Morphology of the Score: The Organisation of Music in the Films of Michael Giacchino and Pixar Animation Studios

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A thesis submitted in partial fulfilment
of the requirements for the degree of
Doctor of Philosophy

City, University of London
School of Arts and Social Sciences
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October 2020

ABSTRACT

Film music analyses routinely focus on unique aspects of individual films rather than the scoring strategies common to many. Consequently, film music has been described as 'anti-formalistic' with 'no formal expectations' suggesting that each score is formally unique. However, it is widely accepted that Hollywood films are generally structured around a small number of common narrative frameworks. This thesis proposes an original method for graphically realising the temporal placement of film music's component parts as they relate to an underlying narrative structure, allowing the music to be discussed at the level of the entire film without abstracting it from its narrative context. The Film Music Organisation method introduced in this thesis uses transferrable terminologies and proportional values to enable and encourage a corpus analysis of multiple films and their soundtracks. The research addresses two key questions: 1) How does a film's musical form relate to its narrative form? and 2) Are there trends in the organisation of film music that occur in multiple films?

Using a selection of short and feature-length films by Pixar Animation Studios, with a focus on the music of Michael Giacchino, I demonstrate how through occurrence, variation, absence and reoccurrence at several levels, film music can be organised by a common narrative strategy. The study introduces several new terminologies and methods that contribute to the ongoing cross-fertilisation of screen music studies and narratology.

ACKNOWLEDGEMENTS

I am grateful to my encouraging parents and the wonderful friends that surround me.

Special thanks to Martin Batchelar, Vasco Hexel, and Lara Acott for their friendship and support, for riffing germinal ideas into existence during the early stages of this project, and for encouraging me to go on this journey. To Zomo Fisher for sharing his Excel wisdom and Sam Pegg for being my personal Sibelius helpline.

To the City PhD Newbies: Soosan Lolavar, Gabby Messeder, Gilberto Agostinho, and (now Dr) Christine Dysers. What a team! I cannot wait to cheer you all over the finish line as you have cheered me.

Huge thanks to my girlfriend, Jennifer Rowekamp. We met at NYU's Music and the Moving Image conference in 2018 and, in this small window of time (and by unbelievable coincidence given the topic of this research), she has gone on to become Associate Music Editor at Pixar Animation Studios. For me, she has gone above and beyond, assuming the roles of proofreader, transcription-checker, idea-challenger, and morale-booster. Pun firmly in place, Jenny has been instrumental in the evolution and completion of this project and I am not sure I will ever tire of being grateful.

And lastly, to my supervisors Professor Miguel Mera and Dr Shay Loya for their invaluable advice, discussions, encouragement, and seemingly unwavering faith in me throughout.

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INTRODUCTION

If movies are like lightning, then the musical score, for me, is like thunder.

– Steven Spielberg

1.1 Composer as Storyteller

Hollywood composers often cite the film's 'story' as a key source of inspiration for their scores. Hans Zimmer boldly claims that he can 'tell you everything you need to know [about film scoring] in one word: story'[1] and Michael Giacchino proposes that 'as a film composer, your job is not to write music, […] your job is to tell a story'.[2] Giacchino asserts that 'music is another form of storytelling' and speaks of veteran composer John Williams as a great storyteller, saying that Williams' music is 'a reflection of the film's story.'[3] Despite these claims, the methods by which composers might reflect a film's story remain unclear and unexplained beyond anecdotal evidence and theoretically vague assertions made in interviews.

Ronald Sadoff explains that, as important as the music itself, music placement is 'a key factor in determining how the music functions and editorialises the story'[4] and Richard Davis' popular textbook *Complete Guide to Film Scoring* stresses the importance of effective music placement, suggesting that 'if the music comes in and out in the wrong places, it can ruin a film'.[5] Nevertheless, Davis quickly dismisses the practice of spotting, i.e., the process of determining how and when music should interact with the film, as merely 'a skill that comes with experience' – advice he repeats multiple times alongside the sciolistic counsel that 'surety [that a scene requires music] can come in the form of a gut

[1] Zimmer, H., 'Hans Zimmer Teaches Film Scoring' (2017) at https://www.masterclass.com/classes/hans-zimmer-teaches-film-scoring (Accessed 22nd March, 2017)

[2] Burlingame, J., 'Michael Giacchino: Driven by Stories,' at http://variety.com/2010/digital/news/michael-giacchino-driven-by-stories-1118025204/ (October, 2010) (Accessed 28th October, 2015)

[3] Giacchino, M., '*Super 8* Score: Behind the Scenes with Michael Giacchino, J.J. Abrams and Stephen Spielberg,' (2011) at https://www.youtube.com/watch?v=TvWywyLDnNs&t=137s (Accessed 27th March, 2017)

[4] Sadoff, R. H., 'The Role of the Music Editor and the "Temp Track" as Blueprint for the Score,' in *Popular Music*: Vol. 25: No. 2 (Cambridge University Press, 2006), p.169.

[5] Davis, R., *Complete Guide to Film Scoring* (Boston, MA: Berklee Press, 1999), p.89.

feeling' – and offers no practical examples to demonstrate how the patterning of music reflects or affects a film's story.[6] Based on Aristotle's popular axiom that a story must comprise a beginning, a middle, and an end, one can safely assume that Sadoff is correct in stating that music's narrative potential lies in its formal design. It is therefore surprising that there is such a paucity of research and practical advice on the spotting process.

In a 1945 essay, Gail Kubik posed a question the answers to which might best expose how composers 'tell a story':

> Can the composer discover the architectural form which the film itself takes and […] can he then translate his reactions to the film's structure into sounds which […] supplement the dramatic impact of the film itself?[7]

Kubik is chiefly concerned with the relationship between the formal properties of the film and those of the music. Yet, despite being described as one of the most crucial tasks of a film composer's craft, there are few empirical studies on the apportioning of cues, themes, repetitions, and transformations across entire films, or to paraphrase Kubik, how a composer translates the architectural form of the film into music.

The scarcity of insight into the organisation of film music from practitioners and scholars alike raises a host of questions: *Is spotting an innate skill that truly relies on gut feelings or experience? Are there rules governing the placement and attributes of film music? At what level does film music 'tell a story'? Is it through the patterning of cues, the distribution of connected themes, the tonal design of the score, the texture of the orchestration, or a combination of these attributes and more that qualifies music as a contributor to filmic storytelling? And, ultimately, can film music 'tell a story' at all?*

1.2 Purpose and Scope

The purpose of this thesis is to investigate the organisation of film music and its correlation

[6] Davis, R., *Complete Guide to Film Scoring* (Boston, MA: Berklee Press, 1999), pp.89–90.

[7] Kubik, G., 'Music in Documentary Films,' in *Music Publishers' Journal*, Vol 3: No. 5 (September–October 1945), p.13., repr. in *The Hollywood Film Music Reader*, Cooke, M. (ed.) (Oxford and New York: Oxford University Press, 2010), p150. Quoted in Schneller, T., 'Sweet Fulfillment: Allusion and Teleological Genesis in John Williams's *Close Encounters of the Third Kind*,' in *The Musical Quarterly* (Oxford University Press, 2014), pp.98–131.

with narrative form at the level of the entire film to determine how a score practically contributes to a cinematic discourse. Accepting that many films are shaped around comparable narrative frameworks – 'The very substructure of film construction,' writes Robert Kolker in *Film, Form, and Culture*, is 'largely unchanged, or changed so subtly that [it is] hardly noticeable.'[8] – and assuming narrative form as the central principle guiding the formal organisation of the score, this thesis proposes an original method for comparing multiple texts, asking of each: *how does the organisation of film music relate to that of a filmic narrative?*

The proposed approach – hereafter referred to as the *Film Music Organisation method* – is designed to support and supplement written analyses. The method tracks musical data along a film's timeline, which is partitioned to show the proportional durations of acts and sequences in which the music operates. Graphically representing a film score in this way illustrates how the arrangement, duration, and repetition of individual music cues and components map onto and relate to a film's narrative structure. Fixing the length of the diagrams' timelines (made possible by considering durations as percentages of a whole) allows for a corpus analysis, comparing data like for like in order to draw conclusions about trends and scoring tactics across multiple texts. Current methods of large-scale film music analysis are not designed for, nor do they invite, the possibility of comparative analysis. The Film Music Organisation method generates a diagrammatic morphology of individual film scores, i.e., the depiction of a film score's form according to its component parts and the relationship of these components to each other and to the plot as a whole.

This research is both deductive and inductive: the methodology is designed based on the assumption that film music's storytelling capabilities are fundamentally determined through its form; the common trends observed in the select case studies then provide partial evidence for a broader phenomenon that exists beyond the context of a single film.

In order to select a manageable dataset for consideration, this thesis focuses primarily on the relationship between the musical scores of Michael Giacchino and the films of Pixar

[8] Kolker, R. P., *Film, Form, and Culture*, 4th edn. (Oxon: Routledge, 2016), p.45.

Animation Studios. The seven feature films of the Pixar–Giacchino collaboration[9] provide a corpus for analysis that focuses the research question, asking more specifically: *how does the organisation of Michael Giacchino's music relate to the Pixar narrative?* By narrowing the scope of the initial question, this thesis develops a restricted, nascent theory of the formal organisation of film music. It is hoped that this methodology will enable the work to be expanded upon using other scores by Giacchino, other films by Pixar, and films by other filmmaker–composer teams to determine whether the formal properties and scoring strategies observed in the Pixar–Giacchino oeuvre can be found in film music more broadly.

This thesis also examines music organisation in a selection of Pixar short films from the years 2009–2018.[10] Short films, with their shorter durations, concise narratives, and leaner scores, facilitate simplified precursory explanations ahead of the lengthier and more nuanced feature score analyses. Comparing short film scores against feature-length film scores offers insight into the principles of efficient and effective narrative film music and reveals scoring strategies common to films of dramatically different duration. While the corpus examined in this thesis focuses on a specific type of film and film music (melodic, thematic scores for standardised Hollywood films), the principles and methods of analysis and comparative analysis may provide useful tools for the study of a range of media as well as further intertextual analytical enquiry.

The title of this thesis is a nod to Vladimir Propp's *Morphology of the Folktale* in which Propp likens his understanding of the term 'morphology' to its application in botany: 'the study of the components of a plant; their mutual relationship, and the relation of the parts of the plant to the whole'.[11] By comparing the component parts of 100 Russian fairy tale plots, Propp searches for an abstract description of the folktale according to the relationship of these components to each other and to the whole. This thesis take a similar approach. The Film Music Organisation diagram created for each film reveals the morphology of the

[9] *The Incredibles* (Brad Bird, 2004), *Ratatouille* (Brad Bird, 2007), *Up* (Pete Docter, 2009), *Cars 2* (John Lasseter, 2011), *Inside Out* (Pete Docter, 2015), *Coco* (Lee Unkrich, 2017), and *Incredibles 2* (Brad Bird, 2018).

[10] The collection focusses on *Partly Cloudy* (Peter Sohn, 2009), *The Blue Umbrella* (Saschka Unseld, 2013), *Lava* (James Ford Murphy, 2014), *Sanjay's Super Team* (Sanjay Patel, 2015), *Piper* (Alan Barillaro, 2016), *Lou* (Dave Mullins, 2017), and *Bao* (Domee Shi, 2018).

[11] Propp, V., *Morphology of the Folktale*, trans. Scott, L. (Austin: University of Texas Press, 1968), p.1.

individual score, i.e., a description of the film score according to its component parts and the relationship of these components to each other and to the whole. By comparing the component parts of the music in seven Pixar short films and seven Pixar–Giacchino feature films, I gradually build an abstract description of the Pixar–Giacchino film score based on structural trends in the works.

1.3 Pixar Animation Studios and Michael Giacchino

The decision to focus this project on the music of Michael Giacchino and the films of Pixar Animation Studios is based on the following reasons:

1. *Both parties speak openly and at length about the importance of 'story'.* While Giacchino remains reluctant to provide intimate details about how he commits music to picture in order to 'tell a story', the team at Pixar are refreshingly candid about their approaches to storytelling, releasing several online learning resources, interviews with employees, and academic papers and presentations on the subject.[12] This rich reserve of primary sources supports many of the observations developed throughout this thesis. There are also numerous independent academic papers that scrutinise the practices and products of Pixar from a wide set of perspectives from gender studies and education to cultural studies and business.[13]
2. *Giacchino's music is coherent and comprehensible.* His scores are melodic, musical, and largely orchestral so there is little confusion in identifying his music from the sound design, as can be the case with some modern soundtracks.[14] For this reason, transcribing and tabulating musical events is a relatively straightforward and unambiguous process.
3. *The structures of Pixar films are clear and consistent.* The films are designed to be understood and enjoyed by audiences of all ages and, as such, must be easily consumed. With few exceptions, the act and sequence boundaries are easily

[12] Many of Pixar's academic publications can be found at http://graphics.pixar.com/library/index.html (Accessed 23rd August, 2020)

[13] On 10th December 2016, I attended the 30 Years of Pixar Animation Studios conference at King's College London, at which academic papers on a number of subjects were delivered.

[14] Giacchino often augments his orchestras to include acoustic instruments from other musical traditions, e.g., 'French' accordion for *Ratatouille* or Mexican guitarróns for *Coco*.

identified and tabulated. The relative similarities between the films simplifies the comparative analyses and allows for common terminology to be used throughout, though I make a case that the formal observations made of Pixar films in this thesis are largely transferrable and can be applied to films outside of this limited corpus.

Access to such a large corpus of feature-length and short films by the same studio-composer filmmaking team provides a rare opportunity to make connections and comparisons between texts. Other Pixarian composers under consideration for this project include Randy Newman and Mychael Danna. Newman has written melodic, thematic scores for eight Pixar films (one more than Giacchino) including multiple sequels. An examination of the Pixar–Newman oeuvre would be fruitful.[15] However, he is yet to score a Pixar short film. Therefore, the Pixar–Giacchino oeuvre has a more varied range of films to investigate. Danna is another melodic composer who has scored two Pixar feature films with his brother Jeff Danna (*The Good Dinosaur* [Peter Sohn, 2015] and *Onward* [Dan Scanlon, 2020]) and one short film (*Sanjay's Super Team*) but, as he has scored so few by comparison, there is not enough material from which to draw sufficient conclusions.

1.3.1 Pixar Animation Studios

Pixar Animation Studios, commonly referred to as 'Pixar', is a multi-award-winning, critically acclaimed computer animation film studio based in Emeryville, CA. The studio stands in high regard in the industry in part due to its distinct cinematic voice.[16] Released in 1986, Pixar's first character-based short film, *Luxo Jr.* (John Lasseter, 1986), was regarded as a breakthrough in the computer animation medium and *Toy Story* (John Lasseter, 1995), released nine years later, was the first entirely computer-animated feature-length film. To date, Pixar has released 22 feature films (with another scheduled for release in December 2020 and more in production), each of which has advanced the discipline of computer animation with design innovations and new technologies. The company has also produced

[15] Not to be confused with Pixar scores composed by Randy's cousin, Thomas Newman.

[16] Seth Rogen describes *Sausage Party* (2016) as 'an R-rated Pixar movie' and Judith Hofmann discusses why Pixar films may be regarded in a genre of their own in Hofmann, J., 'Pixar films, popular culture, and language teaching: The potential of animated films for Teaching English as a Foreign Language,' in *Global Studies of Childhood*, Vol. 8: Iss. 3 (2018), pp.267–80.

numerous original and feature-related short films. Short films offer the company 'the freedom to experiment and develop new ways to tell stories and new technologies' in a lower risk, less time-consuming, and less costly way than their feature films.[17] They also act as a training ground for new talent by allowing in-house personnel to take on different filmmaking roles. Each effort provides the company with valuable research and creative outcomes.

One of the principal reasons for the company's success, former Chief Creative Officer John Lasseter speculates, is the emphasis the team puts on 'telling great stories' rather than any of their considerable aesthetic or technological achievements.[18] Designed to be enjoyed by all ages, these films are painstakingly worked and reworked to ensure coherent storylines are delivered. In-house screenings and public test screenings are held regularly throughout production and test audiences made up of adults and children alike provide feedback on the comprehensibility of the films.

Likewise, the music of Pixar films is vibrant and accessible. While innovative in many respects, Pixar strives to preserve certain traditional practices in the music that accompanies their films. Brothers Mychael and Jeff Danna, collaborating to score their first Pixar film in 2015, tell of their first meeting with the team and the expectations of a Pixar soundtrack:

> There was a meeting right at the beginning of the process with [John] Lasseter and we talked about themes. And [he said,] 'You know, we want themes in our films,' and, 'Why is film music different than it was twenty years ago?' and, 'Why is the emphasis off of themes and there's more textural writing?' And we talked about various reasons for that and he said, 'Well, that's not what we do here. *We make beautiful melodies and that's what we have to have*.'[19]

They left that initial meeting with the intention of figuring out what the 'beautiful melodies' needed to be and 'where they needed to go *because it's a story*'.[20] This quote offers a rare albeit fleeting insight into the practical methods by which composers approach storytelling

[17] https://www.pixar.com/theatrical-shorts (Accessed 29th August, 2019)

[18] Notice the frequency of the word 'story' in Goodman, S., 'Pixar's John Lasseter Answers Your Questions' at https://artsbeat.blogs.nytimes.com/2011/11/01/pixars-john-lasseter-answers-your-questions/?_r=0 (Accessed 6th March, 2017)

[19] 'The Music of The Good Dinosaur with Composers Mychael and Jeff Danna' at http://soundworkscollection.com/videos/the-music-of-the-good-dinosaur-with-composers-mychael-and-jeff-danna (Accessed 10th October, 2016) (emphasis added)

[20] Mychael Danna, ibid. (emphasis added)

with their music. It is clear that the Danna brothers consider thematic placement to be a key element to musical storytelling. This revelation raises more questions than it answers, but confirms the hypothesis of this project: music placement – specifically thematic organisation – is central to understanding music as a storytelling device.

Pixar works with a remarkably small selection of composers, with their 22 films scored by only six composers[21] who write demonstrably melodic, largely orchestral music.[22] This thesis focuses on the work of a composer who has collaborated on more projects with the animation studio than any other, Michael Giacchino.

1.3.2 Michael Giacchino

Michael Giacchino is an award-winning film composer and regular collaborator with Pixar, having worked on seven feature films and five original short films with the company to date, as well as four feature-related short films, two television specials, and four video games. Giacchino scored his first feature film with Pixar in 2004, working on *The Incredibles* with director Brad Bird. He has since composed the music for a number of blockbuster film franchises, including *Star Trek*, *Star Wars*, *Planet of the Apes*, *Mission: Impossible*, *Jurassic Park*, and the Marvel Cinematic Universe, as well as a number of high-profile standalone films.

As a child, Giacchino made Super-8 and Regular-8 movies and, as a student, majored in film production at the School of Visual Arts in New York.[23] These formative years have afforded him a more comprehensive filmmaking education than many composers in the industry today, many of whom have entered with purely musical backgrounds. Recently and perhaps unsurprisingly, Giacchino has turned his hand to directing, taking the helm on animated short film *Monster Challenge* (Michael Giacchino, 2018) and an animated episode of television show *Star Trek: Short Treks* (Michael Giacchino, 2019). 'He understands character and structure,' says director and regular collaborator J.J. Abrams. In

[21] The Pixar composer roster currently consists of Randy Newman, Thomas Newman, Michael Giacchino, Patrick Doyle, and Mychael and Jeff Danna. The composing team of Trent Reznor and Atticus Ross have signed on for *Soul* (Pete Docter, 2020) with additional jazz compositions by Jon Batiste.

[22] Thomas Newman's 'metaphysical style' (named and characterised in Reyland, 2015) is distinctive for the prominence of digitally manipulated timbres and textures. Mychael Danna's music is recognised for his blending of non-western traditions and instruments with orchestral and electronic timbres.

[23] Super-8 and Regular-8 are film formats.

fact, Abrams often gives Giacchino scripts to read in advance to 'get his comments and notes [… and also] just to get his reaction.'[24] Director Brad Bird also speaks highly of Giacchino's storytelling sensibilities, considering Giacchino's music to be…

> …another character or another actor on the film because [Giacchino is] interpreting the story and he has a very good storytelling sense, so his music always has a storytelling aspect to it. […] it's a dance and he is a very good dancer. […] I really look at him like I look at a lot of my collaborators: as co-storytellers.[25]

Giacchino's advice to young film composers is, seemingly counterintuitively, not to study music theory and harmony, but to 'learn editing, directing, [and] lighting so you can communicate in the language of film with the people you will be working with'[26] and suggests that composers and directors should communicate 'through story and emotion'.[27] When speaking of his work, Giacchino rarely uses involved musical vernacular, favouring non-technical terms such as 'story' and 'emotion' to describe his compositions and process.

While his musical palette is largely orchestral, Giacchino is a composer who draws on several diverse musical settings in his work with Pixar. In an article on the music of *Up*, Bradley Spiers discusses the musical hybridity of Giacchino's Pixar scores, explaining that the music creates a 'binary system of signification, with the leitmotifs introversively signifying themes and characters within the film's diegesis, while the diverse musical settings extroversively signify sights and sounds in the wider world', allowing 'a single melodic unit [to] be set in a variety of musical environments, each of which provides the audience with valuable narration.'[28] Spiers coins the result of this hybrid scoring practice the *pastiche score*: a scoring style that allows diverse musical traditions and genres to

[24] Burlingame, J., 'Michael Giacchino: Driven by stories' at http://variety.com/2010/digital/news/michael-giacchino-driven-by-stories-1118025204/ (October, 2010) (Accessed 28th October, 2015)

[25] Brad Bird, 'Incredibles 2 Scoring Session B-Roll & Michael Giacchino & Brad Bird Interview,' at https://www.youtube.com/watch?v=WQkfwsuzAOs (Accessed 11th June, 2018)

[26] Giacchino answering 'What sort of training do you think one needs in order to scoring [sic] films? How reliant are you on common practice composition standards in your writing and how important do you think these are in educating contemporary composers? What advice would you give aspiring film composers?' at https://www.reddit.com/r/IAmA/comments/7gw7or/im_michael_giacchino_composer_for_lost_star_trek/ (Accessed 11th February, 2018)

[27] Giacchino answering 'How do you recommend talking to composers?', ibid.

[28] Spiers, B., '"Adventure is out there!": Pastiche and Postmodernism in the Music of *Up*,' in *Nota Bene: Canadian Undergraduate Journal of Musicology*, Vol. 5: Iss. 1, Art. 7 (2012), p.114–5.

function fluidly while motivic information provides unity and continuity to a score that may appear to be a stylistic mishmash. Giacchino's pastiche scoring style in Pixar films may be seen (or heard) as a development of Carl Stalling's earlier composite scoring approach for the *Looney Tunes* cartoons introduced in the early 1930s, which incorporated an expansive and diverse musical repertoire with original material on a cue-by-cue basis. Stalling's music, like the visuals and dialogue it accompanied, was infused with intertextual cultural references. The use of recurring storylines and characters in the Warner Bros. cartoons 'did not lead Stalling to develop specific themes' but rather move from one gag to the next as the story did.[29] In this way, he was unable to design 'an encompassing score with a clearly defined exposition, climax, and conclusion.'[30] One could argue that, without the development of themes or clearly-defined acts, Stalling's reactive approach, however effective and contextually appropriate, could not be described as 'telling a story'. The pastiche scoring style combines the composite scoring approach of early cartoon music (a short-range strategy) with the continuity-providing leitmotif technique prominent in opera and Golden Era Hollywood film scoring (a long-range strategy).

Pixar and Giacchino's collaborative approach is unique in many ways. Having developed a close friendship with many of the Pixar directors outside of the work environment, Giacchino is privy to pre-production information to which not all composers have access. For example, *Inside Out* director Pete Docter first pitched the film's concept to Giacchino while the pair were queueing at Disneyland long before production had started.[31] As such, Giacchino is able to have a greater input during the early stages of production than composers might usually be granted. Music editor Stephen Davis says that 'Michael tends to discuss the cue concepts outside of the realm of a traditional spotting session'[32] and Giacchino admits that he generally does not listen to the temporary music placed by music editors until after he has written his own – and then it is merely to check for sync points that he may have overlooked.[33] While most composers are expected to take influence from the

[29] Goldmark, D., *Tunes for Toons: Music and the Hollywood Cartoon* (University of California Press, 2005), p.38.
[30] Ibid., p.39.
[31] Giacchino, M., 'Academy Conversations: Inside Out,' (6th June 2015) at https://www.youtube.com/watch?v=nv15xrVTDpc (Accessed 12th October, 2016)
[32] Stephen M. Davis in correspondence with the author on 10th May, 2016. Transcript in Appendix IV.
[33] Spoken at a masterclass at the Royal Albert Hall in London on 18th October, 2017.

so-called temp track, Giacchino treats it as a tool for the benefit of animators, editors, and test audiences.[34] Clearly temp scores do not limit or influence his creative output in the way that it might for less established composers.

With such a solid foundation in filmmaking and storytelling and a vast catalogue of short and feature-length film scores with a variety of directors and franchises to his name, Michael Giacchino is the logical choice for an investigation of narrative film scoring. The analyses of his work presented in the following chapters, which pertain almost exclusively to his collaborations with Pixar Animation Studios, could in future studies be compared with Giacchino's extensive non-Pixar repertoire in order to further refine a theory of the composer's music organisation strategy.

