr. IV

Tpt. I

Tpt. II

Tpt. III

Tbn. I

Tbn. II

Tbn. III

Tba.

Timp.

Cym.

Chim.

Hrp.

Pno.

Vln. I

Vln. II

Vla.

Vcl.

Ch.

To Eng. Hr.

(solo)

71 72 73 74 75

104

J

Fl. I
Fl. II
Ob. I
Eng. Hn.
Cl. I
Cl. II
Bsn. I
Bsn. II
Hn. I
Hn. II
Hn. III
Hn. IV
Tpt. I
Tpt. II
Tpt. III
Tbn. I
Tbn. II
Tbn. III
Tbn.
Timp.
Cym.
Glock.
Hp.
Pno.
Vln. I
Vln. II
Vla.
Vcl.
Cb.

mf
mf

84 85 86 87 88 89 90 91

K

Fl. I

Fl. II

Ob. I

Ob. II

Cl. I

Cl. II

Bsn. I

Bsn. II

Hr. I

Hr. II

Hr. III

Hr. IV

Tpt. I

Tpt. II

Tpt. III

Tbn. I

Tbn. II

Tbn. III

Tbn.

Timp.

(4) (8)

Cym.

Glock.

Hrp.

Pno.

K

Vln. I

Vln. II

Vla.

Vcl.

Ch.

Div.

f

div.

92 93 94 95 96 97 98 99

L **molto rit.** **M Scherzando (♩=114)** **Theme Four**

FL I *f* *p*

FL II *f* *p*

Ob. I *f* *p*

Ob. II *f* *p*

Cl. I *f* *p*

Cl. II *f* *p*

Bsn. I *f* *p*

Bsn. II *f* *p* *mf*

Hr. I *f* *p*

Hr. II *f* *p*

Hr. III *f* *p*

Hr. IV *f* *p*

Tpt. I

Tpt. II

Tpt. III

Tbn. I

Tbn. II

Tbn. III

Tbn. *f*

Timp. *f*

Cym.

Glock. *f*

Hp. *f* *mf*

Pno. *f* *p* **Piano** *mf* (no Ped)

L **molto rit.** **M Scherzando (♩=114)**

Vln. I *f* *mf*

Vln. II *f* *mf*

Vla. *f* *mf*

Vcl. *f* *mf*

Ch. *f* *mf* *Pizz.*

100 101 102 103 104 105 106 107

N

Fl. I
Fl. II
Ob. I
Ob. II
Cl. I
Cl. II
Bsn. I
Bsn. II
Hn. I
Hn. II
Hn. III
Hn. IV
Tpt. I
Tpt. II
Tpt. III
Tbn. I
Tbn. II
Tbn. III
Tbn.
Timp.
Cym.
Glock.
Hp.
Pno.
Cresc.
Vln. I
Vln. II
Vla.
Vc.
Cb.
arco
Pizz.
Pizz.
Pizz.

108 109 110 111 112 113 114 115

O P
 Fl. I
 Fl. II
 Ob. I
 Ob. II
 Cl. I
 Cl. II
 Bsn. I
 Bsn. II
 Hn. I
 Hn. II
 Hn. III
 Hn. IV
 Tpt. I
 Tpt. II
 Tpt. III
 Tbn. I
 Tbn. II
 Tbn. III
 Tbn.
 Timp.
 Cym.
 Glock.
 Hp.
 Pno.
 arco
 Vln. I
 Vln. II
 Vln.
 Vc.
 Cb.
 116 117 118 119 120 121 122 123 124 125 126 127

Musical score for measures 116-127. The score includes parts for woodwinds (Flutes, Oboes, Clarinets, Bassoons), brass (Horns, Trumpets, Trombones), percussion (Timpani, Cymbals, Glockenspiel), strings (Violins, Viola, Violoncello, Contrabass), and piano. The score is divided into two systems, O and P, with a double bar line between measures 122 and 123. The key signature is one flat (B-flat major or D minor). The tempo is marked 'mf' (mezzo-forte).

Q

Fl. I
Fl. II
Ob. I
Ob. II
Cl. I
Cl. II
Bsn. I
Bsn. II
Hn. I
Hn. II
Hn. III
Hn. IV
Tpt. I
Tpt. II
Tpt. III
Tbn. I
Tbn. II
Tbn. III
Tbn.
Timp.
Cym.
Glock.
Hp.
Pno.
Vln. I
Vln. II
Vla.
Vc.
Cb.

Arco
Pizz.
Arco (Div)
Arco

Tam-tam

128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143

R Misterioso

Fl. I
Fl. II
Ob. I
Ob. II
Cl. I
Cl. II
Bsn. I
Bsn. II
Hn. I
Hn. II
Hn. III
Hn. IV
Tpt. I
Tpt. II
Tpt. III
Tbn. I
Tbn. II
Tbn. III
Tbn.
Timp.
T.C.
Glock.
Hp.
Pno.

R Misterioso

Vln. I
Vln. II
Via.
Vc.
Cb.