Due to the synergistic nature of film production, it is not always possible to attribute specific aspects of the work to certain individuals. Therefore, I will often use the name of the composer as a synecdoche for the entire creative team responsible for the music.[35] Likewise, various filmmakers' names may be attributed to specific elements of the films in discussion that should more reasonably be credited to a team of filmmakers.

1.4 Chapter Outlines

The purpose of this thesis is to address the formal organisation of film scores and their relationship with narrative structures. Firstly, I build an argument in favour of large-scale film music analysis that takes into account the score as a whole before introducing a new method that facilitates the large-scale analysis of individual and multiple films. The second part presents the results of several case studies and comparisons of short and feature-length film scores from the Pixar corpus that progressively constructs and refines a provisional theory of film music organisation.

[34] The 'temp track' is the name of the temporary soundtrack created by music editors during production ahead of the composer's involvement. These temporary scores are designed to provide the filmmaking team and test audiences an idea of the type of music that will eventually accompany the film. They also give composers an idea of the director's vision for the score.

[35] This team may include the music department (e.g., composers, music editors, orchestrators, musicians, producers, engineers, etc.) and other personnel involved in production (directors, producers, editors, sound designers, dubbing engineers, etc.), all of whom may influence the final soundtrack.

Chapter 2 challenges the assumption that film music is conceived and perceived without formal obligations or expectations. I argue that, as scores are shaped around predictable narrative structures, film music, by sheer concomitance, comes with a set of preconceived formal expectations. The chapter makes a case for the reading of scores as a whole, inclusive of seemingly unimportant cues and the gulfs of silence that separate them; an appreciation of the whole gives context to analyses that localised readings cannot. I offer revisions and additions to Claudia Gorbman's definitions of soundtrack silence and include the concept of *thematic silence*: the sonic space between recurrences of a theme. The significance of thematic silence as a structuring tool is highlighted and expanded upon in later chapters.

Ahead of the methodology, this chapter provides a brief review of the corpus analysis method and critiques several pre-existing methods for graphically representing narrative form, the coordination of music and moving image, and other film-spanning elements. Significantly, I highlight how several of the models are unsuitable for large-scale film music analysis and draw attention to the fact that there are no pre-existing methods appropriate for a corpus analysis of film scores.

The Film Music Organisation (FMO) method introduced in Chapter 3 is a flexible model for graphically representing the structure of a film score, allowing music to be considered in its filmic context and events within the plot and soundtrack to be foregrounded and perceived within a single, relatively simple diagram. In this chapter, I explain how these diagrams are constructed, designed to be read and interpreted, and how they might be used to make comparisons across multiple films.

Influenced by the work of comparative mythologists such as Joseph Campbell and Christopher Vogler, a new, eight-sequence breakdown of 'the Pixar narrative' is presented in this chapter. It offers a practical solution to film segmentation that, though tailored to a narrow corpus, can be applied to films outside of the Pixar canon with little or no adaptation. I also provide a solution to the notation of melodic film music themes that relies on the vertical alignment of notes to demonstrate sameness and variation simultaneously, allowing the reader to immediately appreciate the origin and variation of each iteration of a motif. This customised notation method is intended to accompany the FMO diagrams so

that transcriptions may be located in the context of the film and score. I also explain David Zinn's 'Numerical System of Melodic Notation', which I adopt for the notation of ostinatos in Chapter 6. Zinn's method provides a way of transcribing frequently modulated film music ostinatos without committing them to a specific key.

The purpose of Chapter 4 is to demonstrate the application of the FMO method using the succinct scores of short films. Applying the method to a selection of Pixar short film scores (several of which are composed by Michael Giacchino), I demonstrate that, through a combination of occurrence, variation, absence, and recurrence, the melodic themes of short film scores are generally arranged in neat, narratively informed, four-part structures: a form I refer to as *quadripartite ternary-act form*. Scores express clear ternary forms that synchronise with the films' three narrative acts while also displaying a musically bisected Act 2. An important discovery of this chapter is the significant role that *thematic silence* plays in the formation of a film score.

Chapter 5 applies the findings of the previous chapter to seven Pixar feature films scored by Michael Giacchino to demonstrate how, despite their lengthier and more complex construction, feature scores share a similar four-part form to those of short films. By revealing similarities between the two narrative formats, I strengthen the case not only for the inclusion of short films in screen music studies, but more broadly for narrative-informed film music analysis.

In the second part of the chapter, I proportionally equalise and compare the individual acts of *Inside Out*, *Coco*, and *Ratatouille* to deliver more nuanced observations of the relationship between the positioning of melodic themes and plot events. This study exposes Giacchino's strategic approach to the coordination of themes and scenes.

Chapter 6 focuses on the organisation of music cues in the seven Pixar–Giacchino feature films, examining the relationship between the patterning of non-diegetic music, diegetic music, musical silence, and the succession of events in the narrative. The chapter reveals that Giacchino regularly populates the same underlying narrative sequences and events with music, while consistently depriving others.

Many of these instances of musical deprivation coincide with other forms of deprivation in the story and visuals: an indication of a coordinated approach to storytelling from all departments.

The chapter also offers a new perspective on the morphology of a film score by demonstrating how music saturation, i.e., the ratio of music and musical silence in each part of the film, contributes to the overall shape of the score. These findings validate several of the sequence subdivisions outlined in Chapter 3 by revealing distinctive saturation qualities in each passage of the film.

2

TOWARDS AN UNDERSTANDING OF FILM MUSIC ORGANISATION

The story is everything and everything else should work in concert with that.

– George Lucas

2.1 Analysing Film Music

2.1.1 Film Music and Narrative Form

Until recently, there has been a paucity of research on the large-scale organisation of film music. The few studies that have emerged have tended to focus on tonality: an area of which scholars have long been dismissive and yet from which fascinating theories have evolved. Film-spanning musical strategies like these are readily repudiated for a number of reasons, including questions of authorial intent, diluted auteurship, audience perception, or the seeming lack of cohesion in a typical film score. It is possible that the scarcity of engagement with the subject is guided by assumptions that there are simply no principles governing music placement in film – that music is applied at the whim of the filmmakers without precedent – or that the organisation of film music is dictated by superficial or ephemeral onscreen influences. Indeed, Robynn Stilwell claims that film music is 'perhaps the only predominantly instrumental musical genre which comes with no formal expectations'[36] and Theodor Adorno and Hanns Eisler consider 'good motion-picture music' to be 'fundamentally anti-formalistic'.[37] Assertions like this imply that each score is to be considered wholly unique, free of meaningful patterns or syntagmatic design.

It is easy to understand why these claims are made. Film music is generally deployed intermittently with cues varying in duration, diegetic level, style, and origin (whether originally composed or pre-existing) – often all within the same film. Composers are commonly asked to emulate pre-determined temp tracks assembled by 'musically

[36] Stilwell, R., 'Sense & Sensibility: Form, Genre, and Function in the Film Score,' in *Acta Musicologica*, Vol., 72: No 2. (2000), p.222.

[37] Adorno, T. W. and Eisler, H., *Composing for the Films* (2nd edn.) (New York: Oxford University Press, 2007), p.65.

untrained directors, cliché-driven music supervisors, and editors' and the resultant composed cues can be repositioned by the same committee late in post-production – oftentimes without the composer's knowledge or consent.[38] It is no wonder that analysts are deterred by scores and practices that seem fragmented and chaotic, lacking continuity or coherent formal logic. However, it is widely accepted that film music is typically a subordinate element whose structure relies on extra-musical factors rather than 'absolute' musical logic. Indeed, composer Rachel Portman acknowledges that she '[does not] come up with a structure, *the film is really the structure*.'[39] In *Film Music: A Neglected Art*, Roy Prendergast explains that there is a 'cohesive form at work within the picture as a whole' and agrees that film music should reflect this underlying structure, but incorrectly (or at least ambiguously) concludes that 'each film has a unique form'.[40] He refers to the details of each scene as the 'unique underlying rhythm' but neglects to recognise that the underlying rhythm of the film as a whole may not be unique. Prendergast asserts that, while listeners of sonatas or rondos have preconceived formal expectations about the music, 'with film music there cannot be any real formal expectations in the traditional sense of the word simply because there are none' because, as mentioned, he believes each film (and concomitant score) to have a unique form.[41]

It is easy to disagree with Prendergast's (as well as Stilwell's, and Adorno and Eisler's) premise that film music comes with no formal expectations with the simple argument that film music is organised around a film's plot, which is organised around the widely-accepted framework of narrative form. Many narratologists demonstrate that an infinite number of narrative texts can be described using a finite number of concepts, i.e., there are a small number of templates underlying many texts.[42] Narrative form, by definition, comes with formal expectations. It follows logically that narrative film music must also embrace certain

[38] Sadoff, R. H., 'The Role of the Music Editor and the "Temp Track" as Blueprint for the Score,' in *Popular Music*: Vol. 25: No. 2 (Cambridge University Press, 2006), p.179.

[39] Film composer Rachel Portman in Karlin. F., *On the Track: A Guide to Contemporary Film Scoring* (New York: Routledge, 2004), p.194. (emphasis added)

[40] Prendergast, R. M., *Film Music: A Neglected Art*, 2nd edn. (New York: W.W. Norton & Company, Inc., 1992), p.245.

[41] I must assume that Prendergast's use of the word 'traditional' refers to definitions of form established in music theory. Ibid., p.244.

[42] For example, Propp, V., *Morphology of the Folktale*, trans. Scott, L. (Austin: University of Texas Press, 1968) and Bal, M., *Narratology: Introduction to the Theory of Narrative* (University of Toronto Press, 1997).

preconceived formal expectations: expectations that relate to narrative (rather than musical) formal logic. David Huron's *Sweet Anticipation* explains that music is able to evoke certain emotions because of composers' careful choreographing of expectations, whether by delaying an expected outcome, thwarting expectations entirely, or simply presenting the expected.[43] Filmmakers and composers manipulate emotional responses in the same way, playing on the accumulative learned anticipations of filmgoers. If film music comes with no formal expectations, how could a composer possibly subvert them?

In an article investigating the large-scale thematic process of John Williams' *Close Encounters of the Third Kind* (Steven Spielberg, 1977), Tom Schneller criticises the way that film music analyses regularly focus on the individual components of a score rather than 'the way these components map onto the overarching narrative trajectory to reinforce the form of the film as a whole.'[44] It is, Schneller expands, 'precisely in the realm of form that film music carries out one of its most important functions, which is to throw into relief the dramatic structure by reinforcing parallel points and creating a goal-oriented sense of gathering tension, climax, and resolution across the narrative arc of the film.'[45] Despite the fragmented nature of film music, it cannot be considered 'anti-formalistic'. Scholars must look to the 'dramatic structure' of a film and of films more generally in order to recognise the formal logic and narrative context of film music. With an acceptance of this shared structural framework, analysts may perform corpus analyses, comparing scoring techniques across a number of texts against a narrative common denominator.

2.1.2 Reading the Score as a Whole

In 1940, Oscar Levant commented that 'you never hear any discussion of a score as a whole. […] It is much as if one would discuss a suit in terms of its buttonholes, pleats, basting and lining, without once considering its suitability to the figure it adorned.'[46] He refers here to discussions of individual music cues, e.g., the 'main titles' or the 'montage sequence', rather

[43] Huron, D., *Sweet Anticipation: Music and the Psychology of Expectation* (Cambridge, MA: MIT Press, 2007)
[44] Schneller, T., 'Sweet Fulfillment: Allusion and Teleological Genesis in John Williams's *Close Encounters of the Third Kind*,' in *The Musical Quarterly* (Oxford University Press, 2014), p.98.
[45] Ibid.
[46] Levant, O., *A Smattering of Ignorance* (New York: Doubleday, 1940), p.90. in Cooper, D., 'Film Form and Musical Form in Bernard Herrmann's Score to *Vertigo*,' in *The Journal of Film Music*, Vol. 1: No. 2/3 (2003), p.239.

than, in his words, 'the character of the complete score'.[47] But what constitutes a 'complete score'? Most film scores are made up of a mishmash of short musical cues and gestures that occur intermittently throughout a film, separated by large swathes of musical silence.[48] Must we assume that all cues interact with one another as part of a larger musical network?

The short answer is no. We must remember that not every music cue is intended to correspond to other cues in the score. In fact, entire scenes may be accused of 'treading water' or playing a subservient part in the plot. *Satellites* are minor plot events that are not crucial to the narrative logic and 'can be deleted without disturbing the logic of the plot'.[49] If plot events can function as mere aesthetic filler, it seems unfair to ask any more of the score.[50] Not every element of a film score demands analytic scrutiny. Many cues must be accepted for their aesthetic qualities in what we might call the 'present tense' and be defined by their relationship to the individual scene or event rather than to the film or score as a whole. Music can be used to great effect in 'localised affective vignettes'[51] that react to individual scenes and moments rather than connect with one another. A current trend in modern media scoring is to contribute a phenomenological score (i.e., music that triggers an immediate, often bodily response from the viewer) rather than a score that relies on networks of associative themes.[52] Composers may, for instance, use innocuous drones or percussive pulses effectively to express a mood or set a tone.[53] Vasco Hexel notices an ephemeral approach to the scoring of British television show *Dr Who* (during the years of 2010–2013) in which composer Murray Gold uses localised affective vignettes that focus on the dramatic and emotive requirements of individual scenes (e.g., the 'epic' vignette or the 'touching' vignette) rather than a global musical sign-system.[54] It is an effective scoring

[47] Ibid.

[48] The types of film silence are discussed and defined later in this chapter. The term 'musical silence' refers to the unscored passages of film that exist between music cues.

[49] Chatman, S., *Story and Discourse: Narrative Structure in Fiction and Film* (Ithaca, NY: Cornell University Press, 1978), p.54.

[50] 'Mere aesthetic filler' is an unfair pejorative. Satellites can enrich a story and add depth and detail to plotlines.

[51] A term taken from Hexel, V., 'Silence Won't Fall: Murray Gold's Music in the Steven Moffat Era,' in O'Day, A. (ed.) *Doctor Who: The Eleventh Hour* (London and New York: I.B. Tauris & Co Ltd, 2014), p.173.

[52] Chattah, J., 'Film Music as Embodiment,' in Coëgnarts, M. and Kravanja, P. (eds.) *Embodied Cognition and Cinema* (Leuven University Press, 2015), p.81.

[53] This idea is discussed further in Stilwell, R., '"I Just Put a Drone under Him…": Collage and Subversion in the Score of "Die Hard",' in *Music & Letters*, Vol. 78: Iss. 4 (1997), pp.551–80.

[54] Hexel, V., 'Silence Won't Fall: Murray Gold's Music in the Steven Moffat Era,' in O'Day, A. (ed.) *Doctor Who: The Eleventh Hour* (London and New York: I.B. Tauris & Co Ltd, 2014), p.173.

strategy that, in this case, mirrors the disjointed storylines of the series. Film theorist Edward Branigan worries that colours on screen are perceived in this reactive way, as 'merely isolated sensuous spots that slip away rather than as components of emerging patterns across time'.[55]

Colour, like music, is part of a filmic language that is able to operate over a long range to express meaning through patterning and transformation, but which can also function locally and symbolically to evoke a more immediate feeling or as a shorthand form of communication. The analogy between colour and music highlights the various ways in which music may be understood statically (locally) or transitionally (globally) through repetition and variation. Colour, like music, can be used to evoke extroversive associations (e.g., the use of red to denote violence and threat in *2001: A Space Odyssey* [Stanley Kubrick, 1968], which follows the social construct that red represents anger and danger) or introversive associations (e.g., the use of yellow to signify Scottie's reality in *Vertigo* [Alfred Hitchcock, 1958]. The colour yellow has no pre-existing connection to the concept of reality, yet through its association with particular characters and events in the film, the colour and concept become linked). An example of extroversive association in film music would be the use of marching snare drums to represent the domineering might of the military in *Avatar* (James Cameron, 2009). Snare drums have long been associated with the military. In 13th-century Europe, for instance, snare drums were taken into battle to rally ally troops and demoralise the enemy. The famous two-note leitmotif assigned to the shark in *Jaws* (Steven Spielberg, 1975) is an example of introversive association in film music. Before *Jaws*, an oscillating semitone had no connection to sharks but, by coupling the musical idea with the onscreen character throughout the course of the film, audiences come to conflate the two. It functions introversively in the film, relying only on associations made within the film rather than referring to external sources. Due to the popularity of the film, the leitmotif has since been cited and parodied frequently by film composers. Its use outside of *Jaws* is a form of extroversive referencing.

However, like music, colour may also be read as a long-range expressive strategy. A changing colour can communicate transition: if a colour has been associated with a subject

[55] Branigan, E., *Tracking Color in Film and Art* (New York: Routledge, 2018), p.xxvi.

and that colour then shifts, it signifies a change in something. An example of transition through changing colours can be seen in *The Last Emperor* (Bernardo Bertolucci, 1987) and the journey from reds, through oranges and yellows, to green as the protagonist transcends naivety to a more mature state of awareness. In film music, an equivalent idea might be expressed through successive musical styles. For example, the music of short film *Sanjay's Super Team* first appears as a high-energy, electronic kids' television track as Sanjay watches cartoons, ignorant of his father's religion and culture. The style then moves through various percussion ensembles and later takes on a more traditional Indian style featuring bansuri and sitar, mirroring Sanjay's incremental development towards cultural maturity throughout the film.[56] Transition may also be expressed through the changing qualities of a single colour, e.g., the fading vibrancy and prominence of blue in *Blue is the Warmest Colour* (Abdellatif Kechiche, 2013) as the relationship with which the colour is associated dims.[57] A parallel (albeit reversed) with film music here would be *teleological genesis*, which Tom Schneller articulately explains is 'the emergence over the course of a piece of an extended melodic idea that develops gradually out of motivic fragments […] into the definitive version, which serves as the culmination of the piece as a whole.'[58] It is, Schneller continues, 'the reverse of thematic presentation in classical sonata form, in which themes are presented in their definitive form at the outset of the piece, and are subsequently subjected to fragmentation and development.'[59] Examples of this long-range scoring strategy can be found in a number of the scores of John Williams. A well-known example exists in *E.T.: The Extra-Terrestrial* (Steven Spielberg, 1982). Williams' famous 'Flying theme' is not heard in its complete form until over an hour into the film, at which point E.T. causes Elliott's bike to fly above the forest. The full statement of the theme evolves from a germinal few notes at the beginning of the film and expands gradually as the story unfolds.

Though, as evidenced, colours can be used effectively to communicate fairly complex ideas, they are also regularly present on screen without being required to actively communicate or influence. Likewise, while film music can act as an effective communicator,

[56] *Sanjay's Super Team* is discussed in more detail in Chapter 4.
[57] Some examples in this chapter are taken from Criswell, L., 'Colour in Storytelling,' at https://www.youtube.com/watch?v=aXgFcNUWqX0 (accessed 19th July, 2017)
[58] Schneller, T., 'Sweet Fulfillment: Allusion and Teleological Genesis in John Williams's *Close Encounters of the Third Kind*,' in *The Musical Quarterly* (Oxford University Press, 2014), p.99.
[59] Ibid., p.100.

it can also be employed simply to fill an otherwise silent scene. Igor Stravinsky speaks of this type of ambient film music as 'wallpaper', 'perfume', and as 'having the same relationship to the drama that restaurant music has to the conversation'.[60] These pejoratives, while seemingly unfair, rather accurately describe the role of underscore in many instances, merely 'treading water' until the next dramatic moment.[61] Ben Winters attempts to restore Gérard Genette's distinction between 'narrative' and 'narrating', suggesting that 'while the majority of music in film might usefully be thought of as part of a narrative, it does not usually narrate'.[62] He argues that music 'generally unscrolls in the present alongside (and as part of) the rest of the narrative, as a kind of mimesis, rather than operating as a temporally distanced and authoritative narrating agency'[63] and suggests considering film music as 'a collaborating art that *helps to create narrative* along with visible representational elements' rather than as a narrating voice in and of itself.[64] This sentiment aligns with David Cooper's definition of a narrative as 'the collective outcome of all of a film's elements – its dialogue, action, set, camera-work, lighting, editing, sound design, and so on'.[65] There is a synergistic relationship between the aural and visual components of a film, the through-lines of which, when devised successfully, coordinate to trace a singular narrative form. It is through an appreciation of the hierarchy of events that satellites (and essential plot points known as *kernels*) can be identified and a judgment on the accompanying music (or lack thereof) may be made. Ultimately, in order to determine which cues are most worthy of analytical consideration, one must appreciate the varied significance of film music cues. For this, it is necessary to read the film as a whole and understand the film's structural hierarchy.

As recently as 2015, Brian Jarvis revived the discussion of how film music operates at a

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[60] Dahl, I., 'Igor Stravinsky on Film Music' in Mervyn Cooke (ed.)
The Hollywood Film Music Reader, (Oxford University Press, 2010), p.277. Quoted in Winters, B., 'Musical Wallpaper?: Towards an Appreciation of Non-narrating Music in Film,' in *Music, Sound, and the Moving Image*, Vol. 6: Iss. 1 (Spring 2012), p.46.

[61] Directors might argue, as Claudia Gorbman did in 1987 when she claimed that 'whatever music is applied to a film segment will *do something*, will have an effect' (Gorbman [1987] p.15.), that music is always relevant, whether to give pace to a scene or to suture an awkward edit, etc.

[62] Winters, B., 'Musical Wallpaper?: Towards an Appreciation of Non-narrating Music in Film,' in *Music, Sound, and the Moving Image*, Vol. 6: Iss. 1 (Spring 2012), p.40.

[63] Ibid.

[64] Ibid., p.45. (emphasis added)

[65] Cooper, D., 'Film Form and Musical Form in Bernard Herrmann's Score to *Vertigo*,' in *The Journal of Film Music*, Vol. 1: No. 2/3 (2003), p.239.

global level.[66] Lamenting that there are 'no [existing] analytical approaches to film music that engage entire films without presupposing (or concluding) that the film's music has a structure independent of its visual track',[67] Jarvis shares Peter Larsen's (film music) and Carolyn Abbate & Roger Parker's (opera) stance that 'works that involve text and music must be considered as an integrated whole if they are to be properly understood'.[68] Drawing on narrative concepts put forth by literary scholars Gustav Freytag and Seymour Chatman, Jarvis proposes an analytical method for graphically representing an entire film that 'combines with the work's complete score' to facilitate large-scale film music analysis across entire works – a method that I review later in this chapter. Jarvis points out that the cue lists typically used by film-music analysts to tabulate music cues regularly neglect the parts of the film without music in them. Though his work does not expand upon the issues that arise from a disregard for these portions of the film, he briefly acknowledges its importance and is careful to include unscored sections in his diagrams. As this thesis will demonstrate, the gulfs of silence between music cues contribute substantially to film music form and must therefore be included in the discussion.

2.1.3 Including Silence

In film scoring, silence is a choice. A scene that lacks music is not neglected, but judiciously considered in the context of the story and in relation to the dialogue and sound design requirements of the scene. Yet film music analyses concern themselves first and foremost with music. Often, lengthy portions of films are left unscored and, inevitably, unexamined. In the following section, I expand upon the significance of the unscored space between film music cues and revise Claudia Gorbman's early definitions of soundtrack silences.

In film scores, silence acts as a frame for music and music, in turn, acts as a frame for silence. They create space and context for one another and give the score form. 'The mere fact of multiple cues – the pattern of music's occurrence, absence and recurrence –,' David Neumeyer and James Buhler point out, 'already means that music has the potential to affect

[66] Jarvis, B. E., 'Analyzing Film Music Across the Complete Filmic Structure: Three Coen and Burwell Collaborations,' PhD thesis (Florida State University, 2015)
[67] Ibid., p.1.
[68] Ibid., p.17.

filmic form as substantially as any other structuring opposition.'[69] Legendary director Alfred Hitchcock once asserted that music is placed into a film principally so that it may be strategically taken away.[70] The rudimentary contrast of music and musical silence provides filmmakers with a fundamental structuring device even before one considers the numerous possibilities that a dynamic soundtrack offers.

Roy Prendergast points out that 'the most effective place *musically* in [*Butch Cassidy and the Sundance Kid* (George Roy Hill, 1969)] is a portion that has no music at all.'[71] Referring to a scene in which two heroes are being chased across the plains, Prendergast suggests that the composer created a 'kind of negative accentuation by avoiding music [in this scene] altogether.'[72] The avoidance of music is highlighted by having music cues before and after, framing the unscored scene, and by subverting the expectation of the viewer by leaving unscored a scene which, in similar chase sequences, would likely have employed a *scherzo* underscore. Hypothetically, in a film otherwise scored wall-to-wall,[73] leaving a single scene or moment without music might mark it as significant by its sheer uniqueness. The assumption is that a scene must be significant if it is to be treated differently. The reverse approach of one music cue in a film otherwise unscored will likely generate the same inference. Each hypothetical example goes to the extreme to demonstrate positive and negative accentuation. These examples need only be augmented in order to appreciate the exponential complexity that comes from the nuanced patterning of music and musical silence: a film with only two scored scenes ('why those two?'); a film with three cues ('what is significant about these moments?'); etc.[74] These considerations raise the question: *Does a greater saturation of music dilute the significance of each cue?*[75]

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[69] Neumeyer, D. and Buhler, J., 'Analytical and Interpretive Approaches to Film Music (1): Analysing the Music,' in Donnelly, K. L. (ed.), *Film Music: Critical Approaches* (Edinburgh University Press Ltd, 2001), p.32.

[70] 'Well if we didn't have the music in the picture in the first place we couldn't stop it. Which is to say that we put music there so we can stop it.' Hopper, H., '"Hitch" Reveals Secret of Making His Pictures,' in *Los Angeles Times* (11th March, 1945), p. B1, 3. Quoted in Rosar, W.H., 'The Herrmann–Hitchcock murder mysteries: post-mortem,' in Steven Rawle and K. J. Donnelly (eds.) *Partners in Suspense: Critical essays on Bernard Herrmann and Alfred Hitchcock* (Manchester University Press, 2017) p.178.

[71] Prendergast, R. M., *Film Music: A Neglected Art*, 2nd edn. (New York: W.W. Norton & Company, Inc., 1992), p.244. (emphasis added)

[72] Ibid.

[73] The term 'wall-to-wall' refers to a film with continuous music throughout.

[74] These questions may be asked about any dichotomous relationship in film, e.g., *how does the black-and-white scene relate to those in colour? What does a one-shot tell us about the fast-paced editing of other scenes?*

[75] This question is explored more in Chapter 6.3.

Silence occurs at a number of levels in a film's soundtrack. Claudia Gorbman's seminal *Unheard Melodies* offers definitions of three types of soundtrack silence and their functions:

> A *diegetic musical silence* [i.e., diegetic sound with no music] can function effectively to make the diegetic space more immediate, more palpable, in the absence of the Muzak-like overlay so often thrust on the spectator's consciousness. […] For *nondiegetic silence*, the soundtrack is completely without sound. [… It] can be put to "modernist" or comedic use. […] A *structural silence* occurs where sound previously present in a film is later absent at structurally corresponding points. The film thus encourages us to later expect the (musical) sound as before, so that when in fact there is no music we are aware of its absence.[76]

Gorbman's definition for 'structural silence' can also work in reverse: the absence of sound in a scene may correspond to a later one in which sound is present. Confusingly, she employs the terms 'music', 'sound' and '(musical) sound' interchangeably. For clarity, I offer revised terms and definitions in place of Gorbman's three types of silence, as well as updating the list to include the glaring absentee, 'sound silence':

1. A *musical silence* occurs when a scene is left unscored but retains other sound elements, such as dialogue, foley, SFX, atmos, etc.
2. A *sound silence* occurs when the soundtrack contains only non-diegetic musical score.
3. *Complete soundtrack silence* refers to a moment in which the soundtrack is entirely without sound and music.
4. A *corresponding silence* occurs when a scene with sound or music corresponds (narratively, visually, or otherwise) to a scene without sound or music.

This list is by no means exhaustive, but provides a logical starting point from which to discuss the complexities and nuances of the *mise-en-bande*.[77] The first three of the revised

[76] Gorbman, C., *Unheard Melodies: Narrative Film Music* (Bloomington: Indiana University Press, 1987), pp.18–9.

[77] 'Mise-en-bande' is a term coined by Rick Altman *et al.*, meaning the interaction of sound components on a film's sound track. Found in Altman, R. with Jones, M. and Tatroe, S., 'Inventing the Cinema Soundtrack: Hollywood's Multiplane Sound System,' in Buhler, J., Flinn, C., and Neumeyer, D. (eds.) *Music and Cinema* (Hanover, NH: University Press of New England, 2000)

definitions are reasonably straightforward, but the latter requires some clarification. Corresponding silences operate across time. When scenes are related by similarity, differences between them, however slight, will impart information. An example of a *corresponding silence* can be found in *King Kong* (Merian C. Cooper and Ernest B. Schoedsack, 1933). The film, initially set in New York, is without music for its entire first act.[78] The introduction of non-diegetic music in Act Two, as the characters approach the mysterious Skull Island, provides contrast to its previous absence (the opening 17'43" of musical silence), creating a stark distinction between the sequences. On returning to New York for Act Three, music's presence accentuates the difference between the music-deprived, Depression-era New York of Act One and a New York rejuvenated in Act Three by the arrival of Kong (and of music). The presence of music in Act Three can be interpreted in this way only when recognised as a reference to and a contrast of Act One New York's musical silence. Similarly, in the opening act of *Harry Potter and the Philosopher's Stone* (Chris Columbus, 2001), music exists only when magic is afoot. Musical silence, in turn, signifies the mundanity of the non-magical world. Music's signification of the fantastical cannot be recognised without its contrasting counterpart; something only a reading of the score that includes musical silences can conclusively provide. As Michel Chion asserts, 'the impression of silence in a film scene does not simply come from an absence of noise. It can only be produced as a result of context and preparation.'[79] Film music cues and the gulfs of musical silence between them are in this sense, to borrow linguistic terminology, *anaphoric*: their interpretation is dependent upon antecedent or subsequent elements in the soundtrack.[80] They are, as Paul Théberge says of movie silence, 'always relative, and relational to sounds heard in the context of the film itself.'[81] That is to say, silence has the potential to be part of a long-range system of meaning. It is therefore valuable to provide

[78] Excluding the opening titles and expository text.

[79] Chion, M. (ed.), *Audio-vision: Sound of Screen*, trans. Gorbman, C. (New York: Columbia University Press, 1998), p.57.

[80] In the sentence 'Woody arrived, but nobody noticed him', for example, the pronoun *him* is an anaphor referring back to the antecedent Woody. In the sentence 'Even after his arrival, nobody noticed Woody', the pronoun *his* refers forward to the postcedent Woody, so *his* is now a cataphor (and an anaphor in the broader sense).

[81] Théberge, P., 'Almost Silent: The Interplay of Sound and Silence in Contemporary Cinema and Television,' in Beck, J. and Grajeda, T. (eds.) *Lowering the Boom: Critical Studies in Film Sound* (University of Illinois Press, 2008), p.53.

a global context in discussions of film music, for much of music's referential capability relates to its placement in and the syntactic principles of a score.

Théberge attempts to develop an understanding of the ways in which 'patterns of sound and silence emerge and contribute to the overall structure of the narrative.'[82] He acknowledges that it is not only the sound track (i.e., the relationship between audio elements, including dialogue, sound effects, music, and silence) that is the unit of analysis, but also its relationship to the narrative. Exploring the idea of structural silences, Théberge believes that sound design can be thought of not simply as the 'crafting of individual sound effects or the creation of elaborate sound tapestries for individual scenes,' but as a tool for developing the large-scale thematic or narrative structure of a work. There is no such thing as a true or 'absolute' silence, he claims, only 'a system of relative, structured silences – silences that are made to have meaning within the relational and representational context of the soundtrack itself.'[83] By this logic, to paraphrase Théberge, music cues are also *made to have meaning within the relational and representational context of the soundtrack itself*.

I will add a final type of silence that will be discussed at length throughout this thesis:

5. *Thematic silence* refers to the sonic space between corresponding statements of a musical theme.

As Chapters 4 and 5 will attest, thematic silences play a key role in structuring a film score. The omission of musical themes provides context and meaning to their recurrence; scenes in which composers elect *not* to include distinctive musical features can be just as significant in the structure of a score as the scenes in which they *are* deployed. In short, absence gives meaning to presence just as presence gives meaning to absence.

[82] Ibid., p.51.
[83] Ibid., p.67.

2.1.4 The Organisation of Film Music Themes

At Pixar, former music editor Jack Dubowsky explains that:

> Temp music accompanies the film from the earliest seeds of an idea, being used for a pitch or for an 'inspiration reel', all the way through every edit of the film, from rough cuts of storyboards, through 'soft locks' at departmental screenings to final locked picture. [...] The temp score evolves dynamically as the picture develops from concept to final inception, until the final composer receives it as a guide.[84]

If a film's soundtrack is meticulously designed long before the composer engages with the project, his or her contribution is destined to be, in terms of creative freedom, rather limited. The temp track will already contain much of the suggested extroversive information required of the scene (e.g., the pacing, musical style, instrumentation, etc.): what Bradley Spiers refers to as the setting or the 'framing function' for thematic material.[85] What a temp music editor cannot achieve, unless temping a sequel with cues from its precursor's soundtrack, is the threading of themes throughout a film, 'which is generally regarded as the DNA for a score's structure.'[86] It is the composer's job not necessarily to decide where music ought and ought not be placed, but to provide continuity to the makeshift melange by introducing and positioning a network of themes, creating the film's introversive musical sign system: that is, the internal vocabulary of the film or 'sounds that point to other sounds or musical events within the work itself.'[87] It is in these thematic threads that we may best apprehend the film composer's chief contribution to the film. The leitmotif technique, as Hans Keller explains, is 'the easiest way out of the disunity which threatens a film score's bits and pieces, disconnected as these are at least in time.'[88] Aside from a common timbral palette or musical style, imbuing a film score with a unique lexicon of leitmotifs is perhaps the most common stratagem for connecting spasmodic music cues, affording the film a

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[84] Dubowsky, J. C., 'The Evolving "Temp Score" in Animation,' in *Music, Sound & the Moving Image*, Vol. 5: No. 1 (Spring, 2011), p.5. See also, Goldmark, D., 'Pixar and the Animated Soundtrack,' in Richardson, J., Gorbman, C. and Vernallis, C. (eds.) *The Oxford Handbook of New Audiovisual Aesthetics* (Oxford University Press, 2013), p.213.

[85] Spiers, B., '"Adventure is out there!": Pastiche and Postmodernism in the Music of *Up*,' in *Nota Bene: Canadian Undergraduate Journal of Musicology*, Vol. 5: Iss. 1 (2012), p.116–7.

[86] Sadoff, R. H., 'The Role of the Music Editor and the "Temp Track" as Blueprint for the Score,' in *Popular Music* Vol. 25: No. 2 (Cambridge University Press, 2006), p.173.

[87] Slobin, M. (ed.), *Global Soundtracks: Worlds of Film Music* (Connecticut: Wesleyan University Press, 2008), p.8.

[88] Keller, H., *Film Music and Beyond*, Wintel, C. (ed.) (London: Plumbago Books, 2006), p.74.

unique sonic identity. Smaller musical 'shapes' distributed throughout a score may act as synecdoches for the fuller melody or idea. These reduced units are also anaphoric in that they refer to a fuller idea that is presented either before or after the fact.

David Neumeyer and James Buhler suggest that leitmotivic analysis can be applied on two levels: '[1] the musical characterisation in the leitmotiv itself and [2] its pattern of recurrence in the film.'[89] Mapping the pattern of recurrence of leitmotifs, the pair say, 'allows one most readily to tie the musical score into a narrative analysis.'[90] I suggest it is a combination of *where* a cue is placed and *how* it is presented (in relation to previous and later occurrences) that most readily ties the musical score into a narrative analysis. Lehman also accords particular narrative value to the placement of themes, writing that it is 'how a theme is deployed within the context of the global text itself that is generally of greatest interest [to the analyst], especially a theme's potential to mark "shifts in character and [articulate] large formal spans in the film."'[91] The dramatic significance of the leitmotif is understood through its transitional properties or, as Neumeyer and Buhler write, 'how the musical details of the motive are altered from one appearance to the next' and, I would add, how these musical details reflect or corroborate the unfolding narrative, for it is in the context of a film that film music is most logically interpreted.[92] The gradual desaturation of the colour blue is, after all, more sensibly read as a parallel of the deteriorating relationship in *Blue is the Warmest Colour* rather than as a disconnected filmmaking decision.

Motivic recurrence does not always rely on melodic recall. *Leitharmonie* is the term for either a distinct harmonic progression associated with a character or idea, or the harmony of melodic leitmotif (but without said melody). While the leitmotif 'draws attention to itself; [for] it must be heard to perform the semiotic function attributed to it', leitharmonie operates more discretely.[93] The technique can be employed to subtly hint at association or

[89] Neumeyer, D. and Buhler, J., 'Analytical and Interpretive Approaches to Film Music (1): Analysing the Music' in Donnelly, K. L. (ed.) *Film Music: Critical Approaches* (Edinburgh University Press Ltd, 2001), p.29.
[90] Ibid.
[91] Ibid. Quoted in Lehman, F., 'Methods and Challenges of Analyzing Screen Media,' in Mera, M., Sadoff, R. and Winters, B. (eds.) *The Routledge Companion to Screen Music and Sound* (Oxon: Routledge, 2017), p.502.
[92] Neumeyer, D. and Buhler, J., 'Analytical and Interpretive Approaches to Film Music (1): Analysing the Music,' in Donnelly, K. L. (ed.), *Film Music: Critical Approaches* (Edinburgh University Press Ltd, 2001), p.29.
[93] Buhler, J., '*Star Wars*, Music, and Myth' in *Music and Cinema* ed. James Buhler, Carlyn Flinn, and David Neumeyer (Hanover, NH: University Press of New England, 2000), p.43.

to combine two character themes or ideas together, e.g., the melodic theme of Character A atop the harmony of Character B's theme. Lehman explains this phenomenon in the form of a question:

> Thematic transformation is easy to reconstruct and interpret when the rhythmic/intervallic structure of a theme is retained and harmony or orchestration shifts. But what of the reverse, when an underlying harmonic paradigm is retained but melodic information is heavily disguised or discarded wholesale – should this even count as transformation?[94]

The harmony of a significant theme still connects at some level with other instances of the leitmotif and should be considered within the context of the thematic journey. The impact of leitharmonie is especially compelling when the progression itself is particularly remarkable – a case could be made for it as being just as identifiable as with its melodic form.

Lehman warns that, though thematic interpretations are valuable, they 'tend to leave uninspected non-melodic portions of underscore.'[95] Or, indeed, non-thematic portions of underscore. When mapping the trajectories of themes, it is important to remember that they comprise only a small fraction of the vast amounts of music in modern feature films. Lehman's warning is further advocation for the retention of context throughout analysis.

A method for transforming a musical theme over the course of a film is through a trajectory of changing tonal centres, or *tonal design*. Insightful studies by David Neumeyer (1998), Ronald Rodman (1998 and 2000), Frank Lehman (2012), and Táhirih Motazedian (2016) demonstrate that practitioners employ long-range tonal strategies in accordance with a range of filmmaking and storytelling devices. For instance, Motazedian's doctoral dissertation reveals a shared symmetry between the narrative structure in *The Grand Budapest Hotel* (Wes Anderson, 2014) and the score's tonal design.[96] Motazedian presents her results in an adapted Gantt graph with different tiers to represent different keys

[94] Lehman, F., 'Music Theory through the Lens of Film,' in Journal of Film Music, Vol. 5: Iss. 1–2 (2012), p.181.
[95] Lehman, F., 'Methods and Challenges of Analyzing Screen Media,' in Mera, M., Sadoff, R. and Winters, B. (eds.) *The Routledge Companion to Screen Music and Sound* (Oxon: Routledge, 2017), p.502.
[96] Motazedian, T., 'To Key or Not to Key - Tonal Design in Film Music,' PhD thesis (Yale University, 2016), pp.89–106.

(ordered vertically by their chronological entrance in the soundtrack) along an x-axis timeline of the film, with gaps in the horizontal blocks to account for musical silences (**Figure 2.1**). Rather unfortunately, the graph does not include narrative information, denying the reader the score's filmic context and therefore the true relevance of the tonal pattern.

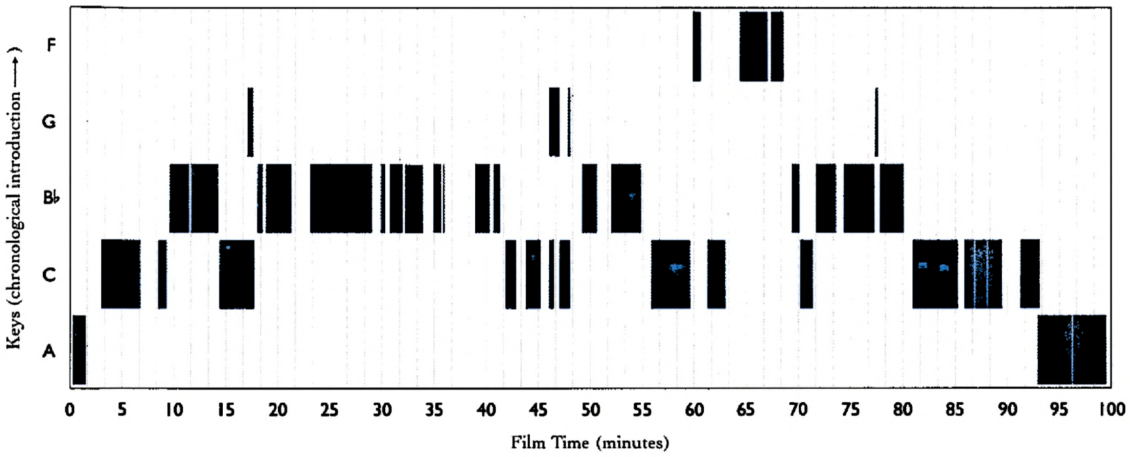

Figure 2.1 Symmetrical tonal design in *The Grand Budapest Hotel* (Motazedian, 2016)

Motazedian also reveals (though not in this graph) how the three distinct time periods of the film and the specific screen aspect ratios that frame each of them also unfold symmetrically with each time period assigned to a key signature: 1985, with an aspect ratio of 1.85:1, is in A major; 1968, with an aspect ratio of 2.35:1, is in C major; and 1932, with an aspect ratio of 1.37:1, is in B-flat minor. Sound design elements are also pitched to follow this tonal schema. Alexandre Desplat, the film's composer, clearly worked closely with director Wes Anderson to create a score so intrinsically entwined with the film itself, that its interpretation is inextricably reliant on its narrative framework and its relationship to other filmmaking components. As such, the tonal relationships between cues would make little sense if separated from its filmic context or read in a localised way. Tonal design in film music, then, can be an important structuring strategy with which the composer may convey and contribute to a narrative.

2.1.5 Corpus Analysis

Corpus analysis involves the collection and statistical analysis of large amounts of data from a body of work. A corpus method can be useful for uncovering recurring patterns and trends, as well as identifying consistency or shifting trends over large timespans. With this data, the analyst may better set and adapt the parameters of a broader perceptual or theoretical model. The origins of modern musical corpus research, as David Temperley and Leigh VanHandel point out, might be traced back to the work of Leonard B. Meyer in the fifties.[97] While Meyer did not use corpus methods per se, he proposed that listeners' musical experiences and responses are shaped by statistical regularities in the music they hear. He suggests that music's emotive potential lies 'in the realm of expectation'.[98] Ergo, the gathering of statistical information from music simulates the listener's learning process and provides parameters needed for the modelling of expectation and other aspects of perception. This idea that people learn from and are able to make predictions based on statistical frequency of events has become an influential premise in other areas of cognitive science. More recently, David Huron has built upon Meyer's theory of expectation by focussing on how music is predicted and perceived based on pattern recognition and statistical norms.[99] Other recent musicological corpus studies have focussed on issues such as genre studies and harmonic progressions, 18th-century schemata, the cognitive processes of composition and improvisation, and cross-cultural correlations between music and language. However, fewer studies of this nature have been carried out in screen music scholarship. This is perhaps due to the lengthy durations of multiple films or the labour-intensive process of extracting and transcribing cues without expedient sheet music. It may also relate to the notion laid out earlier in this thesis that individual film scores are considered structurally unique, constructed without precedent.

A study of note is Mark Richards' industrious 2016 project entitled 'Film Music Themes: Analysis and Corpus Study', which proposes and applies an analytical system to 482 themes from Oscar-nominated scores ranging from the early 1930s to the present day.[100]

[97] Temperley, D. and VanHandel, L., 'Introduction to the Special Issues on Corpus Methods' in *Music Perception: An Interdisciplinary Journal*, Vol. 31: No. 1 (2013), p.1.
[98] Meyer, L. B., *Emotion and Meaning in Music* (Chicago: The University of Chicago Press, 1956), p.2.
[99] Huron, D., *Sweet Anticipation: Music and the Psychology of Expectation* (Cambridge, MA: MIT Press, 2007)
[100] Richards, M., 'Film Music Themes: Analysis and Corpus Study,' in *Music Theory Online*, Vol. 22: No. 1 (March, 2016)

Generating a corpus that spans such a vast period of time enables Richards to uncover how the construction of film music themes has evolved over an 82-year period. He observes two notable shifts in around 1960 and 1990, which he concludes are the result of the introduction of popular styles of music in film for the former and the advancements in and influence of technology in the production of film music for the latter. Richards' research not only highlights shifts in film music composition, but also periods of consistency. The Pixar–Giacchino study in the present thesis provides the opportunity to uncover consistencies and changing practices in both the films of Pixar Animation Studios and the scores of Michael Giacchino over a 14-year period.

Táhirih Motazedian analysed 'over sixty and counting' film scores in her aforementioned research on the tonal design of film scores.[101] Her dissertation focuses on only eleven of these. Having such a large corpus allowed her to 'formulate systemic generalizations about the characteristics and conventions of tonal design in film music.'[102] She was then able to highlight specific scoring strategies and notable filmic examples from the corpus in order to more effectively present and with greater surety make claims about the works and forge theories about works outside of the selected corpus. Of course, within any corpus, not all films will proffer data that confirms the analyst's hypothesis, but it is within these large bodies of work that hypotheses can be tested, reworked, and strengthened.

In the same way that Vladimir Propp's study of 100 folk tales from the corpus of Alexander Fyodorovich Afanasyev enabled him to identify the 31 typical 'functions' of a plot, the present thesis uses corpus analysis as a method for detecting and demonstrating commonalities in the structure of modern film scores.

[101] Motazedian, T., 'To Key or Not to Key - Tonal Design in Film Music,' PhD thesis (Yale University, 2016), p.25.
[102] Ibid.

2.2 Graphic Representations of Form

In order to analyse film music at the level of the entire film, inclusive of all cues and silences, as well as the tonal and transformational trajectories of themes and leitharmonie, while retaining the film's narrative form, I have elected to use a method of graphical representation that enables me to populate a film's timeline with the component parts of a film score. The following section demonstrates several methods of diagrammatic presentation employed by filmmakers and analysts alike to convey the relationship between a film's numerous moving parts.

2.2.1 Graphic Representations at Pixar

Each Pixar feature film may take many years to produce. Over that time, with multiple rewrites and edits, it can quickly become difficult to retain a sense of the complete story. In fact, there is an informal term at Pixar for an affliction known as 'sequencitis', which sets in when story artists and animators focus exclusively on the sequence upon which they are working and lose sight of its role in the greater context of the film. This acute awareness of the importance of context and joking acknowledgment of its absence as an ailment illustrates both the concern Pixar employees show for telling a good story and the disconnect between the micro-level filmmaking practice and the macro-level nature of storytelling. Composer Nicholas Britell also recognises a mismatch between working practice and final product. He describes the practice of composing to picture as 'this sort of micro-level exploration of a scene – or even of just, like, part of a scene or a moment'.[103] The localised level at which practitioners must work risks compromising the film at a global level or, as Britell calls it, the 'architecture of the whole – the macro'.[104] Commenting on the role of the dramaturg, whose responsibility it is to bring together all of the elements of a dramatic work into a coherent whole, David Williams suggests that the most difficult thing is 'that sense of being close up and far away [at the same time … and] having a real sense of how things are put together and how those details might relate to some broader

[103] Nicholas Britell in 'Tom Hiddleston meets Nicholas Britell,' on *Only Artists*, Series 7: Ep. 8 (BBC Radio 4, March 2019)
[104] Ibid.

structure that in turn will feed back into the micro-detail'.[105] Mary Coleman, a Senior Development Executive at Pixar, explains that storywriters combat this issue in pre-production by literally drawing 'the emotional arc [of the film] on the wall' from which they 'delineate different points on the arc of what's happening for [the] character emotionally.'[106] This is not the only solution that Pixar personnel have devised for the retention of perspective during production.

A common pre-production visualisation tool is the *colourscript*, which is made up of full frames of concept art, 'which allows you to see the whole arc of a film's color mood at a single glance, [and] is essential in planning and refining the visual and emotional rhythm of a film to support its story.'[107] **Figure 2.2** demonstrates Lou Romano's colourscript for Pixar's *Up* which can be found in Amid Amidi's *The Art of Pixar* book.[108]

Figure 2.2 The colouscript for *Up* (Amidi, 2011)

[105] Williams, D., unpublished interview with Synne Behndt (2006). Quoted in Turner, C. and Behrndt, S., *Dramaturgy and Performance: Revised Edition* (London: Palgrave, 2016), p.186.
[106] 'Advice to Storytellers 3' from Pixar In A Box: The Art of Storytelling at https://www.khanacademy.org/partner-content/pixar/storytelling/story-structure/v/advice-final (Accessed 27th May, 2017)
[107] Amidi, A., *The Art of Pixar: The Complete Colorscripts and Select Art from 25 Years of Animation* (San Fransisco, CA: Chronicle Books LLC, 2011), p.7.
[108] Ibid., pp.128–137.