144 145 146 147 148 149 150 151 152 153 154 155 156

S Transition Two **Theme Five**

Ominious $\text{♩} = 56$ **T** Majestic ($\text{♩} = 87$)

The score is divided into two main sections: **Ominious** (measures 157-164) and **T Majestic** (measures 165-172). The **Ominious** section is marked with a tempo of $\text{♩} = 56$ and features a somber, dark atmosphere with instruments like Flutes, Oboes, Clarinets, Bassoons, Horns, and Trombones playing sustained notes and low dynamics (mp, mf). The **T Majestic** section, marked with a tempo of $\text{♩} = 87$, introduces a more grand and heroic feel. It features a prominent melody in the Clarinet I and II, supported by the Horns and Trombones, with dynamic markings ranging from *f* to *pp*. The Piano part includes a section marked *Piano* (pp) in measures 161-164. The Violins and Violas also have parts, with the Violins marked *mp* and the Violas marked *mp* and *p*. The Cello and Double Bass parts are marked *mp* and *p*. The Tuba and Timpani parts are also present, with the Tuba marked *f* and the Timpani marked *f*. The Glockenspiel part is marked *pp* and *mp*. The Percussion part is marked *pp* and *mp*. The overall structure is a transition from a somber, ominous mood to a majestic, heroic one.

Measures: 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172

U

Fl. I
Fl. II
Ob. I
Ob. II
Cl. I
Cl. II
Bsn. I
Bsn. II
Hn. I
Hn. II
Hn. III
Hn. IV
Tpt. I
Tpt. II
Tpt. III
Tbn. I
Tbn. II
Tbn. III
Tba.
Timp.
T-t.
Glock.
Hp.
Pno.
Vln. I
Vln. II
Vla.
Vc.
Cb.

173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188

[illegible]

Fl. I X
 Fl. II
 Ob. I
 Eng. Hn.
 Cl. I
 Cl. II
 Bsn. I
 Bsn. II
 Hn. I
 Hn. II
 Hn. III
 Hn. IV
 Tpt. I
 Tpt. II
 Tpt. III
 Tbn. I
 Tbn. II
 Tbn. III
 Tbn.
 Timp.
 T.-t.
 Glock.
 Hp.
 Pno.
 Vln. I X
 Vln. II
 Vla.
 Vcl.
 Cb.

206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221

Y

Fl. I

Fl. II

Ob. I

Eng. Hn.

Cl. I

Cl. II

Bsn. I

Bsn. II

Hr. I

Hr. II

Hr. III

Hr. IV

Tpt. I

Tpt. II

Tpt. III

Tbn. I

Tbn. II

Tbn. III

Tbn.

Timp.

T.-t.

Glock.

Hp.

Pno.

Vln. I

Vln. II

Vla.

Vcl.

Ch.

Pizz

222 223 224 225 226 227 228 229

Z

Fl. I

Fl. II

Ob. I

Ob. II *[Oboc.]*

Cl. I

Cl. II

Bsn. I

Bsn. II

Hr. I

Hr. II

Hr. III

Hr. IV

Tpt. I

Tpt. II

Tpt. III

Tbn. I

Tbn. II

Tbn. III

Tbn.

Timp.

T.-t.

Glock.

Hp.

Pno.

Z

Vln. I

Vln. II *Div.*

Vla. *Div.*

Vc.

Ch.

230 231 232 233 234 235 236 237

Theme Seven

AA Maestoso (♩ = 70)

Fl. I

Fl. II

Ob. I

Ob. II

Cl. I

Cl. II

Bsn. I

Bsn. II

Hn. I

Hn. II

Hn. III

Hn. IV

Tpt. I

Tpt. II

Tpt. III

Tbn. I

Tbn. II

Tbn. III

Tba.

Timp.

T-t.

Glock.

Hp.

Pno.

Vln. I

Vln. II

Vla.

Vc.

Ch.

238

239

240

241

242

243

244

245

To B. D.

Div.

Arco

mf

mp

f

BB poco rit.

Fl. I
Fl. II
Ob. I
Ob. II
Cl. I
Cl. II
Bsn. I
Bsn. II
Hn. I
Hn. II
Hn. III
Hn. IV
Tpt. I
Tpt. II
Tpt. III
Tbn. I
Tbn. II
Tbn. III
Tbn.
Timp.
T-t.
Glock.
Hp.
Pno.
Vln. I
Vln. II
Vla.
Vc.
Cb.

246 247 248 249 250 251 252 253

CC a Tempo DD

Fl. I

Fl. II

Ob. I

Eng. Hrn. English Horn

Cl. I

Cl. II

Bsn. I

Bsn. II

Hn. I

Hn. II

Hn. III

Hn. IV

Tpt. I

Tpt. II

Tpt. III

Tbn. I

Tbn. II

Tbn. III

Tbn.

Timp.

Cym.

Glock.

Hp.

Pno.

Piano

Vln. I

Vln. II

Vla.

Vcl.

Cb.

254 255 256 257 258 259 260 261 262 263

Bass Drum