Colourscripts convey the emotional connotations derived from certain colours and colour palettes for key scenes. An example of how the transitional properties of colour were exploited for storytelling purposes during the pre-production stages of *Up*:

> While developing a sequence in *Up*, in which we see Carl as a young man, enjoying married life with his wife, Ellie, lighting art director Lou Romano and production designer Ricky Nierva envisioned draping the sequence in nostalgic sepia tones. After seeing the colorscript, John Lasseter […] suggested a different approach; instead of desaturation, those scenes should be as vibrant "as when you first fall in love." This kernel helped establish the color framework for the rest of the film, while reinforcing the dramatic arc. After Ellie's death, Carl's world becomes dark and gloomy. Color is slowly reintroduced in the form of the balloons that lift him into the sky, Russell and his rainbow sash of Wilderness Explorer merit badges, and Kevin, the colorful bird of Paradise Falls. Magenta, which is Ellie's color, remains absent from the film until Carl reaches Paradise Falls.[109]

This anecdote describes both the global colour framework and the specific use of magenta, which is associated with Ellie in earlier scenes and removed until Carl achieves his (rather, their) goal. The use of this specific colour functions in the same way a musical leitmotif might, being attached to and becoming associated with a particular character. In the mid-1930s, Natalie Kalmus would create so-called 'colour charts' for live-action feature films after analysing the script to 'ascertain what dominant mood or emotion is to be expressed.'[110] She compares the chart to a musical score, explaining that it provides a detailed plan from which all departments can collectively work in the way that the individual instruments of an orchestra follow a score to perform a coherent musical work.

Speaking at SIGGRAPH 2015, Director of Photography Patrick Lin shared graphics of and insights into the methods his team employed to create a unique visual language for *Inside Out* 'to provide [the] film with a camera arc that parallels story and its characters' emotional ups and downs.'[111] Lin's graphs (**Figures 2.3** and **2.4**) reveal how 'camera freedom' and 'sense of scale' progress throughout the film and, importantly, how changing states parallel the film's act structure. Lin refers to 'camera structure', which he defines as a 'way of organising all of [a film's] visual elements into something coherent that can support the

[109] Ibid., pp.11–2.
[110] Kalmus, N. M., 'Color Consciousness,' in *Journal of the Society of Motion Picture Engineers* (August, 1935), p.145.
[111] Lin, P., 'The Ins and Outs of Inside Out's Camera Structure' at SIGGRAPH 2015 Talks (Los Angeles, 2015)

story and characters' emotions.'[112] The interaction between the visual language of Riley and Joy's respective worlds (Joy is an anthropomorphised emotion living in Riley's mind) is divided into three identifiable acts, each with discrete properties based on the function of the act. Lin explains that these graphs were created to 'study the contrast between the two worlds scene by scene during pre-production and guide our creative decisions during production, ensuring the visual progression is always supporting our characters and story.'[113] These graphs, while deficient in technical information, convey the broad transitional properties of the camera language across the entire film, immediately and effectively communicating the tripartite form of the film's story.

[112] 'Camera structure and language within Inside Out' at https://www.pluralsight.com/blog/film-games/camera-structure-language-within-inside (9th Sept, 2015) (Accessed 7th February, 2019)
[113] Ibid.

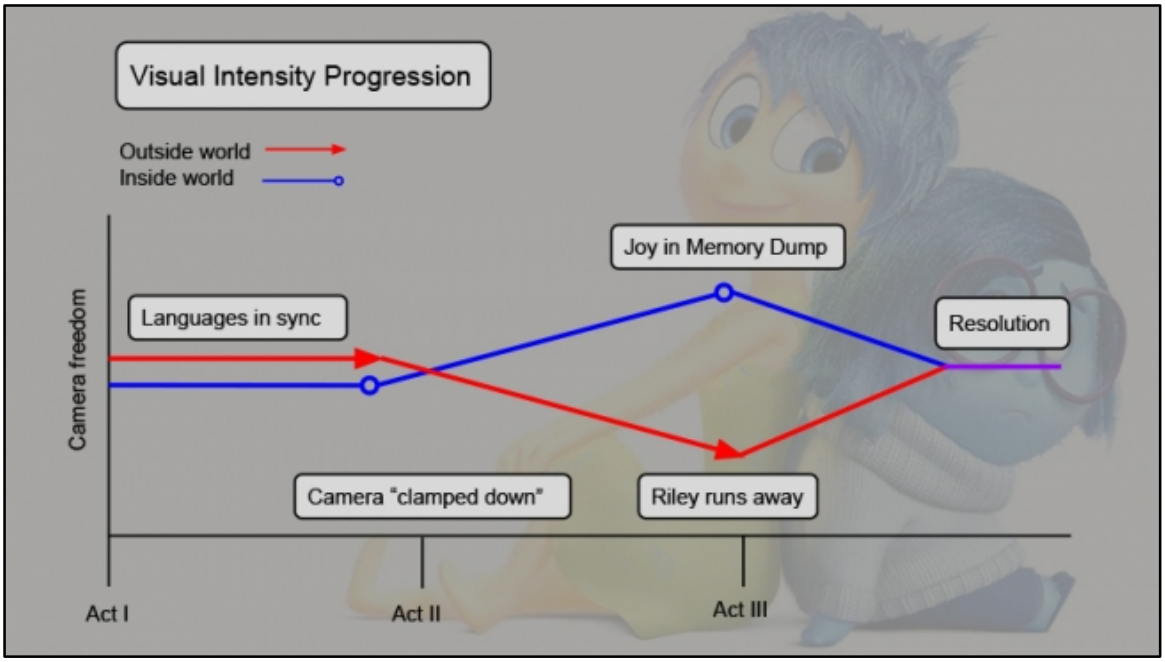

Figure 2.3 *Inside Out* visual intensity progression graph (Lin, 2015)

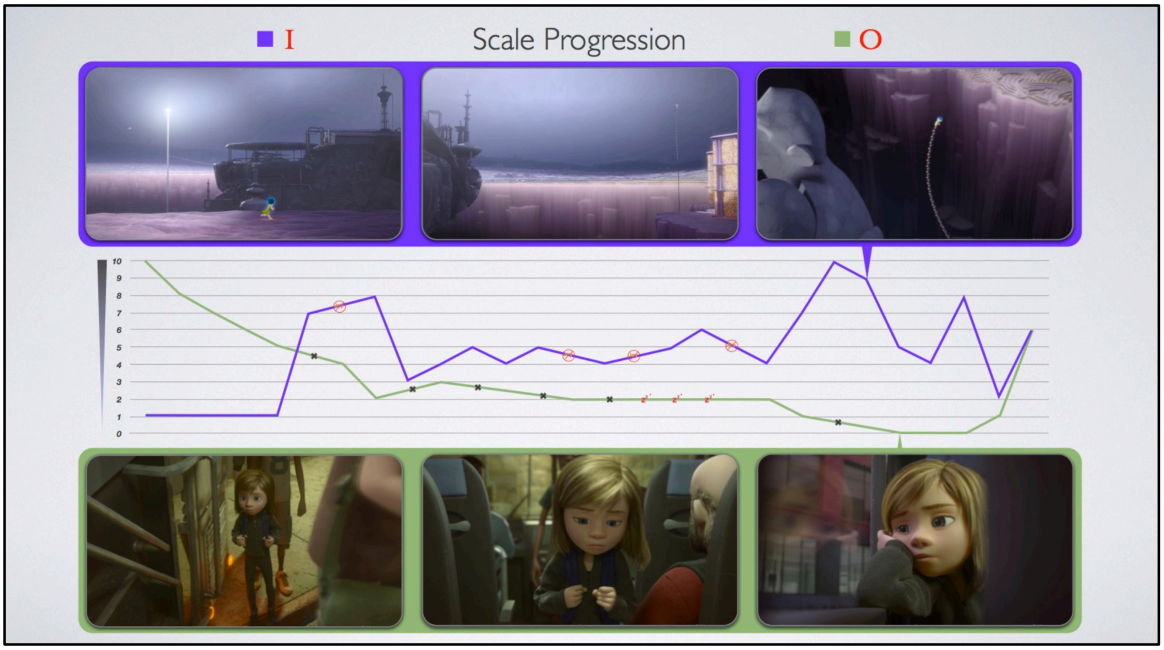

Figure 2.4 *Inside Out* scale progression graph (Lin, 2015)

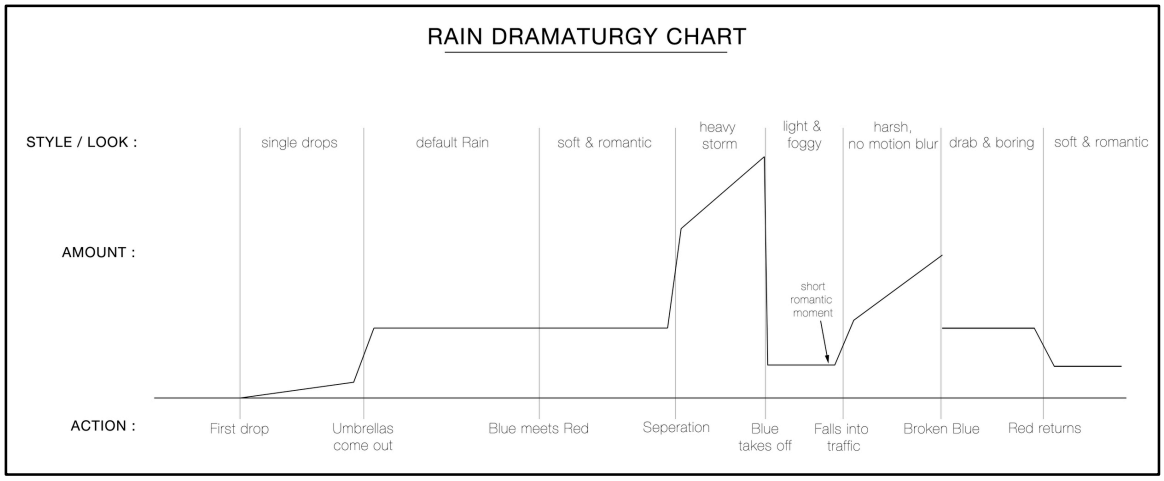

Figure 2.5 *The Blue Umbrella* rain dramaturgy chart (Unseld, 2013)

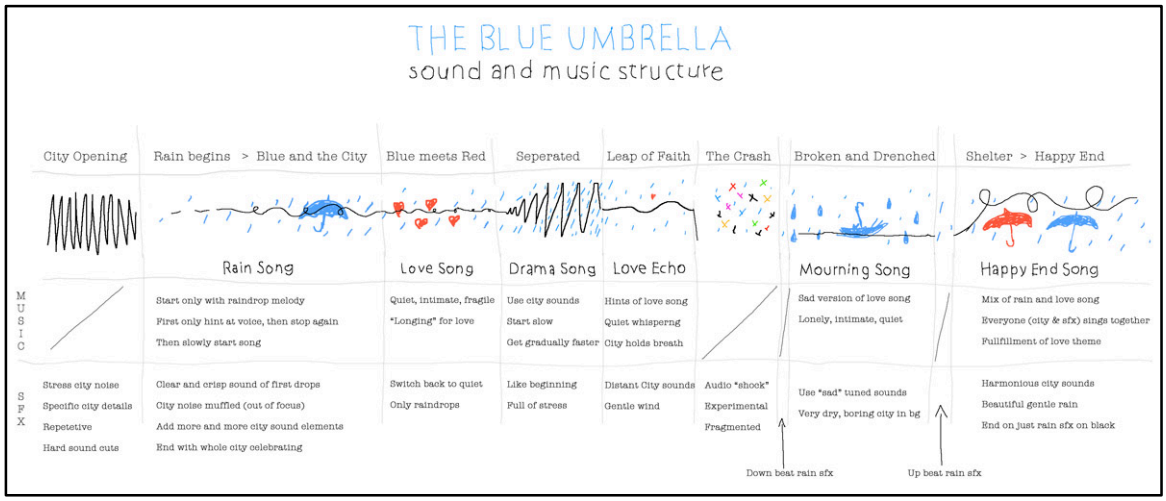

Figure 2.6 *The Blue Umbrella* sound and music structure chart (Unseld, 2013)

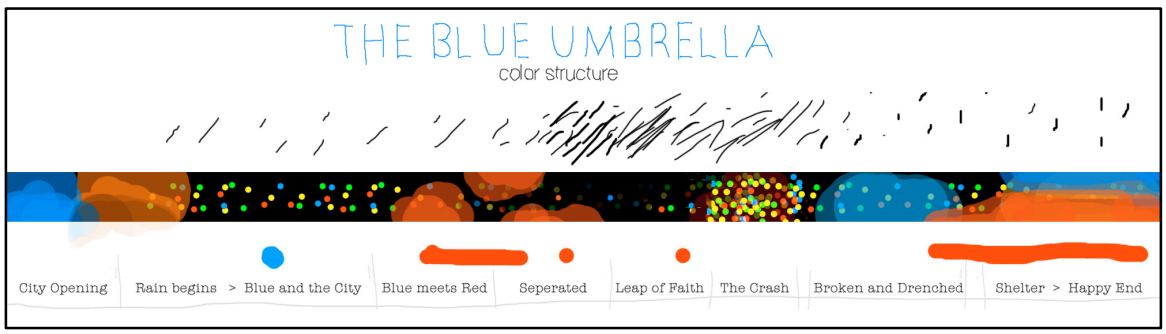

Figure 2.7 *The Blue Umbrella* colour structure chart (Unseld, 2013)

During the development of Pixar short film *The Blue Umbrella*, director Saschka Unseld used similar dramaturgical charts to map the successional properties of rainfall, sound and music, and colour (**Figures 2.5**, **2.6**, and **2.7** respectively). With these instructional charts, it is assumed that Unseld was able to communicate his structural vision to the various departments involved in the film's production, allowing them to retain a single narrative framework. What is particularly revealing about these pre-production charts, as well as those created for *Inside Out*, is the diversity of contributing elements to the storytelling. One does not necessarily expect elements such as colour, camera movement, or rain to function syntactically in such a meaningful way. Clothing in *Inside Out*[114] and weather in *The Good Dinosaur* are also given their own character arcs to support the vicissitudes of the respective stories and offer a more encompassing story world.[115]

The graphs and methods described above are created to help Pixar filmmakers retain an overview during production. Each method expresses the story as a whole, often segmented into acts or sequences, to show how production elements are organised and transform in harmony with each narrative stage. Notably, these graphs are designed to express specific elements of individual films rather than to draw comparisons between the filmmaking practices of many.

2.2.2 Graphic Representations of Narrative Form

Comparative mythologists and narratologists attempt to identify common features in the anatomies of a diverse range of stories in order to offer a singular abstract framework that describes many. Scholars in this field have, over the years, refined and redefined the supposedly requisite stages of a narrative, often demonstrating their models by placing and describing points along or around linear and circular diagrams. The following section demonstrates three narrative models popular with filmmakers. In order to bring film music analysis more in line with narrative theory, the analytical method proposed in the following chapter assumes linear and circular formats, each of which comes with its own benefits and

[114] Dobbie, N. 'Inside Out - Emotional Maturity' at https://www.youtube.com/watch? v=pp71BH0UlvE (6th Feb, 2016) (Accessed 26th March, 2017)

[115] Cinematographer Sharon Calahan explains that, 'These storm clouds are almost like a villain in [*The Good Dinosaur*].' Quoted in Zakrzewski, C., 'Pixar Studios Doubles Effects In Upcoming Film "The Good Dinosaur"' at https://techcrunch.com/2015/10/09/pixar-studios-doubles-effects-in-upcoming-film-the-good-dinosaur/ (9th October, 2015) (Accessed 1st June, 2020)

limitations.

Aristotle's seminal axiom on the shared formal properties of plays – that they require a beginning, a middle, and an end – has long been considered the starting point for narratologists and comparative mythologists, many of whom work on the presupposition that an infinite number of narrative texts can be described using a finite number of concepts. The nature of structural analysis, Tzvetan Todorov writes, will never be the description of a concrete work, but 'the manifestation of an abstract structure, merely one of its possible realizations'.[116] Todorov's own model, derived by examining multiple works of literature, attributes functions to Aristotle's tripartite schema in which an equilibrium is established (beginning), destabilised (middle), and re-established (end), providing the conflicting states necessary for a compelling narrative. Byron Almén argues that there is no reason that Todorov's initial situation ought to be stable, nor that stability need be established by the end, but agrees with the pivotal role played by disequilibrium in a narrative model.[117] Conflict is a requisite of drama and a foundation for screenwriters and storytellers alike.

Hollywood filmmakers regularly praise the influence of structuralists Joseph Campbell and Syd Field. George Lucas famously credits Joseph Campbell's *The Hero with a Thousand Faces*[118] as an inspiration during early revisions of the Star Wars saga and Marvel screenwriters Stephen McFeely and Christopher Markus credit their success to Syd Field's *Screenplay*.[119] Considered a screenwriting guru, Field describes story as a whole, explaining that 'Structure is what holds the story in place. It is the relationship between [the] parts that holds the entire screenplay, the whole, together.'[120] He is an advocate for three-act structure and presents his abstracted, idealised 'Paradigm' in a linear format as in **Figure 2.8**.

[116] Todorov, T., 'Structural Analysis of Narrative,' in *NOVEL: A Forum on Fiction*, Vol. 3: No. 1, trans. Weinstein, A. (Autumn, 1969), p.70.
[117] Almén, B., 'Narrative Archetypes in Music: A Semiotic Approach,' PhD thesis (Indiana University, 1998), p.70.
[118] Campbell, J., *The Hero with a Thousand Faces* (Novato: New World Library, 1949)
[119] Field, S., *Screenplay: The Foundations of Screenwriting* (New York: Dell Publishing, 1982)
[120] Ibid., p.9.

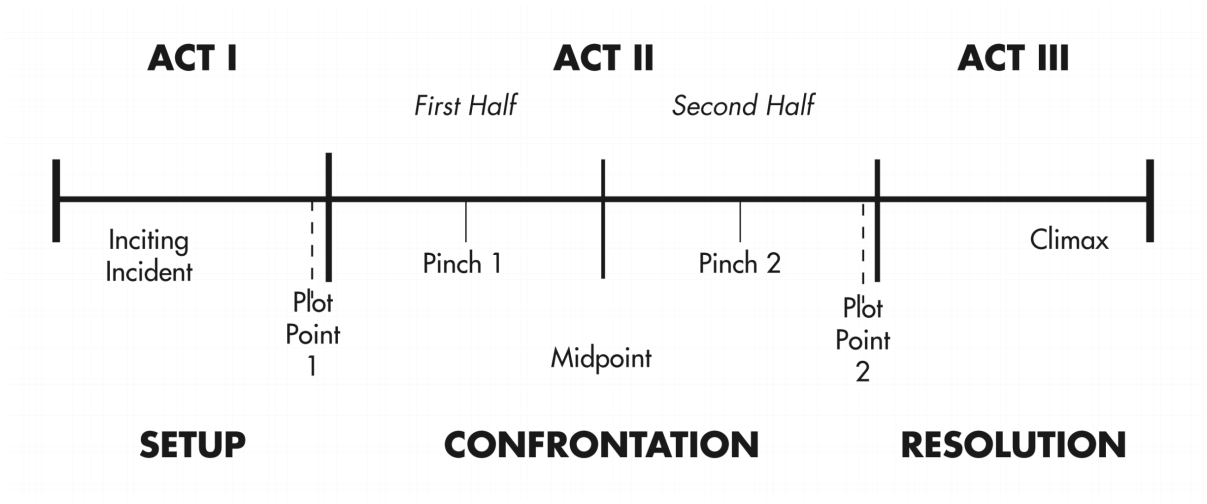

Figure 2.8 Syd Field's 'Paradigm' (Field, 1982)

Field refers to the *beginning* act as the 'setup', the *middle* as 'confrontation', and the *end* as the 'resolution'. At the end of the first and second acts, he advises that there be plot points: an incident or event that 'hooks into the story and spins it around in another direction.'[121] Field's model is typically laid out along an x-axis reading left to right with evenly spaced subdivisions for discrete narrative segments. The method has been endorsed by directors such as James Cameron, Alfonso Cuarón, and Judd Apatow. While it provides a general overview of narrative form, Field's model neglects to delineate several obvious subdivisions of the acts: namely the contrasting halves of Act 1, which I describe in Chapter 3.3.

Joseph Campbell's famous 'Monomyth', which predates Field's 'Paradigm' by 30 years, also offers a three-act form (each labelled 'departure', 'initiation' [sometimes broken into 'initiation' and 'descent'], and 'return') that is populated with 17 stages through which the hero must journey. The 'Monomyth' is typically depicted with time travelling around a circle in an anticlockwise direction, as in **Figure 2.9**. The model portrays Acts 1 and 3 as the 'Ordinary World' and Act 2 as the 'Special World' into which the hero much plunge and re-emerge.

[121] Ibid.

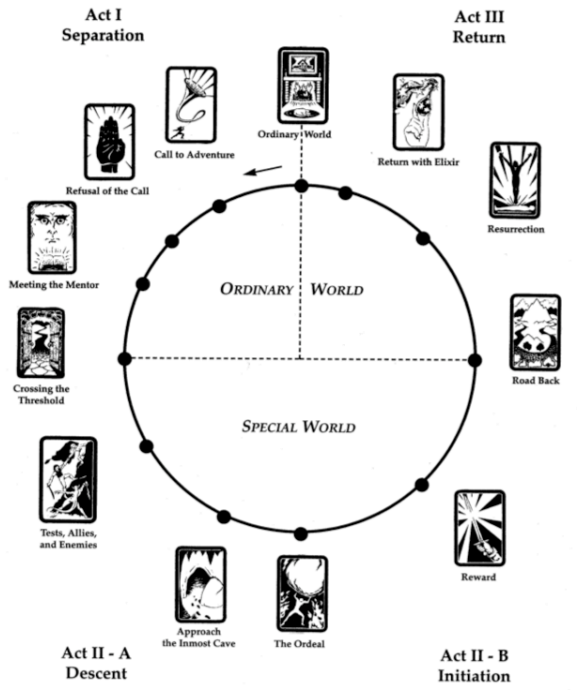

Figure 2.9 Joseph Campbell's 'Monomyth' (Campbell, 1949)

In 1992, while working for Disney, Christopher Vogler penned *The Writer's Journey*. In the book, Vogler consolidates Campbell's work into the twelve stages of what he calls the 'Hero's Journey'.[122] Vogler's diagrams take on both linear and circular forms (**Figures 2.10a** and **2.10b** respectively). In the latter example, time is depicted as moving in a more logical clockwise direction rather than the anticlockwise direction of Campbell's.

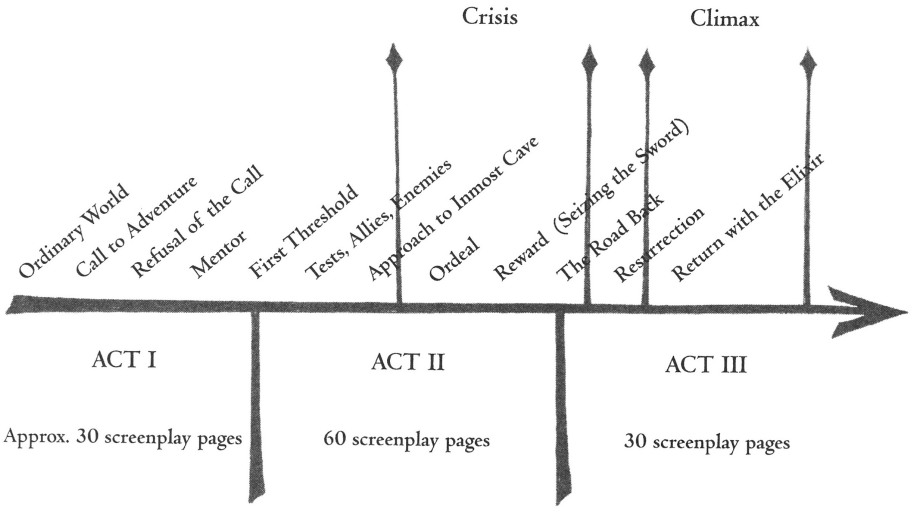

Figure 2.10a Christopher Vogler's 'Hero's Journey' (linear) (Vogler, 2007)

[122] Vogler, C., *The Writer's Journey: Mythic Structure for Writers*, 3rd edn. (Studio City, CA: Michael Wiese Productions, 2007)

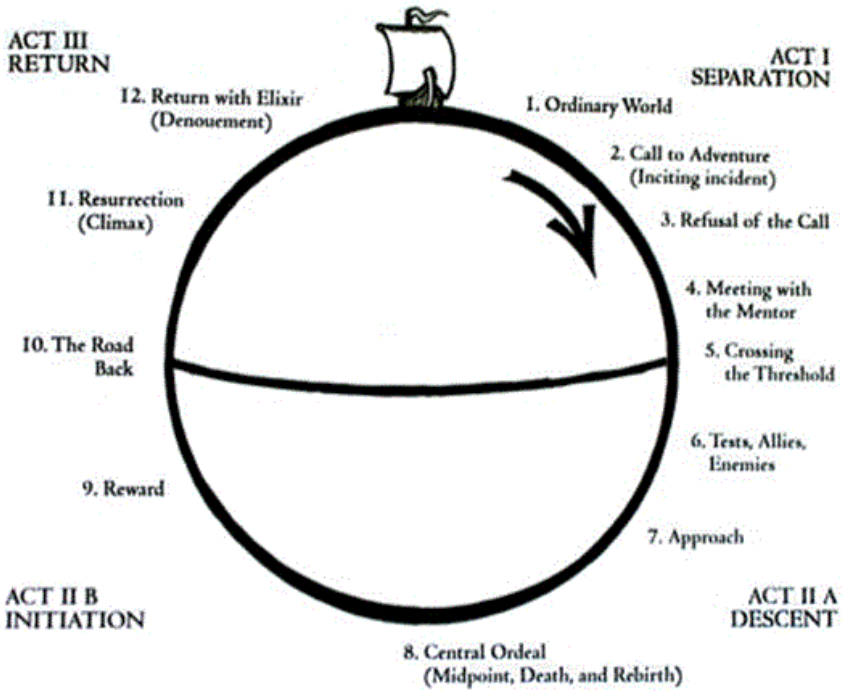

Figure 2.10b Christopher Vogler's 'Hero's Journey' (circular) (Vogler, 2007)

Vogler explains that there are two 'branches' to the end of the 'Hero's Journey': circular and open-ended.[123] A circular or 'closed' form returns the narrative to its starting point, often literally returning the protagonist to their starting location. An open-ended return allows the story to continue after the end of the telling, rather more like real-life than the 'fairy-tale ending' circular form. Vogler does not specifically assign the linear model to open-ended tales nor the circular to films that wrap up satisfyingly but one might infer from the diagrams that that is his intention.

While prescriptive with act durations (approx. 30 screenplay pages, 60 pages, 30 pages), Vogler allows the twelve 'necessary' narrative sequences to populate the acts within which they reside with less specificity than Field. He does not include nodes on the timeline to pinpoint the events.

Though printed in the same book, there are some discrepancies between Vogler's models that must be flagged. Firstly, the twelve stages are not numbered on the linear graph in the way that they are on the circular one. Secondly, the 'Ordeal', as it is named on the linear graph, is labelled 'Central Ordeal' (marked #8) on the circular. Thirdly, the circular

[123] Ibid., pp.216–8.

model divides Act 2 into two (A and B) while the linear model does not. The graph also suggests that all four acts are equal, whereas the *three* acts on the linear model are of seemingly equal durations. While it is clear that these depictions are for illustrative purposes only, it wrongly implies that the four-act form is not embedded within the three acts, but rather has different proportional form altogether. Vogler's linear three-act model would be clearer with the ¼ – ½ - ¼ proportions his annotations suggest. Lastly, the circular graph includes Fieldean terminology such as 'inciting incident' and 'midpoint' while the linear does not. The conflicting terminologies and proportions devalue the validity of the model and cause unnecessary confusion. In the methodology in Chapter 3, I am careful to retain consistency between the two graph types and terminologies. Consistency is essential for the corpus analyses that follow. The graphic models created later in this thesis will also use empirical proportions based on the timings of individual films or the average timings of a corpus of films rather than ambiguous, disproportionate, and inconsistent models.

A key issue I notice with each of the aforementioned models is that they begin with the protagonist in a place of need. According to Vogler's model, for example, the hero – or protagonist[124] – is introduced and begins their journey in the so-called Ordinary World. Vogler describes this starting point as 'boring and calm' and a place where 'the hero's problems and conflicts are already present'.[125] In Pixar films, a lengthy prefatorial sequence is included to explain how the protagonist arrived at this uninspiring time in their lives. By explaining how the protagonist comes to be in such circumstances, audiences are able to sympathise with the character from the outset. It is a simple structuring device that is not unique to Pixar. Other films use this prefatorial sequence to introduce antagonists. A popular example of this is *Star Wars: A New Hope* (George Lucas, 1977), which opens in the Special World of space as Darth Vader captures Princess Leia. It is only after fifteen minutes that Luke Skywalker (the protagonist of the trilogy) is introduced. The 'Hero's Journey' model does not account for this legendary opening sequence any more than it accounts

[124] I find Campbell and Vogler's use of the term 'hero' to be misleading and premature when discussing the main character's earlier moments of a film. For this reason, I prefer the less revealing 'protagonist' to describe a film's lead character.

[125] Vogler, C., *The Writer's Journey: Mythic Structure for Writers*, 3rd edn. (Studio City, CA: Michael Wiese Productions, 2007), p.87.

for the opening of most Pixar films. As a result, a large portion of the first act is overlooked. In the following chapter, I offer my own narrative model that accounts for these overlooked film passages.

2.2.3 Graphic Representations of Film Music

Difficulties easily arise when one attempts to depict the moving aural and visual elements of film into a static printed image. The following examples showcase several attempts over the years to do so, and the benefits and limitations of each.

Graphic representations or 'visual renditions' of music and film are not a new phenomenon.[126] In 1942, Sergei Eisenstein designed a graphic representation of a sequence of *Alexander Nevsky* (Sergei Eisenstein and Dmitri Vasilyev, 1938) to explain how the movement of music mirrors the movement of the audio-viewer's focus (**Figure 2.11**). In order to diagram what Eisenstein termed the 'vertical montage', one must 'visualize it as *two* lines [music and image], keeping in mind that each of these lines represents *a whole complex of a many-voiced scoring* [that] achieves its total effect through the *composite sensation of all the pieces as a whole*.'[127] Music and image are presented separately to emphasise the importance of the analysis of each line independently before exploring any congruity between them. Though this method offers data for only a small section of a longer film, it effectively draws attention to the coordination of events.

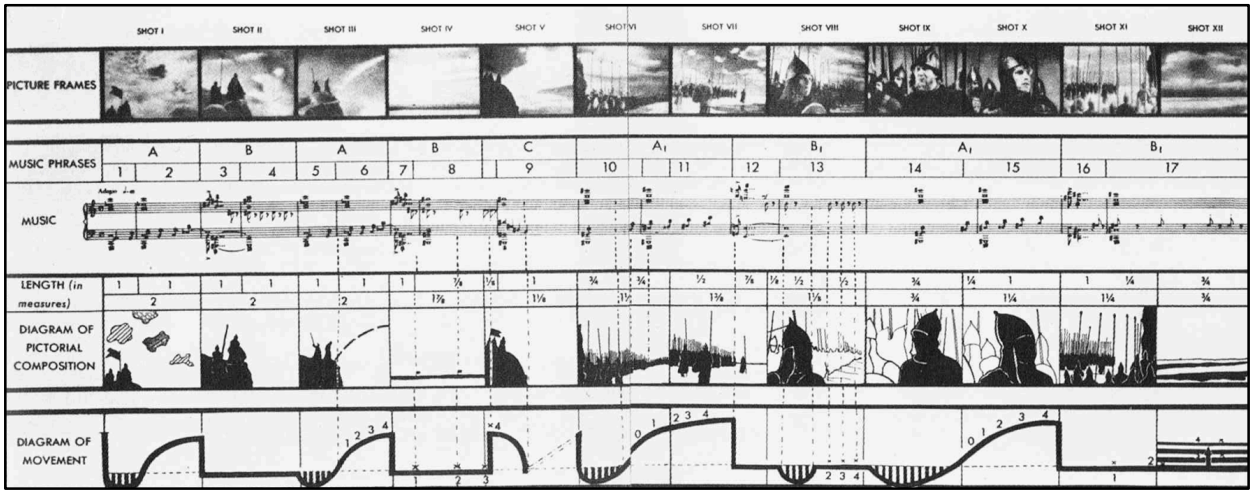

Figure 2.11 Sergei Eisenstein's 'Vertical Montage' (Eisenstein, 1942)

[126] 'Visual rendition' is a term introduced by Altman in 'Visual Representation of Film Sound' (2014).

[127] Eisenstein, S., *The Film Sense* trans. Lead, J. (New York: Harcourt, Brace, 1942), pp.77–8. (emphasis in original)

Pierre Schaeffer, only a few years after Eisenstein, offers a *four*-line graph (image, dialogue, sound effects, and music) of *Le ciel est à vous* (Jean Grémillon, 1944) that also lines up its elements along a timeline to facilitate vertical analysis (**Figure 2.12**).

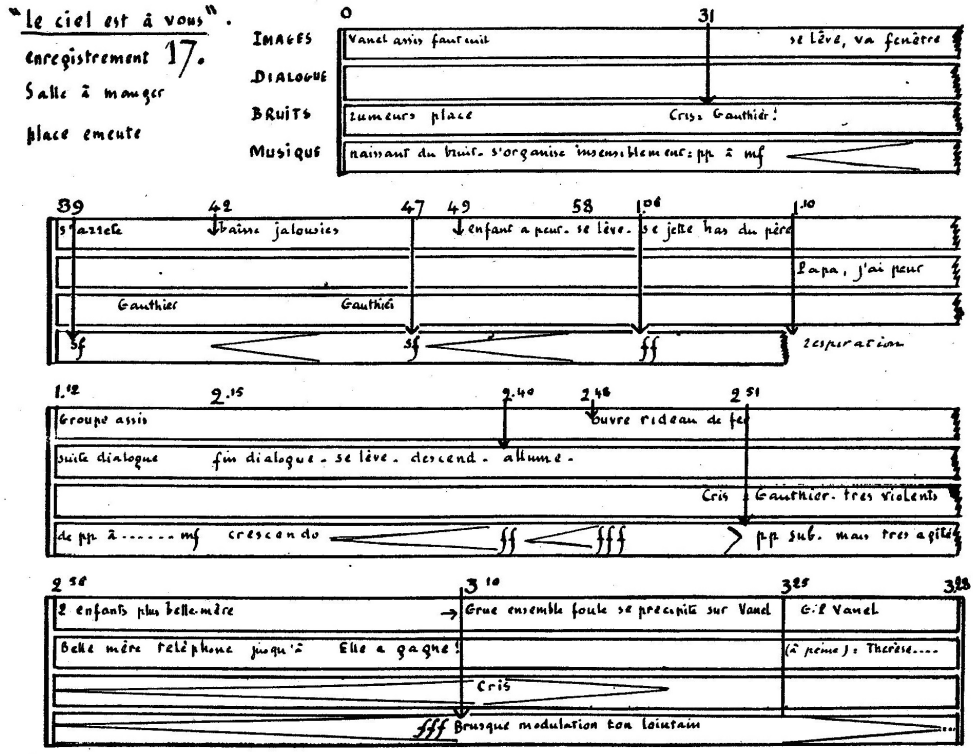

Figure 2.12 Pierre Schaeffer's graphic model (in Altman, 2014)

Whereas Eisenstein lines up the film's shots numerically, Schaeffer chronologises using elapsed time. Altman highlights some of the important similarities between Eisenstein and Schaeffer's diagrams:

> First, both authors base at least a portion of their analysis on privileged access to preproduction materials that don't necessarily match the finished film. Eisenstein's diagram is based not on careful listening, but on Prokofiev's score. Similarly, Schaeffer's graph is not a record of careful viewing and listening, but a reproduction of Grémillon's own outline, produced "simultaneously with the scenario and before the actual sound mix" (Schaeffer 1946, 46).[128]

[128] Altman, R., 'Visual Representation of Film Sound as an Analytical Tool,' in Neumeyer, D., (ed.) *The Oxford Handbook of Film Music Studies* (Oxford University Press, 2014), p.77.

Basing film music analyses and reviews, as many have, on printed or manuscript copies of the original score is, particularly in recent years, hazardous. I would argue that Frank Lehman's suggestion that 'One of the first challenges that analysts of screen music invariably run up against is the absence of easily available printed score,' is misinformed.[129] Not only are film scores regularly augmented with additional sounds and manipulations after the recording session (for which the notated score was prepared) has taken place,[130] but the recording of stems allows for music to change dramatically right up until and during the dubbing stage.[131]

Roger Manvell and John Huntley's graphic model (**Figure 2.13**), published a decade after Eisenstein, is less selective in its choice of presented materials as it does not limit the information to the minimum required to make a direct, analytical point, thus instilling readers with a wider variety of information with which to make deductions, though arguably too vague or cluttered to make any specific observations. This approach provides no information about the duration of the scene in question or its role in the greater narrative.

[129] Lehman, F., 'Methods and Challenges of Analyzing Screen Media,' in Mera, M., Sadoff, R. and Winters, B. (eds.) *The Routledge Companion to Screen Music and Sound* (Oxon: Routledge, 2017), p.499.

[130] For an example of this, see composer Steven Price's manipulation of the orchestral recording for *Gravity* (Alfonso Cuarón, 2013) in Mera, M., 'Towards 3-D Sound: Spatial Presence and the Space Vacuum,' in Greene, L. and Kulezic-Wilson, D. (eds.) *The Palgrave Handbook of Sound Design and Music in Screen Media* (London: Palgrave Macmillan, 2016), pp.91–112.

[131] See composer Javier Navarrete's experience and scoring approach on *Wrath of the Titans* (Jonathan Liebesman, 2012) in Hexel, V., 'Understanding Contextual Agents and Their Impact on Recent Hollywood Film Music Practice,' PhD thesis (London: Royal College of Music, 2014), p.95.

I

ACTION L.S. Approach to Dock Square through a covered way. Father Tom catches up with Shell, who is wrestling with a shoe that has come off in the snow.

DIALOGUE *Shell:* "Father Tom, me shoe came off
Father Tom: "Where is she?"
Shell: "The lace busted; she went on."
Father Tom: "Which way?"
Shell: "I couldn't keep up with her, but we'll get her now."

EFFECTS

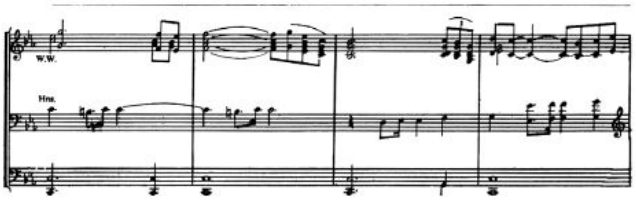

Figure 2.13 Roger Manvell and John Huntley's graphic model (in Altman, 2014)

Two noteworthy aspects of Claudia Gorbman's later representation (**Figure 2.14**), Altman points out, are that 1) her musical notation is a transcription from careful listening to the music that actually occurs in the final film (as opposed to the original score), and 2) that instead of squeezing the music to fit the images, Gorbman follows the standard musical practice of making each system the same length with the scene frames inserted where they occur *in relation to the music*, rather than vice versa.[132] While this latter point means that sound is foregrounded over image, which arguably offers benefits to music scholars, the diagram gives a false impression of the elapsed time of the sequence.

[132] Altman, R., 'Visual Representation of Film Sound as an Analytical Tool,' in Neumeyer, D., (ed.) *The Oxford Handbook of Film Music Studies* (Oxford University Press, 2014), pp.83–4.

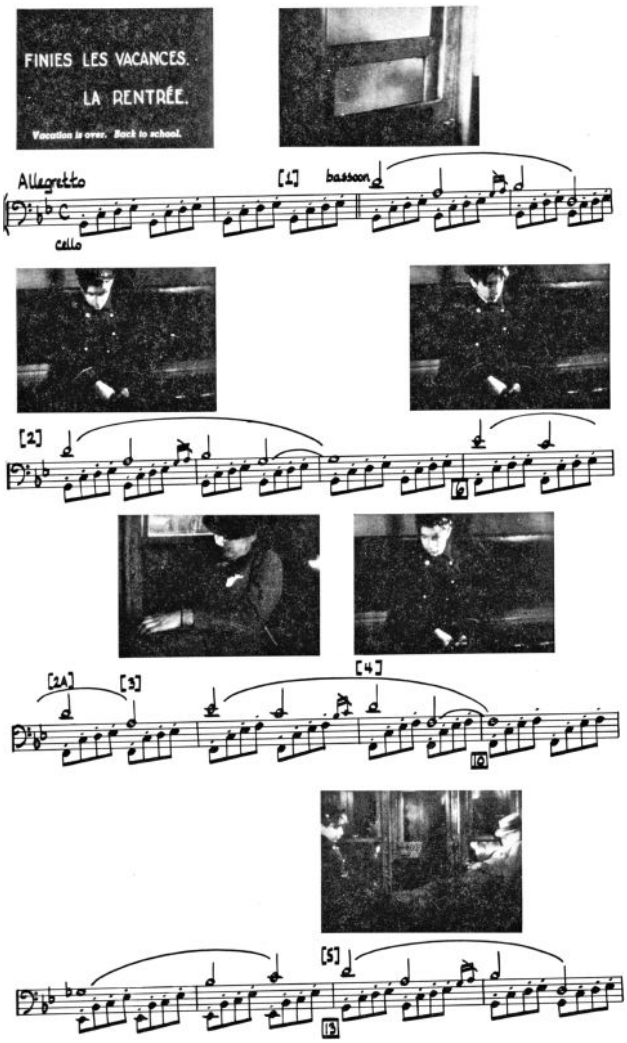

Figure 2.14 Claudia Gorbman's graphic model (in Altman, 2014)

Using a subjectively determined volume scale, Altman *et al*. (2000) display the relationship between various elements of the soundtrack (a distinction from the 'imagetrack') in a single diagram (seen in **Figure 2.15**). This approach distinguishes and tracks specific elements of the so-called *mise-en-bande* and 'offers a microcosmic representation of the basic problem that Hollywood grappled with throughout its first decade of synchronized sound: which should be privileged, intelligibility or realism?'[133] Altman *et al*. propose a new notation system for mapping the 'conflict or coordination' of soundtrack components. This method still requires individual elements to be classified as music, sound, or dialogue which, in modern films, can be difficult to determine with any accuracy or reliance. It is importantly

[133] Ibid., p.92.

noted that this data has been collected by 'careful listening' and that measurements are 'necessarily subjective and imprecise.'[134] Unorthodoxly, time is depicted travelling from the top of the page to the bottom, presumably for the purpose of displaying more information on a single A4 page. Like the anticlockwise direction in Campbell's graphs, this vertical depiction of elapsed time can be disorienting. However, these charts helpfully provide timing information, allowing the sections to be located within the greater film: a consideration that other models neglect.

Altman makes the observation that black-and-white diagrams, useful as they have been, 'pale in comparison to the multicolor graphs easily produced on a computer screen or printed by even the most inexpensive of today's printers.'[135] He laments the current 'unavoidable' limitations set by many publication formats on available graphing strategies.

More modern approaches seem not only to be making the most of colour-coding in order to get more information into their diagrams without them becoming visually chaotic, but they are also taking entire films into account, allowing the reader to appreciate the music's location and saturation (i.e., the quantity of music) within the score. Two examples that I will draw attention to are Brian Jarvis' 'Narrative/Dramatic Structure Diagrams' and Santiago Barx's 'Score Maps'.

[134] Altman, R., 'Visual Representation of Film Sound as an Analytical Tool,' in Neumeyer, D., (ed.) *The Oxford Handbook of Film Music Studies* (Oxford University Press, 2014), p.92.
[135] Ibid., p.94.

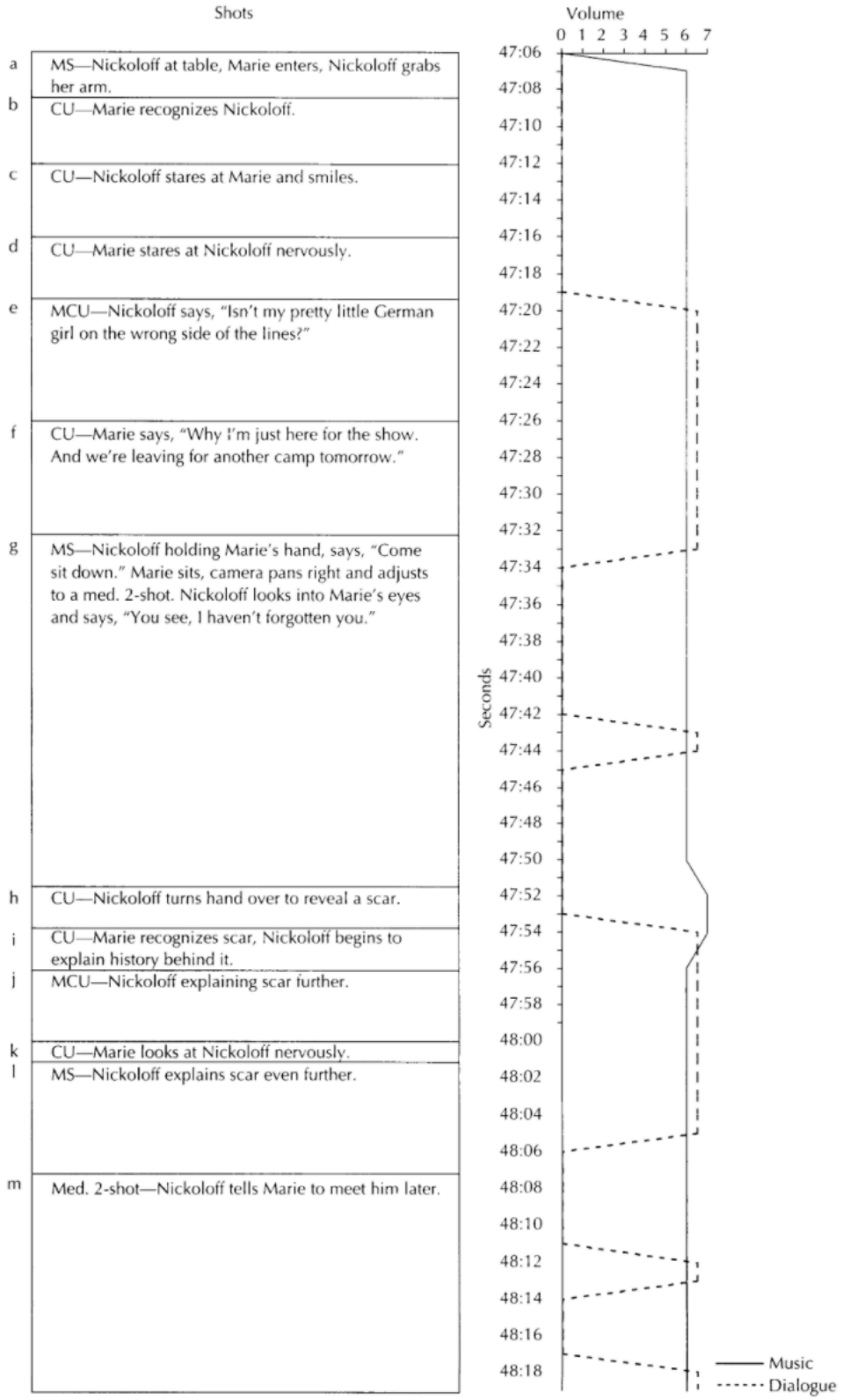

Figure 2.15 Rick Altman *et al*'s 'Multiplane Sound System' (Altman, 2000)

Brian Jarvis' film score visualisations, which he refers to as 'Narrative/Dramatic Structure Diagrams', are designed to expose deeper-level plot readings of the soundtracks of three Coen brothers' films – all of which are scored by Carter Burwell. These models can be viewed quickly – as a whole – and facilitate large-scale film music analysis across entire works inclusive of musical silences. Jarvis aims to demonstrate how large-scale interpretations of the three film scores offer new insights into the films' perceived narratives and introduces his method with an analysis of Burwell's score and large-scale planning for *Fargo* (Joel Coen and Ethan Coen [uncredited], 1996). **Figure 2.16** shows the interplay of music and the plot's so-called 'Super Kernels'.[136] The 'Narrative/Dramatic Structure Diagram' itself is highly detailed, offering a large amount of narrative, visual, and musical information. Music cues can be easily located and contextualised, aided by the inclusion of screenshots from the film. However, it gives a false impression of film time, with an unequal distance between minutes and the numbers themselves floating vaguely above the timelines. This skews the reader's impression of the proportions and durations of the music cues. The depiction of Freytag's Pyramids, rising from the inciting incidents, peaking at the climaxes, and descending to the resolutions, implies steadily rising tensions throughout the film. I argue that these implied crescendos are misleading. Plotlines are vicissitudinous, fluctuating continually between tension and release.

While useful for introducing and developing the analytical method, the Coen–Burwell case studies do not attempt to suggest any kind of uniting features or common strategies of Burwell's scoring practice. In fact, they strive to show three independent film scores. Of course, Jarvis does not claim to present evidence of similarities in Burwell's scores so cannot be criticised for failing to do so. However, his methodology certainly proves effective for capturing an overview of music cues and events across complete filmic structures. With the acknowledgement that his thesis provides merely 'a useful starting point' for future researchers in this emerging field of study, Jarvis hopes that his large-scale methodology 'will be used by others to establish patterns and paradigms of musical usage in a diverse body of films.'[137] It is Jarvis' closing plea upon which this thesis hopes to build.

[136] The term Jarvis has given to the key events in Freytag's model of dramatic structure (the inciting incident, climax/turning point, and resolution).

[137] Jarvis, B. E., 'Analyzing Film Music Across the Complete Filmic Structure: Three Coen and Burwell Collaborations,' PhD thesis (Florida State University, 2015), p.175.

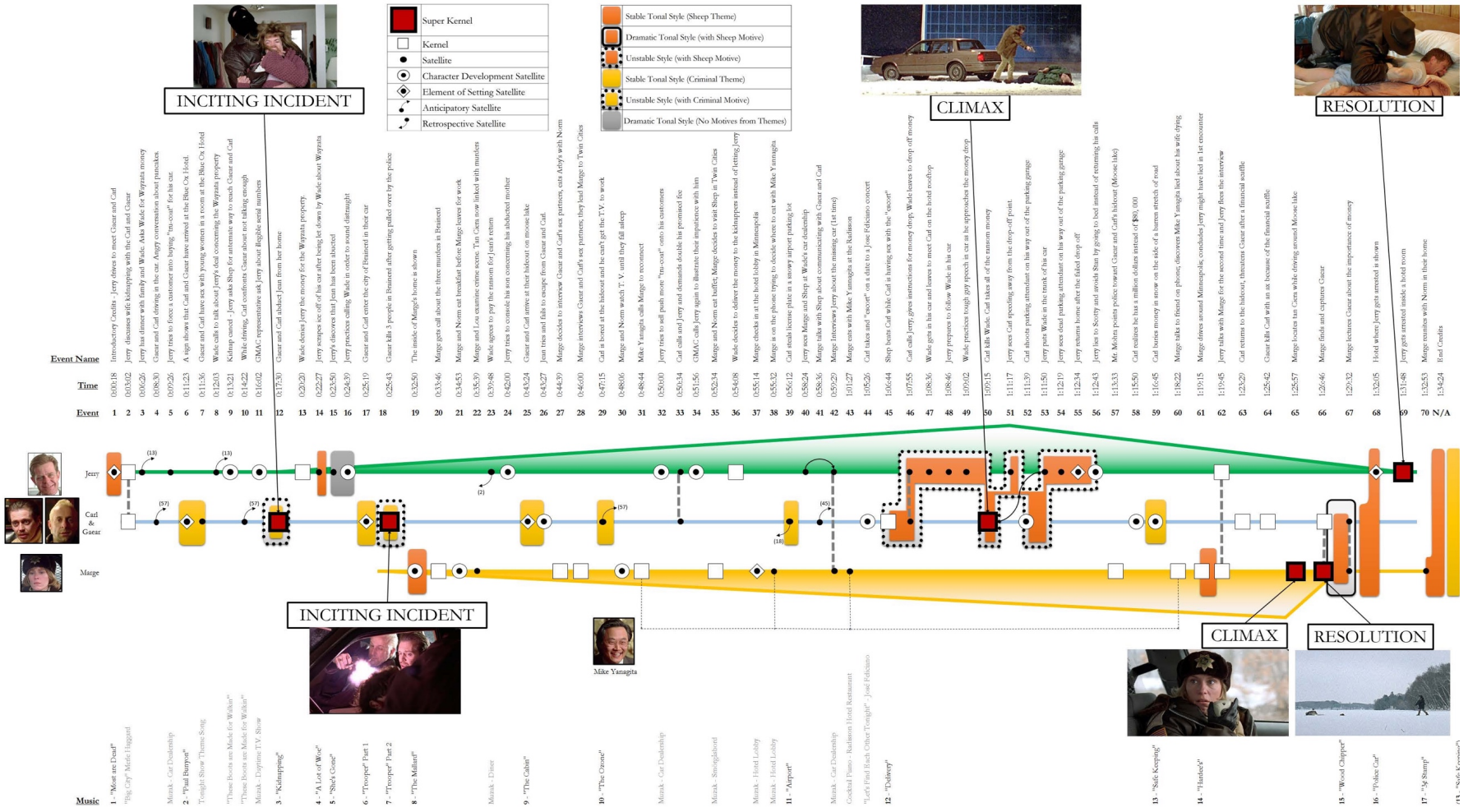

Figure 2.16 Brian Jarvis' 'Narrative/Dramatic Structure Diagram' (Jarvis, 2015)

More recently, Santiago Barx has created what he calls 'Score Maps' to assess music placement and thematic distribution across entire Hollywood films. **Figure 2.17** is an example of the *score map* for *Back to the Future* (Robert Zemeckis, 1985).[138] Using the map, one is able to trace the music distribution, tonal design, perceived energy levels, and placement of main themes alongside the key plot events and locations specific to the film. Red markings represent orchestral underscore and green, pre-existing songs.

The so-called 'energy levels' that dictate the height of the cues' peaks on the graph (using a scale from 1 to 5) are presumably determined based on Barx's perception of the timbral and rhythmic properties of the music. I find the lack of clarity here to be problematic. High energy level peaks, as they are presented on the Score Map, may be perceived as a measure of volume, orchestral density, or assumed salience within the soundtrack. Without clarifying the definition of the unclear and ambiguous term, the measurement of energy levels is a misleading parameter that could lead to a skewed interpretation of the score.

In order to contain the graphics to one page so as to view the entire film and soundtrack as a whole, Barx has broken the timeline into six twenty-minute 'staves' and has based his observations on the film in approximate thirds, suggesting the first third of the film is roughly 50% saturated with music while the second is ~25% saturated and the last third ~75% scored.[139] This loose subdivision into thirds does not pinpoint the act structure accurately but presumes an even, tripartite shape to the film. The Score Map gives the impression of six equal parts and his reading suggests three equal parts. Neither map nor reading take into account the act structure which, as will be demonstrated later in this thesis, rarely divides so evenly. Kristin Thompson's detailed case study of *Back to the Future* does claim that its narrative divides into four roughly-equal large-scale portions, but this does not justify an even six-line, three-part reading of the score.[140] A narratological breakdown of the film (three-act or otherwise) would suggest more useful points to include line breaks.

[138] Barx has also prepared Score Maps for *Jurassic Park* (1993) and *Atlantis: The Lost Empire* (2001). Found at http://www.santiagobarx.com/scoremaps/ (Accessed 7th October, 2018)

[139] Barx shared his findings with me during a conversation over Google Hangout on 28th September, 2017.

[140] Thompson, K., *Storytelling in the New Hollywood: Understanding Classical Narrative Technique* (Cambridge, MA: Harvard University Press, 1999), pp.77–102.

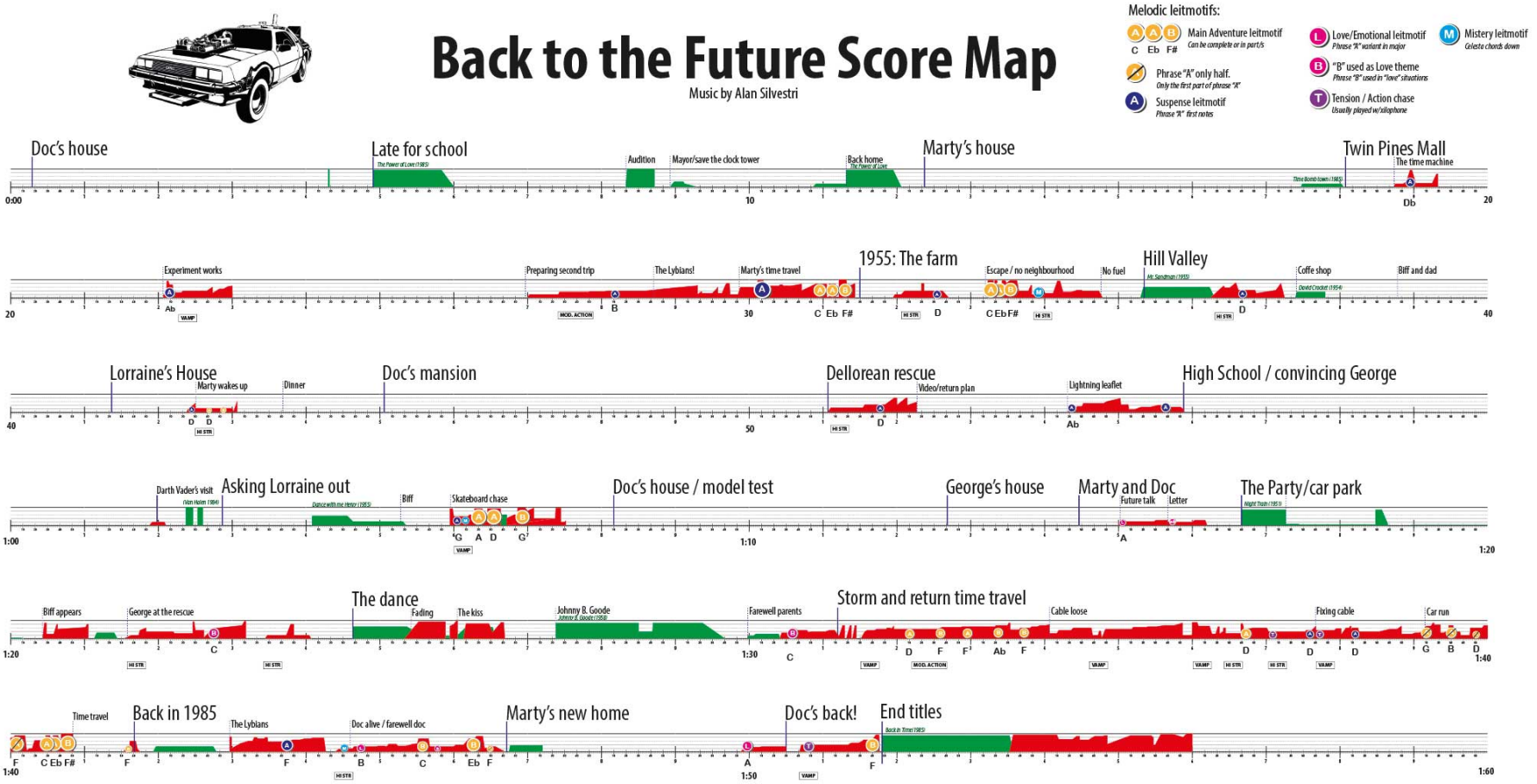

Figure 2.17 Santiago Barx's 'Score Map' (Available at santiagobarx.com/scoremaps)

Barx's model might benefit by taking a similar approach employed by Ron Rodman to show the deployment of musical cues across acts in an episode of television show *The Rifleman* entitled 'Outlaw's Inheritance' (Season 1, Episode 38). The show is broken up into scenes and acts (in this case, labelled 'exposition', 'continuation', and 'denouement') and, as **Figure 2.18** shows, music cues (shaded in the diagram) largely serve as transitions between scenes. Rodman's diagram displays the proportional duration of each music cue in relation to the timings of the acts and episode as a whole rather than to plot events specific to only this episode (though specific scenes are included).[141]

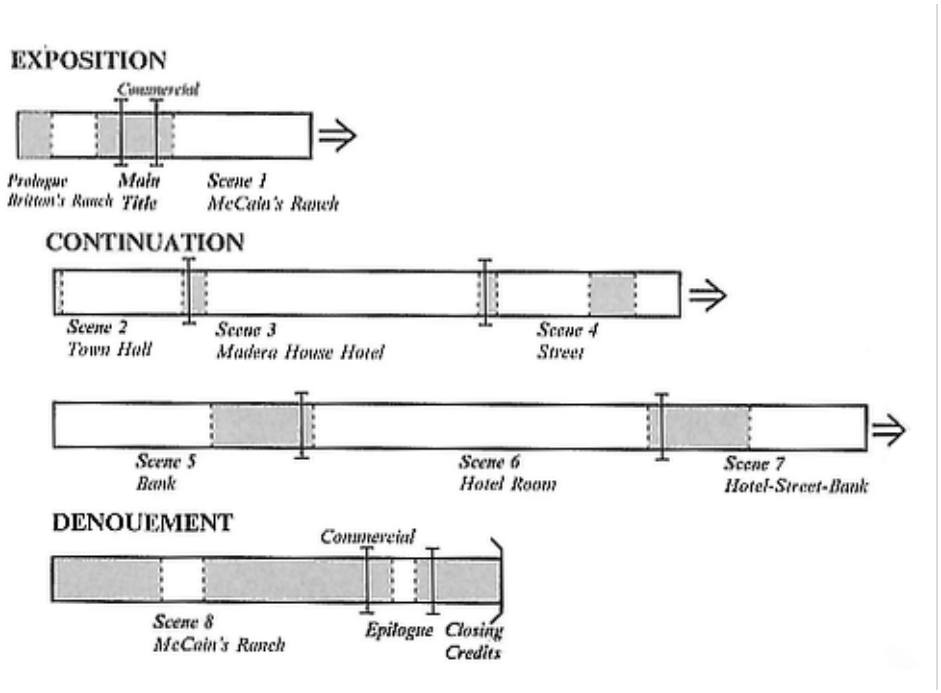

Figure 2.18 Ron Rodman's graphic model (Rodman, 2010)

The most significant limitation of these analytical models is that they are all designed to showcase elements of single films; none of the models demonstrate how they might be used to compare the music of several films. None of these methods are intended to be nor would be particularly suitable for a corpus analysis, customised as they each are for the specific requirements of individual films and scores.

[141] Rodman, R., *Tuning In: American Narrative Television Music* (Oxford University Press, Inc., 2010), p.154.

2.3 Conclusion

This chapter counters claims made by Stilwell and others that narrative film music does not come with preconceived formal expectations and that each score is unique. I contend that, as film music is constructed around a narrative framework that is generally consistent between films, its formal logic must be inherently, at some level, predictable. As such, it is my belief that the discussion of film music form should have a basis in narrative theory rather than being restricted by an assumed musical logic. To paraphrase a quote of Oscar Levant's from earlier in the chapter, the analyst should *consider film music's suitability to the narrative it adorns* rather than as its own entity. Furthermore, the ubiquity of a limited number of narrative forms implies a limited number of film score forms. The following chapters provide tools and observations to test and support this implication.

In addition to the narratological contextualisation of film music, this chapter asserts that music cues are best read in the context of the entire music track inclusive of musical silences and seemingly unimportant cues. At local and global levels, film music is framed (in both senses of the word) by silence and vice versa. By ignoring the sonic environment in which film music operates, the impact and meaning of individual cues can be lost.

The second half of this chapter is dedicated to critiques of various methods for graphically representing the synchronisation of a film and its constituents. Though the graphic methods presented and reviewed in this chapter each offer unique approaches to the depiction of synchronisation in film music, none are pitched or designed as tools to facilitate a film corpus analysis. This is a lacuna that the methodology of the following pages hopes to fill.

3

METHODOLOGY

When we turn from this image of the orchestral score to that of the audio-visual score, we find it necessary to add a new part to the instrumental parts: this new part is a "staff" of visuals…

– Sergei Eisenstein

3.1 Introduction

Graphic representations of large-scale structures, Mark Evan Bonds explains, allow us to 'take in the form of a work at a glance – as a whole, as a Gestalt – diagrams by their very nature offer perspectives that verbal accounts alone cannot.'[142] Capturing a snapshot of a film's narrative trajectory with its moving and overlapping components provides analysts the chance to read and interpret the coordination and patterns of the various parts.

This chapter proposes a new method for graphically representing the location and duration of the component parts of film music as they relate to the entire film. The Film Music Organisation diagram to which I refer foregrounds the deployment of specific features of a score while preserving their position within the greater soundtrack and temporal alignment with the plot. Events may then be properly located and discussed within the context of the film.

The Film Music Organisation method is designed to test three hypotheses. Firstly, that *the formal properties of film music, at one or several levels, relate to those of narrative form*. In order to test this assumption, the recurrence of musical themes and other features must be read in synchronisation with visual and plot functions. Secondly, this thesis assumes that *music cues, musical silences, and musical events are relative to and reliant upon one another* in the same way that acts and scenes are dependent on one another for meaning and context. Appreciating this syntax requires an understanding of the hierarchy of scenes, sequences, and musical components. This information can only be determined with access to the entire film and a theoretical understanding of story form. Scores must be read at the level of and in conjunction with the entire film. Thirdly, a working hypothesis based on the

[142] Bonds, M. E., 'The Spatial Representation of Musical Form,' in *The Journal of Musicology*, Vol. 27: Iss. 3 (Summer 2010), p.270.

observations of many is that *narrative films share similar structural properties irrespective of their duration*. The following method enables structural comparisons by utilising proportional timings rather than the conventional hh:mm:ss time format.

The chapter is presented in three sections. Firstly, I introduce the two design formats for the proposed Film Music Organisation (FMO) diagrams and explain the logistics of collecting and reading the data displayed upon each of them. I also consider the benefits and limitations of each graph type for the purpose of comparison in a corpus analysis. Secondly, I propose a revised structural template for narrative analysis based on my own observations of the Pixar canon that challenges traditional narrative models as well as revising and refining conventional terminologies and sequence descriptions. Lastly, I introduce a customised music notation system that vertically aligns the thematic fragments of a film score in order to more clearly express sameness and variation across numerous statements.

3.2 The Film Music Organisation Method

3.2.1 Barcode and Clock Diagrams

Recognising the limitations of many of the graphic models reviewed in Chapter 2, I have designed my own method for mapping data onto a film's timeline in order to better demonstrate the relationship between narrative structure and the formal organisation of film music. As a way of drawing film music theory more in line with the work of comparative mythologists, the FMO diagram can be presented in two formats: linear and circular, which I refer to hereafter as *barcode* and *clock* respectively. As will be demonstrated, the barcode diagrams (the framework of which can be seen in **Figure 3.1a**) prove to be more effective for comparing multiple films, while the clock diagrams (**Figure 3.1b**) are superior for perceiving proportionality within individual films.

All data is collected through careful listening, transcription, and tabulation before it is processed into a diagram – the logistics of which will be elaborated on later in this chapter. Various readings are taken from the films and scores, including the in/out timings of music cues, narrative sequences, and prominent musical features, as well as details about the instrumentation of each cue, the diegetic level at which the music functions, the tonal centre

(where relevant), and a description of the onscreen action. The timecode of each event is converted into a percentage of the film's total runtime so that durations may be expressed as proportional parts of a whole, excluding precursory corporate logos or opening and closing credits as they are not part of the narrative trajectory of the film.[143] Conventionally, film music analyses will refer to cues with DVD timestamps (e.g., 1:21:50 or 81'50"). This format is useful in reference to the individual film, but does not support a comparative analysis. DVD timestamps will also include the corporate logos and theatrical ratings board, etc. that occur before a film. While these additional seconds or minutes may not make a great deal of difference in the discussion of a feature film, it can make up a large portion of a short film. The reference time will then give a skewed impression of when an event occurs. Using percentages to represent the temporal position of events (rather than the hh:mm:ss format), while somewhat impractical for locating specific clips, encourages the discovery of commonalities between texts. For example, '*Event x happens at 00:03:45 in this short film, and at 01:40:35 in this feature film*' is not as illuminating as '*Event x happens 72% of the way through both of these films*'. This method holds true for interpretations of duration. For example, '*Act 1 lasts for 2 minutes in short film x and 32 minutes in feature film y*' does not draw comparison as directly as '*Act 1 makes up 25% of short film x and 27% of feature film y*'. The latter example exposes a proportional commonality between the texts that the former cannot. Graphic realisations emphasise these related phenomena and help to reveal similar recurring patterns in the data that might otherwise go unnoticed. Throughout this thesis, I employ DVD timestamps for referencing specific events in individual films and percentage timings for those that occur in multiple films.

The key difference between the clock and barcode formats is the way in which the passage of time is presented. **Figure 3.1a** shows the framework of the barcode design, which depicts a film's duration as a horizontal line with time travelling from the leftmost edge to the right. The diagram conforms to the same horizontal layout as many of the existing dramaturgy charts reviewed in Chapter 2. As it occupies a small amount of space, many diagrams can

[143] With examples from the *Harry Potter* franchise, James Buhler demonstrates how corporate logos and opening credits are, in some cases, incorporated into films' opening sequences in Buhler, J., 'Branding the Franchise: Music, Opening Credits, and the (Corporate) Myth of Origin,' in Meyer, S. C. (ed.) *Music in Epic Film: Listening to Spectacle* (New York: Routledge, 2017), pp.3–26.

be vertically aligned and presented on a single page, which makes for clear, comparative demonstrations of multiple films.

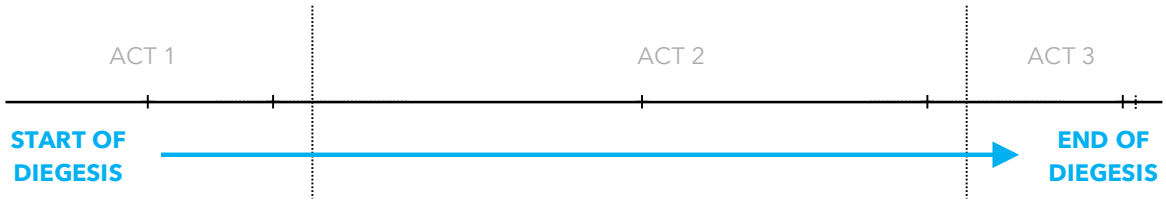

Figure 3.1a Direction of film time on a barcode diagram

Figure 3.1b shows the clock design: a circular model that treats 12 o'clock, i.e., the topmost point of the circle, as both the beginning and the end of the film with time elapsing in a clockwise direction. The clock design imitates the design of, for example, Christopher Vogler's 'Hero's Journey'. A novel advantage of the clock diagrams is that it is easier to estimate the internal proportions of individual films for the points on a circle are more accurately perceived than those on a straight line. It is for this reason that pie charts are generally used to display percentages or proportional data. The 'midpoint' mark of each graph, for example, is located a little over halfway at 55%. It is difficult to make an accurate measure of this from **Figure 3.1a** because there is no point of reference for halfway. However, in **Figure 3.1b**, the base of the graph sits at the halfway mark and it is clear that the 'midpoint' node occurs a short way past this.

Figures 3.2a and **3.2b** provide annotated examples of the barcode and clock designs with the addition of musical data. In both cases, the film's timeline is the central solid black line running through the middle with small tangential nodes indicating the subdivisions of narrative sequences, which will be named and explained later in this chapter.[144] On the barcode diagram, acts are demarcated with longer, vertical dotted lines that intersect the timeline. The clock diagram indicates acts with a dotted outer circle that aligns with corresponding inner-circle nodes.[145]

[144] In the context of this thesis, the term 'narrative sequence' refers to a subsection of a film's story according to a certain set of characteristics and internal events. For more, see Chapter 3.3.
[145] The reason for this is merely one of software limitations.

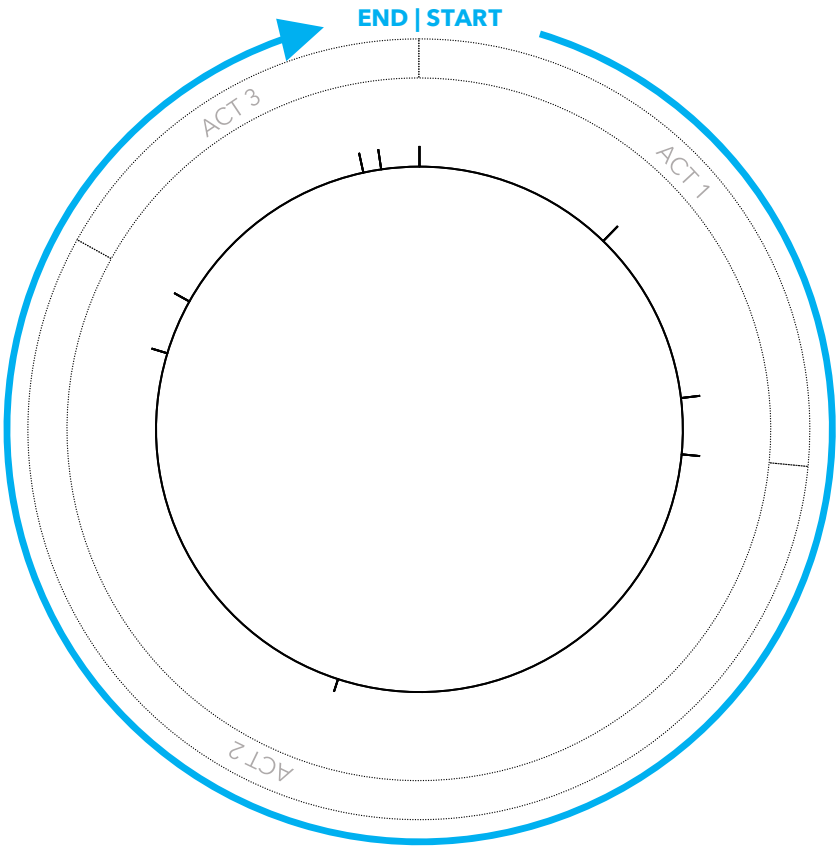

Figure 3.1b Direction of film time on a clock diagram

Music cues are placed below (barcode) or inside (clock) the timeline as grey blocks, the widths of which refer to the proportional duration of the event. Diegetic music is represented by a lighter grey and musical silences are left as white gaps. I refer to the underside or inner circle of the diagrams as the Cue Distribution line as it displays information only about the cues themselves. Any themes, ostinatos, or other musical components that require analytical foregrounding sit atop the timeline or populate the outer ring. Though blue is used in these examples, several colours may be used to display multiple musical features or variants of one. The colour of these data points will be contingent on the analytical purpose and will be explained in a key or the accompanying text where necessary. I refer to this upper/outer part as the Thematic Distribution line because, for the most part, it will be used to foreground the position of themes. It may be renamed according to its analytical function.

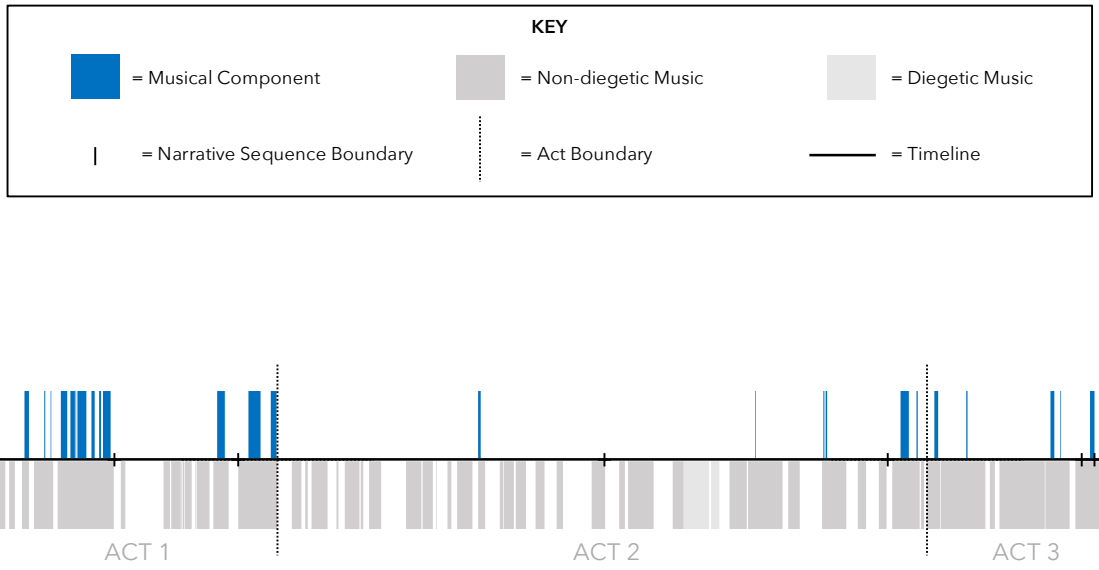

Figure 3.2a FMO barcode diagram example

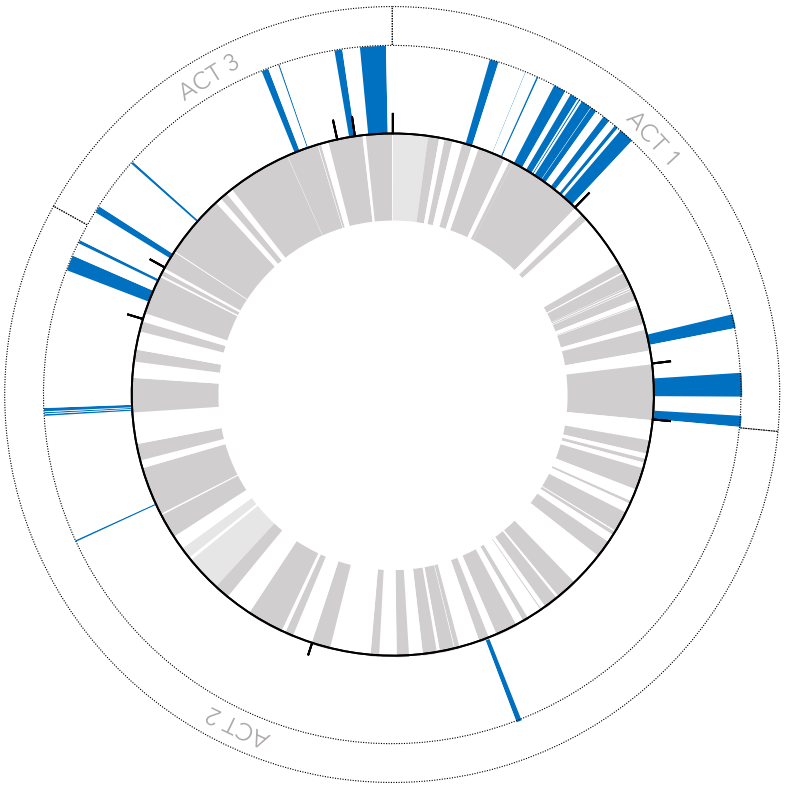

Figure 3.2b FMO clock diagram example

3.2.2 Comparing Texts

While the clock diagram offers benefits for reading individual films, the barcode proves to be the most effective of the two formats for demonstrating proportional differences and similarities between multiple texts. Due to the fixed width of the barcode diagram (six inches so as to fit within the margins of the page), films of significantly different durations can be aligned and more accurately compared. **Figure 3.3** shows the barcode diagrams of an 89-minute feature and a 5-minute short film stacked. It is immediately apparent that the short film (below) has a slightly lengthier opening act to the feature film (33% versus 26.5%)[146] and that both films have identically proportioned third acts (21.8% each) and similar thematic placement both before and after this act divide.[147] One also notices that the first thematic statement of *Coco* (in green) occurs early in Act 1, whereas the first of *Lava* (in blue) does not occur until towards the end of the act. The reasons for and implications of this are discussed in Chapter 5.4. These observations, as basic as they seem, offer fascinating insights into the way that films and film scores are often organised around common structural strategies.

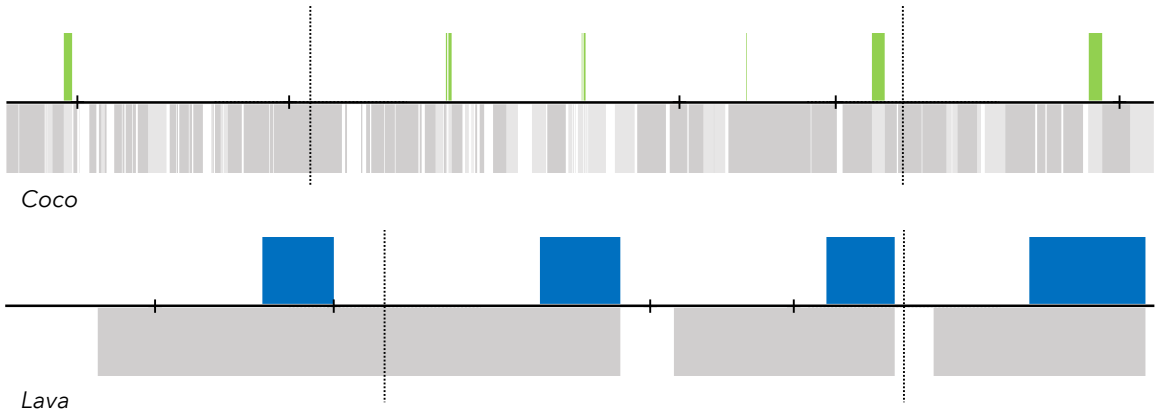

Figure 3.3 Vertically aligned FMO barcode diagrams of 88'44" *Coco* (above) and 5'01" *Lava* (below)

[146] 'Lengthier' refers to its share of the whole rather than its duration.
[147] *Coco*'s third act is actually 21.85% and *Lava*'s is 21.82%. I have rounded down for the sake of the example.

The clock diagrams, though easier to read individually, do not lend themselves to comparison as readily as their linear counterparts. I offer two possible methods of comparison using the clock diagram in order support my decision to use barcode diagrams for corpus analyses in this thesis.

One option is to wrap the distribution lines of multiple films concentrically around one another in rings. **Figure 3.4** demonstrates this method using the same two films as the previous example. The layout of the concentric circles means that the external dotted rings that previously clarified act structure must be removed. The information can still be located on the sequence ring, but is less apparent at first glance. Therefore, the previous observations about similarities in act portioning are hidden from the inexperienced eye. The concentric circles do, however, allow the alignment of events to be easily detected: the alignment of themes at 6, 9, and 11 o'clock, for example. A disadvantage of this method is that it creates a skewed visual hierarchy with the scale of the outer rings imposing dominance and perceived salience over the smaller, inner-ring films. Another disadvantage is that, as more films are added, it quickly becomes so large and busy with information that it not only surpasses the size of the page, but becomes confusing to the point of unusable.

The simpler yet equally problematic method for the comparison of the circular graphs is to simply place the clock diagrams alongside one another, as in **Figure 3.5**. While broad comparisons may be made, the detailed similarities will not be as easily accessed and demonstrated as with the vertically aligned barcode diagrams. This method also quickly outgrows the page when comparing several texts (note the reduced size required in order to place the two diagrams side by side). It is for the reasons outlined above that comparisons between films in later chapters will be made using the aligned barcode diagrams.

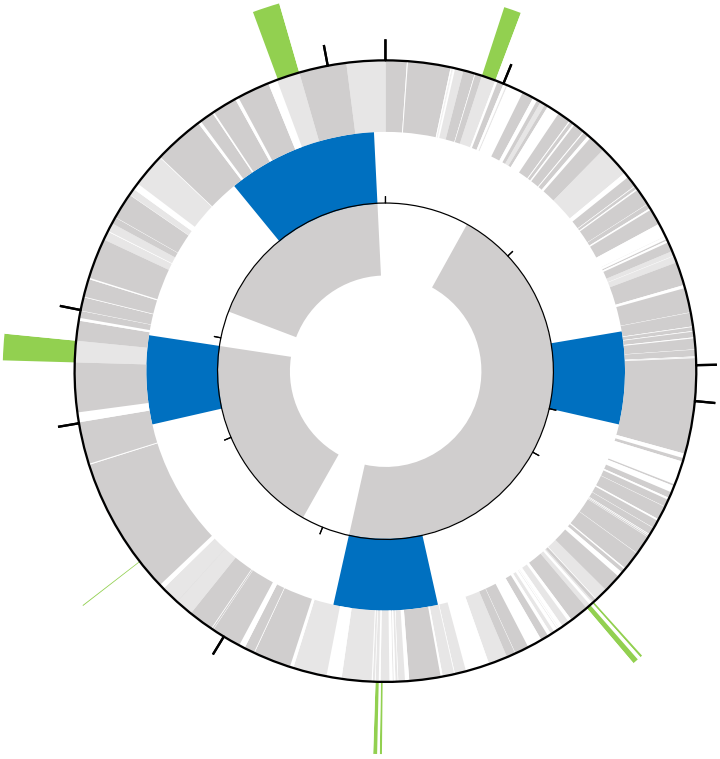

Figure 3.4 FMO clock diagrams in concentric circles – 88′44″ *Coco* (outer) and 5′01″ *Lava* (inner)

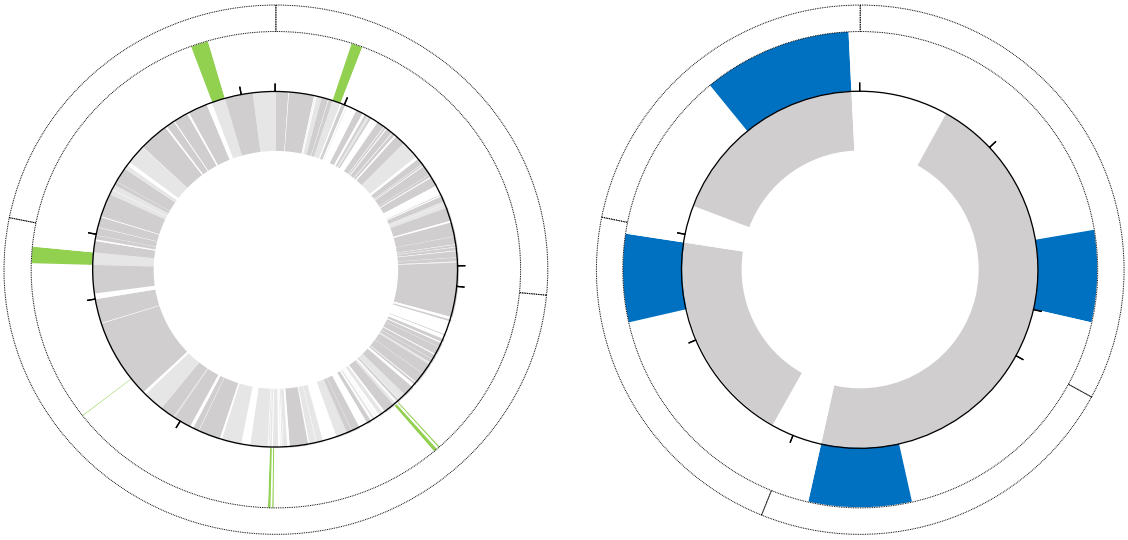

Figure 3.5 FMO clock diagrams side by side – 88′44″ *Coco* (left) and 5′01″ *Lava* (right)

3.2.3 Comparing Acts

Using proportional duration data rather than the usual time reference system allows for an equalised comparison not only of entire films but of any given subsection. For instance, each act or sequence may be equalised to be displayed at the same width as its counterpart from another film to reveal or better demonstrate internal similarities. Despite many screenwriting manuals offering quixotic figures for the act durations,[148] the internal timings of films tend to be, like the durations of entire films, different from one film to another. As will be demonstrated in later chapters, though act proportions may vary from film to film, they often share similar internal proportions and functions.

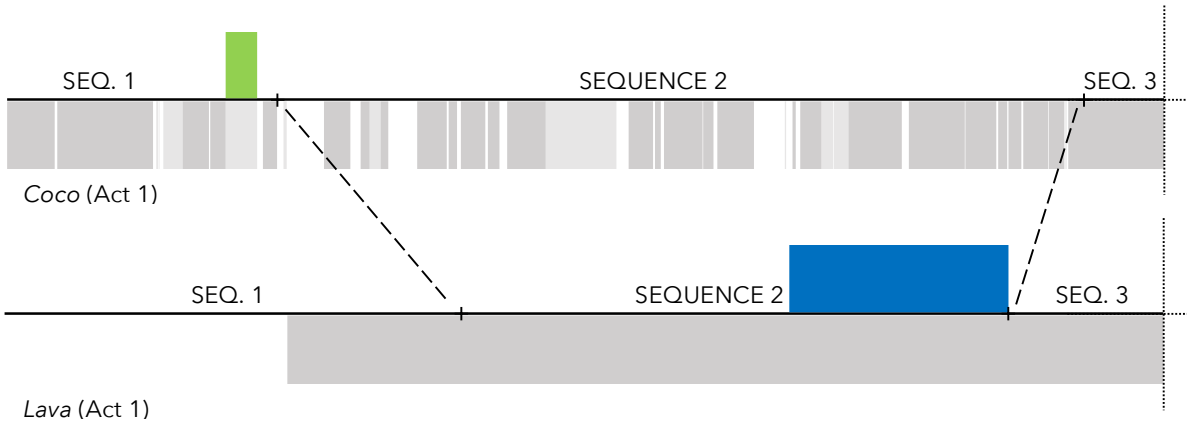

Figure 3.6 Equalised Act 1 FMO barcode of *Coco* (above) and *Lava* (below)

Figure 3.6 provides an example of act equalisation, with the 24'16" opening act of *Coco* vertically aligned with the 2'07" opening act of *Lava*. Each act has been recalibrated to equal 100% and the internal timings reformulated accordingly. In the previous entire-film comparisons, these disproportionate acts were visually misaligned. Dotted lines demonstrate the revised alignment of sequences which, though not expected to be perfect, offers a more manageable comparison of the internal sequences than before. In Chapter 5, I equalise the individual acts of several feature films to support a more nuanced analysis of the placement of themes.

[148] Durations are regularly referred to by the number of pages with the dictum that each page of script will average a minute of film.

3.2.4 Cue Abstraction

In order to populate the FMO diagrams with compelling data, details from the film scores must be extracted and categorised. In musical listening, Irene Deliège refers to this process as *cue abstraction*.[149] The first stage of cue abstraction is the process of perceiving and determining the parts to be extracted. In the case of film music, this may involve the deceptively difficult task of determining which of the sonic elements are part of the musical score and which are elements of the sound design.[150] It may also include the recognition of diegetic level of cues as well as the identification of recurring themes. The second stage is a comparative process in which cues are categorised. The categorisation of musical elements is dependent on contextual and experiential considerations. Deliège describes three categorical levels put forth by Eleanor Rosch.[151] At the highest level, categories are defined by their function. This is known as the *superordinate* class. In the context of film music, a musical theme might be placed into this category. At the intermediate or *basic* level, one might place 'antagonist's theme'. The *subordinate* level is made up of variations within this category. For example, 'antagonist's theme played by the brass section' or 'antagonist's theme in D minor'. These subordinate level variations are elements that may best demonstrate a musical theme's narrative journey.

There is an inherent subjectivity in the abstraction of film music 'cues' (used here in the Deliègian sense). Though objectivity is strived for in data collection, educated decisions must be made throughout and these decisions must be made with as much consistency as possible. Rick Altman rightly suggests that data collection like this is 'by [its] very nature imprecise.'[152] It would be redundant, illogical, and ultimately impossible to attempt to document every detail of the score with accuracy. Not only do sounds clash and blur with other elements of the *mise-en-bande*, but not every detail of the music holds relevance. The music of Michael Giacchino poses fewer abstraction obstacles than other composers' work

[149] Deliège defines cues as 'salient features' but, in film music, the term applies to separate tracks of music. Deliège, I., 'Cue Abstraction as a Component of Categorisation Processes in Music Listening,' in *Psychology of Music*, Vol. 24 (1996), pp.131–56.

[150] This distinction is made with increasing difficulty with the rise of so-called 'ambient music design', a term invented to explain the role of Mel Wesson in his collaborations with Hans Zimmer.

[151] Rosch, E., 'Principles of Categorisation' in E. Roach and B. Lloyd (eds.) Cognition and Categorisation (Hillsdale, NJ: Lawrence Erlbaum, 1978), pp.28–49.

[152] Altman, R., 'Visual Representation of Film Sound as an Analytical Tool,' in Neumeyer, D., (ed.) *The Oxford Handbook of Film Music Studies* (Oxford University Press, 2014), p.92.

as it is fundamentally vibrant and discernible. With a largely orchestral palette and bold scoring style, it is rare for his compositions to blend indistinguishably with sound design. Giacchino is generally considerate of other sonic elements, pausing for explosions and similar effects, and his work is usually prominent in the final sound mix.

Determining what should and should not be considered worthy of documenting and how it should and should not be labelled or considered must be laid out beforehand. Criteria that provide the most fruitful results are not always known at the beginning of an analysis and may be unique to the individual film; a line of inquiry for one score may be redundant for another. It is therefore useful to identify and record the presence of a range of variables in order to highlight specifics for later delimitation. Because not all elements act in significant ways, the initial enquiry is, to borrow Wallace Berry's wording, to determine 'within which parameters' contributive actions occur'.[153] It must be with shrewdness that the analyst determines which musical phenomena to mine for a compelling analysis.

When converting the data into a presentable graph, one must make decisions about what is worth representing, or 'find [oneself] condemned to producing diagrams that are so crowded and busy that we have trouble understanding them ourselves, let alone using them to communicate clearly with others.'[154] Throughout the data collection process, certain phenomena and patterns make themselves apparent, providing fruitful starting points for analytical inquiry. These phenomena should be noted and investigated further as data collection continues. Often, it is only once a multitude of information has been collected that one begins to find interesting trends and patterns. In fact, it may not be until the graphs have been made and compared against other films that coincidences reveal themselves.

Issues of ambiguity may occur in the classification of diegetic music cues. The level at which cues operate can be subjective, ambiguous, fluctuating, or indistinguishable and, as a result, problematic. For the purposes of this particular study, in order to classify a cue as

[153] Berry, W., *Structural Functions in Music* (New York: Dover Publications, Inc., 1987), p.5. (emphasis removed from original)
[154] Altman, R., 'Visual Representation of Film Sound,' p.85.

diegetic, its source must be either visually depicted, implied by character dialogue or behaviour, or sonically altered to give an impression of the diegetic space. If a cue obviously moves from one diegetic space to another (sonically or otherwise) via an automated fade, the moment of crossover may be obscured. An example of this can be found in *Ratatouille*. Sonically manipulated music comes from an obvious onscreen source (an old television upon which a black-and-white film is playing) before slowly fading seemingly seamlessly into the fuller, obviously non-diegetic orchestra. In this example, the two parts stem from one continuous cue. However, inharmoniously incompatible non-diegetic and diegetic cues may also overlap. In *Coco*, Miguel sneaks into a party. Non-diegetic music sets the scene for the viewer, but as Miguel makes his way into the interior party, the cue fades out and diegetic drum and bass music, apparently produced by an onscreen DJ, fades in. The FMO diagram, designed to show single consecutive events, is not well-suited to this kind of multi-layered score. An option for the visualisation of these types of diegetic overlap may look like the diagram in **Figure 3.7**. This visualisation takes a great deal of added time and effort. Unless the analysis requires a visualisation of the crossfade, it is an impractical detail on entire-film FMO diagrams.

Figure 3.7 Presentation method for overlapping non-diegetic and diegetic cues

When two themes overlap, acting as countermelodies to one another, they may be illustrated on the FMO diagram like the example in **Figure 3.8**. One theme is represented in green and the other, depicted with blue, begins partway through the first theme, lasts for only a few seconds, and ends before the first theme finishes. A similar method can be used to show concurrent diegetic and non-diegetic cues.

Figure 3.8 Presentation method for concurrent themes

Later in the aforementioned *Coco* scene, Miguel interrupts the DJ track as, guitar in hand, he performs a song. It is not possible using the current method to depict the overlapping beginning and ending of these two separate diegetic cues with the FMO diagram. Details at this localised scale are not relevant to the present study and so there is no need to devise a way of graphically representing them. However, if required, annotation is an easy, if crude, option. Another interesting, diegesis-traversing technique can be found in *The Incredibles*. Mr. Incredible returns home humming his own family's musical motif along with the non-diegetic orchestra. This example blurs the boundaries of what is considered diegetic music and what is dialogue. If one were to extend this idea to a hypothetical extreme, it would show the level of complexity that can arise from multiple diegetic levels. If a diegetic cue contains one of the film's themes, and a non-diegetic score joins it quoting one of the film's other themes, there would be two themes functioning at two diegetic levels. The FMO method, as it stands, may not be equipped to express this – albeit hypothetical – degree of sonic and perceptual complexity that exists in some modern soundtracks. Rick Altman discusses the complexities of the modern soundtrack in his chapter 'Inventing the Cinema Soundtrack: Hollywood's Multiplane Sound System'.[155]

There are benefits to a simplified representation of structure. A reduced model highlights broad formal patterns in the music and their relation to passages of the film rather than focussing on what we might think of as 'localised sonic effects' which are likely one-off events rather than recurring features. While it is fun to speculate how this model might deal with the minutiae of a score, the focus of this thesis is on large-scale structures and recurring events.

[155] Altman, R., Jones, M. and Tatroe, S., 'Inventing the Cinema Soundtrack: Hollywood's Multiplane Sound System,' in Buhler, J., Flinn, C., and Neumeyer, D. (eds.) *Music and Cinema* (Hanover, NH: University Press of New England, 2000), pp.339–77.

3.3 Morphology of the Pixar Film

The following section identifies the narrative framework within which Pixar film music operates. Below, I outline eight sequences through which all Pixar films appear to traverse. It is necessary to propose my own description of the architecture of Pixar films because, for reasons explained in the previous chapter, existing models are incompatible with the current Pixar corpus. The narrative model I describe below offers a practical solution to the segmentation of a Pixar film.

First, I divide the film's timeline into three acts. Three-act structure is part of the vernacular used among Pixar employees to discuss form and will act as a starting point for the analyses in this thesis. Identifying the separation of these three acts is largely straightforward. Act 1 begins at the start of the film and continues until the protagonist is locked into a new situation. In feature films, this typically involves a journey to a new location. A lengthy Act 2 continues until the protagonist hits their lowest emotional moment. They are usually trapped alone or with an ally. Act 3 begins when the protagonist escapes from their situation and determinedly sets of to face their challenge head-on – whether an antagonistic character or a problem – for the final time. Syd Field and others have assigned the proportions of ¼ - ½ - ¼ to the three acts, however, as I demonstrate throughout this thesis, these idealised fractions are seldom accurate.

Each of these acts may be further divided into smaller units called *sequences*. The following section provides a detailed description of eight key sequences common to the Pixar feature film. Each sequence can be located in **Figure 3.9**. This is not to say that these sequences cannot be further subdivided – indeed I offer possible subdivisions in the descriptions – but a structural breakdown that is too detailed risks designing an overfitted model that is specific only to Pixar films and is not able to predict or be applied outside of the specific dataset. While this sequence breakdown has been designed based on the structure of seven Pixar feature films, it may also be applied to other films inside and outside of the Pixar canon.

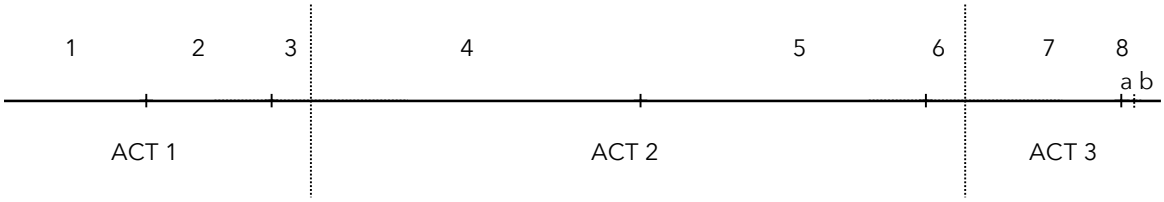

Figure 3.9 Hypothetical narrative framework

3.3.1 Act 1 Sequence Descriptions

1. Glory Days[156]

The Glory Days sequence of Pixar films is a vibrant, informative introduction that establishes the main character(s) doing and losing something they love. Often set in the past (hence, glory days), this sequence acts as a prologue to the film, providing viewers with the requisite information to understand the ensuing story as well as the protagonist's notion of happiness or success. The sequence is made up of four sequential parts:

i. Opening: a short piece of initial information is presented in either a diegetic media format[157] or a visual medium or storytelling style that differs from the rest of the film.[158] The Opening often ends with an appearance the film's logo.
ii. Introductions: the world is explained and the main characters are introduced actively doing what they love.
iii. Disruption: an event occurs that results in the protagonist no longer able to continue doing what they love.[159]
iv. Consequence: a short scene showing the consequence(s) of the Disruption. If

[156] 'Glory Days' is the title of a music cue – borrowed from a line of dialogue – on the *The Incredibles* soundtrack. I have chosen to use this denomination because it succinctly describes the mood and the time period of the sequence.

[157] *Ratatouille* opens with a television documentary that introduces the antagonist and the mentor; *Up* opens with a black-and-white cinema documentary that introduces the antagonist; *The Incredibles* opens with archived talking head interviews with the heroes; and *Cars 2* opens with a video transmission.

[158] *Inside Out* opens as voiceover and black screen; *Coco* opens as a semi-2D animation presented in traditional Mexican paper bunting known as 'papel picado'; and *Incredibles 2* opens as the retelling of a story from a secondary character's perspective.

[159] Remy's colony is discovered and forced into the sewers; Carl's wife passes away and he is forced to live alone; Mr Incredible is sued and forced into hiding; Finn McMissile fails his mission and is forced to continue his search for the villain; Riley's family moves house, forcing Joy to have to adapt to a new life; Miguel's family despise music and his favourite musician dies forcing him to lead a secret life; and, because the Parr family fail to stop the Underminer, superheroes are once again forced into hiding.

the logo did not appear at the end of the Opening, it appears in this section (as in *Inside Out*).

Sometimes, the characters, world, and situation are explained through character dialogue or voiceover, as in *Inside Out*, *Ratatouille*, and *Coco* (e.g., 'See, a long time ago…') or with younger versions of the characters, as in *Up* and *The Incredibles*. The two sequels of the corpus, not encumbered with the task of introducing the world, take a different approach: *Incredibles 2* starts out where the previous film left off and *Cars 2* introduces a new character to the franchise. Both films' Glory Days sequence can be described as beginning *in media res*.[160]

Audiences may also be introduced to the antagonist during this sequence, though Pixar often masks their true identity at this stage, to be unveiled later on, e.g., *The Incredibles*' super-fan Buddy, who grows up to become evil mastermind Syndrome; *Up*'s renowned explorer Charles Muntz, admired by Carl, later revealed as an obsessive bounty hunter; and *Coco*'s much-loved musician Ernesto de la Cruz, who turns out to be a fraud and a murderer.

2. Today[161]

A jump forward in time to the present day (or, in some cases, later that same day) sets the story in motion. The Today sequence shows the protagonist's life after the life-changing misfortune of the Glory Days and, as such, the two sequences are stark contrasts of one another. The sequence is made up of four sections:

i. Crestfallen: the protagonist is alone and unhappy.
ii. Getting On: the protagonist gets on with their life, disenchanted though they may be.

[160] *In media res* refers to when a film opens in the middle of an action sequence.
[161] While the opening sequence describes a happier past (i.e., 'Once upon a time…'), the sequence that follows, downtrodden as it typically is, might be best introduced by a storyteller with a forlorn '…but today…'. I have named this sequence not only to orient the viewer in diegetic time, but to express this melancholic sentiment.

iii. Opportunity: an opportunity or problem arises that could result in them leaving their current situation.

iv. Decision: the opportunity or problem either forces the protagonist to make a choice or a decision is made for them. The result of this decision will require them to step out of their comfort zone.

Oftentimes, dialogue, voiceover, or on-screen text may be used to support or explain the time jump. Other elements such as colour, framing, weather, etc. will help to express the new, miserable circumstances that beset the protagonist.

It can be difficult to pinpoint the precise moment of the Opportunity (commonly known as the 'inciting incident'). Either a number of adumbrations will accumulate before the Decision must be made or a more definite 'blue pill or red pill'-like question may be posed.[162] It is for this reason that I have not singled this moment out to have its own node on the graph as others have before me. It functions like the Disruption of the Glory Days: to interrupt the status quo of the sequence.

In the case of the two *Incredibles* films, the Decision is made very clearly. In the respective films, Bob and Helen Parr (aka Mr and Mrs Incredible) are offered new jobs (Opportunity). They each mull the decision over before making a phone call to declare, 'I'm in' (Decision). This line of dialogue symbolises the characters' commitment to moving forward. However, in *Inside Out*, Joy is sucked up into a pipe against her will. The decision to move into Act 2 is made for her.

Cars 2 takes a different approach, portraying the contrast between the Glory Days and Today sequences by switching from the action-packed night-time mission of secret agent Finn McMissile to the humdrum life of Mater. The 'whenabouts' of the McMissile mission are unknown, but the swift edit to Mater implies a jump forward to the 'today' of the tale.

[162] This refers to the scene in *The Matrix* (the Wachowskis, 1999) in which Morpheus offers Neo an ultimatum that will allow him access to the Matrix or not, depending on which pill he decides to take: '… After this, there is no turning back. You take the blue pill, the story ends, you wake up in your bed and believe whatever you want to believe. You take the red pill, you stay in Wonderland, and I show you how deep the rabbit hole goes.'

3. Crossing the Threshold[163]

A swift journey from Act 1 to Act 2, Crossing the Threshold is a transitional sequence that typically involves the protagonist physically journeying to a new location. The sequence is usually brief but can vary in duration. For example, in *Inside Out*, Joy and Sadness are sucked up into a pipe against their will, the Crossing the Threshold sequence is a short, seventeen-second, uncontrollable ride through the pipe until the pair are dumped unceremoniously into Long-term Memory. Conversely, the balloon-covered house of *Up*, rising from its roots and into the air, makes for more of a feature of the journey, which lasts for almost three minutes.

This sequence may be bypassed entirely with an abrupt edit from Today to Journey Begins, but the edit must convincingly explain how characters are transported from place (or situation) A to place (or situation) B. For example, in *Super 8* (J.J. Abrams, 2011), Alice makes a Decision, telling Joe, 'I'll do it.' Using a technique known as a J-cut (or a *sound bridge*) where sound from the following scene precedes the visual cut, the film jumps to later that day and the pair are shooting their super-8 movie. No journey is required for the audience to understand how the pair come to be in this new setting, yet the confirmative 'I'll do it' and the new location after the cut announces their commitment to crossing the narrative threshold.

3.3.2 Act 2 Sequence Descriptions

4. Journey Begins[164]

Arriving in the new location or situation, the protagonist must steady themself and begin their journey onwards, usually with the desire to return to some semblance of the Glory Days. Throughout this sequence, the protagonist will face a series of challenges, meeting an array of characters (helpful and otherwise) along the way. The film may jump back and forth between the protagonist's progress and characters that remain in the 'home' location. The lengthy sequence concludes at the so-called 'midpoint' scene of the film.[165] In this scene, during an intimate conversation or similar exchange, the protagonist will discover

[163] A label taken from Christopher Vogler's 'Hero's Journey'. The threshold may refer to a tangible, geographical 'point of no return' but may also describe a psychological or situational one.

[164] I have chosen this denomination to convey the idea of new beginnings associated with locking into Act 2.

[165] As will be demonstrated in later chapters, the midpoint usually occurs later than halfway through the film.

something new, whether the identity of the antagonist or other valuable information that relates directly to the eventual solution at the climax of the film.

5. Journey Continues[166]

After the midpoint revelation, there is a reversal of fortune and the protagonist is captured. In *Up*, Carl and Russell, who had been making good progress towards Paradise Falls, are captured. *Coco*'s Miguel splits from his travel companions Héctor and Dante to journey forth alone, only to be captured and imprisoned. In the cases of *Coco* and *Up*, the protagonists run into the arms of the soon-to-be-revealed antagonists. In the *Incredibles* films, Bob and Helen respectively, each of whom had been enjoying their return to superhero life, are imprisoned by recently-revealed antagonists.

The beginning of the Journey Continues sequence is supported in five of the seven films by a time jump from night to day (*Up*, *Ratatouille*, and *Incredibles 2*) or a change of location (*Cars 2* and *The Incredibles*). A brief pause on an entirely black screen accentuates the divide between the two *Incredibles* films. *Coco* and *Inside Out*, which continue on without a time jump, portray the change of sequence with a shift from close-ups to wide shots. The sequence ends with the protagonist captured (e.g., Miguel by De la Cruz in *Coco*), recaptured (the capture of the entire family in *The Incredibles*), or in some way separated from the action and in a quiet moment of solitude (Carl's moment of peace in his living room at Paradise Falls in *Up*).

6. All is Lost[167]

The All is Lost sequence, typically contained to a single scene, can be subdivided into three sections:

[166] I reuse the word 'journey' in the title so as to retain a connection with the previous sequence. The implication is that *the journey continues as before, but with a change of fortune*.

[167] 'All is Lost' is a term used in Blake Snyder's *Save the Cat!* (2005). Confusingly, Snyder describes his All is Lost moment as the low point of the character's journey and follows it with the Dark Night of the Soul in which the hero mourns their losses. Snyder refers to these points as 'beats'. My reading of the All is Lost sees loss and mourning as part of a sequence.

i. Realisation: the protagonist acknowledges that they have hit rock bottom – that all hope is lost. This is often articulated with a sigh (as in *Up*, *Inside Out*, *Cars 2*, *Coco*, and *Incredibles 2*).[168]
ii. Revelation: the protagonist will then have a revelation, evoked by new information, that instils within them a determination to return to solve the problem or fight the enemy.
iii. Escape: they will escape from their binds either by their own means or with the help of a conveniently-timed cavalry.

These sequences are usually set in dark locations with the protagonist imprisoned or trapped in some way, e.g., in a pit (*Inside Out* and *Coco*);[169] in a cage (*Ratatouille*); or tied up or bound (*The Incredibles*, *Incredibles 2*, and *Cars 2*). Juxtaposing this sombre aesthetic, Carl Fredricksen's All is Lost scene in *Up* takes place in an unusually bright space: the living room of his house which sits peacefully atop a serene Paradise Falls.

3.3.3 Act 3 Sequence Descriptions

7. Final Push[170]

The Final Push sequence begins with a protagonist reinvigorated by new information learned during the All is Lost sequence. Having escaped their 'cell', they determinedly set forth to conquer their problem once and for all (hence, final push). Determination turns into action, which continues until the film's climax. The climax usually involves a stand-off with the antagonist. *The Incredibles* has two stand-offs: first with the Omnidroid robot and then with Syndrome himself. *Coco*'s first stand-off is with the antagonistic Ernesto de la Cruz. Once defeated, Miguel must return home to 'battle' with Mamá Coco's failing memory. In *Inside Out*, a plot with no central antagonist, the climactic stand-off involves Joy and Sadness encouraging Riley to return home and speak aloud her anxieties. The fall of the

[168] Mr Incredible lets out a sigh-like 'I'm sorry' and Remy from *Ratatouille* lies quietly, sulking. A sigh from the rat would not seem out of place in this moment.
[169] A less-than-subtle metaphor for the character's lowest moment.
[170] 'Final Push' is a term used by screenplay consultant Michael Hauge at his website storymastery.com, published in 2014. It succinctly describes the stakes of the sequence as well as the protagonist's determination.

villain is represented by a much-needed hug from her parents and the creation of a new, mixed-emotion memory.

The climax may be thought of as the point at which the plot reaches its maximum tension and the forces in opposition confront one another at a peak of physical or emotional action. Pinpointing this moment is problematic. Does this moment happen at the start of a final battle or as the final punch lands? Is the point of maximum tension the moment Frodo throws the ring into Mordor, the moment he arrives at Mount Doom, or the second Gollum attacks? Generally speaking, tension continues and crescendos throughout Act 3. It is only with the jump forward in diegetic time that tension truly subsides. The climax, then, need not be indicated on the FMO diagram as a singular incident, but considered part of a large sequence of events.

8. Aftermath[171]

The Aftermath is the outcome of the film set after the events of the film's climax. It describes how loose-ends are tied up for the characters once they return home (if they have not already returned). There are two types of Aftermath:

a) Soon: occurs shortly after the events of the climax.
b) Later: happens after a considerable or indeterminate jump forward in time. This time jump may be reinforced with on-screen text.

The filmmakers may decide to use both types of Aftermath or just one. The difference between them is merely the amount of time that passes; the Soon Aftermath usually happens later that day or the following day and the Later Aftermath happening at a later date. *Incredibles 2* has an example two Soon Aftermaths, with the heroes tying up loose-ends in Municiberg in the wake of the climactic ship crash followed by the signing of new pro-Supers laws presumably within the following days, and a Later Aftermath, in which Tony and Violet finally arrange to go on a date.

[171] Another term used by Michael Hauge to describe the final stages of a film. 'Aftermath' inherently implies a jump forward in diegetic time.

The following initialisms may be used for table headings and diagram annotations where space is limited:

Glory Days …	**GD**	Journey Begins …	**JB**	Final Push …	**FP**
Today …	**T**	Journey Continues …	**JC**	Aftermath …	**A**
Crossing the Threshold …	**CtT**	All is Lost …	**AiL**		

3.3.4 Beginnings and Endings

Often fading in from corporate logos and fading out to closing credits, the beginning and ending point of the film's story can sometimes be ambiguous. At the beginning of *Inside Out*, for example, there are thirteen seconds of blank, black screen. A music cue begins and, after four seconds, voiceover enters. It is not until the voiceover finishes its first sentence that the screen fades to white and characters begin to appear. The start of the film in this example, I resolve, is the moment the music begins.

Deciding where a film ends and the credit sequence begins requires similar clarification. *Up*, for example, fades to black with the sound of wind continuing for a few seconds before credits text fades in. Here, I made the decision that the wind was part of the diegesis and should therefore be included in the run time, even if the story has come to an end visually. Unique problems like this will inevitably arise from this kind of analysis. It is with consistency and reasoning that the analyst must make judgment calls. Ultimately, the beginning and end of a film are, for me, where the start of the first or end of the last visual or sonic element is seen or heard.

3.3.5 Short Film Caveats

There are some caveats to be made when applying this eight-sequence model to short films. In many of the Pixar short films, for example, the Glory Days sequence focusses on establishing location and situation rather than showing the protagonist doing what they love. If this is the case, the protagonist is not introduced until the Today sequence. The dynamic of the two scenes is therefore switched; the introduction of the central character brings excitement to the otherwise plain establishing shots. One could argue for a change of headings in the discussion of short film narrative (perhaps Establish the World, *née* Glory

Days and Meet the Protagonist, *née* Today) but, for the sake of consistency and comparisons, they will remain as they are for the duration of this thesis.

In short films, the Crossing the Threshold sequence rarely includes a change of setting, but simply locks the protagonist into a new situation.[172] An example can be found in *One Man Band* (Mark Andrews and Andrew Jimenez, 2005). The arrival of a rival musician represents the Opportunity (in this case, a problem). The counter-shot of the first musician's determined brow-furrowing and preparatory knuckle-cracking indicates he is making the Choice to commit to a musical duel. He bursts almost immediately into a musical offensive, locking the characters into the conflict of Act 2 without the need for a literal onscreen Crossing of the Threshold. Subtleties in the storytelling like this may be overlooked by inexperienced composers ignorant of narrative form; it is musical acknowledgment of key narrative shifts that will best support composers' claims of 'telling a story'.

At the end of the Journey Begins section, a midpoint conversation need not occur, but a revelation may still happen. This will change the stakes of the situation, creating a subtle divide between Journey Begins and Journey Continues.[173] In *One Man Band*, for instance, upon realising that neither musician can win on their solo efforts alone, they each reveal previously unseen ensemble extensions (additional self-playing instruments on protruding scaffolds). Their expressions become more serious and they walk towards one another. The pair continue to duel but in a way that is musically and visually more dramatic, separating it from the jocular Journey Begins spat. The following chapter demonstrates how changes in the musical score can be used to reinforce the difference between the two central sequences when the visual and narrative cues are so subtle.

In the Pixar short films, the Final Push sequence is often marked with a moment of return, whether a return home, the return of a friend or lover or, in the case of *Lou*, the returning of lost items. If an Aftermath sequence is included, it is the Soon Aftermath. The Later Aftermath only appears, if at all, after or during the credits for comedic purposes.[174]

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[172] An exception is *Sanjay's Super Team*. Sanjay is transported to a fantasy world for Act 2. Additionally, *Presto*'s acts could be considered different locations, with Act 1 taking place backstage and Act 2 on stage. The latter pair are not shown returning to the backstage area afterwards. *The Blue Umbrella* is another short film in which the action, despite staying in the same city, is transported to a new location for Act 2.

[173] A brief pause on an entirely white screen marks this moment in short films *Sanjay's Super Team* and *Lava*; a similar technique to the black screen of *The Incredibles* and *Incredibles 2*.

[174] As is the case for *Lifted* (in audio only), *One Man Band*, and *Piper*.

For the sake of consistency in the comparisons of features and shorts later in this thesis, this eight-sequence narrative breakdown will act as a one-size-fits-all model for now. However, the mere requirement of caveats for short film analysis highlights the need for dedicated research into short film construction.

3.4 Ancillary Music Notation

Film Music Organisation diagrams are reductive representations of film scores; they are designed to depict event placement rather than detailed musical transcription. It is therefore necessary at times to provide ancillary music notation to support a FMO diagram. The accompanying notation need not be comprehensive to the point of burdensome so as to diminish the efficiency of the graphs, but should be concise enough to express the information required to support the analysis. Where possible, all additional musical notation will be reduced to fit onto a single page and musical components will be notated as a single melodic line with chord symbols unless otherwise stated. In the following pages, I put forward two systems – one novel, one pre-existing – that will be used to present the transcriptions of film music themes and ostinatos respectively.

3.4.1 Notating Themes

The difficulty with notating the series of recurrences and transformations of the melodic themes found in film scores with standard notation is the task of expressing sameness and variability simultaneously. Smaller intervallic fragments will be deployed in isolation and must be identified as part of a longer melodic idea; they must remain familiar in spite of alterations to harmony, tonality, meter, phrasing, note addition and subtraction, intervallic changes, register, timbre, performance technique, tempo, or a combination of these factors and more. Communicating multiple statements of these variable melodic fragments while retaining their role as part of a greater whole or 'prototype' can be challenging.

In order to illustrate the similarities of and differences between numerous often-fragmented thematic statements, I have devised a customised notation system that vertically aligns notes and phrases. **Figure 3.10** contains a hypothetical example score (a bastardisation of the opening line from 'The Twelve Days of Christmas') and corresponding FMO diagram to illustrate how this notation system works. Letters down the left-hand side of the staves correspond to letters on the Thematic Distribution line of the accompanying Film Music Organisation diagram, allowing the reader to easily locate the statement in the context of the film: the notation of statement A is a transcription of the first instance of the theme in the film, also marked A. The vertical lines that run alongside the letters group the statements by act. For a three-act reading of the score, for instance, there will be three

vertical lines. The example notation system below has been divided up to show that statements A, B, and C appear in Act 1, statements D, E, and F sit in Act 2, and statement G exists in Act 3.

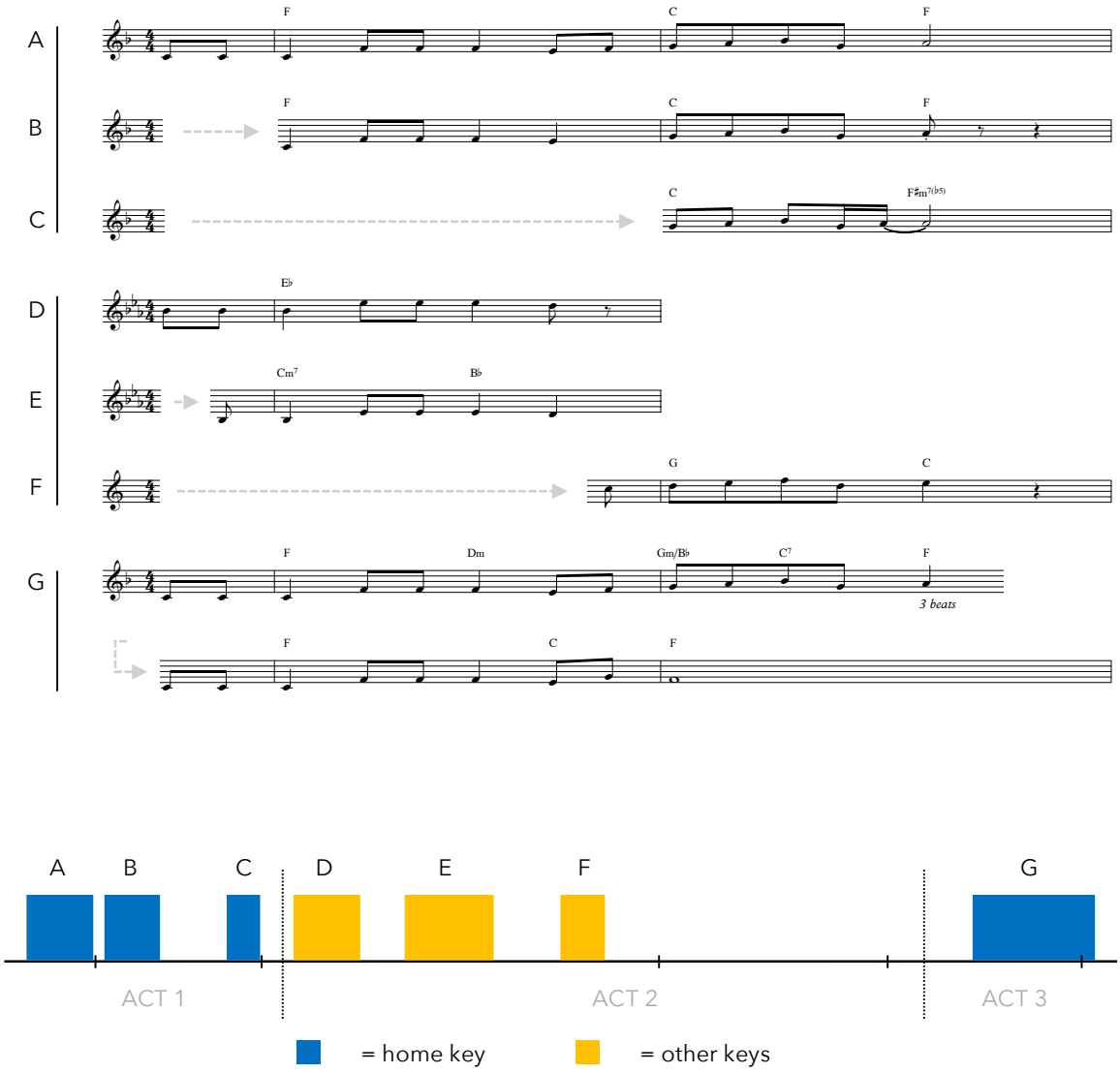


Figure 3.10 Transcriptions of thematic statements and corresponding FMO diagram

The following points describe the unique problems and solutions that each statement of this example score illustrates:

Statement A presents the theme in its complete form, written as it would appear in standard notation.

Statement B is without the two-note anacrusis. To retain alignment for the other notes in the melody, the anacrusis is merely erased and a dotted arrow guides the eye to its starting place.

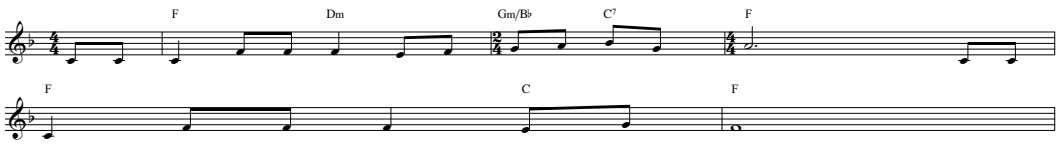
Statement C contains only the second bar of the motif. The bar before it is erased as before and, as before, an arrow guides the eye to the start of the phrase. The final note is 'pushed' and reharmonised. The alignment of these changes with those above and below it allows the rhythmic and harmonic changes to be easily detected.

Statement D changes key to E-flat major, illustrated by traditional key signature markings. Despite the extra flat symbols in the key signature, the notes remain aligned. The melody also jumps up an octave, but this does not affect its contour nor its noteheads' vertical alignment with other statements.

Statement E has a truncated anacrusis. This is dealt with using the same method for removing beats and bars as used in previous statements. Its reharmonisation is easily read in comparison with the previous statement.

Statement F begins in the middle of a bar and is now in C major. The notes that are excluded are blanked out and, as before, an arrow guides the eye to the first note of the statement.

Statement G includes a repeat of the theme. In order to show motivic similarity, the repeating parts are aligned. The anacrusis of the repeat has been removed from its customary 'beat 4' position and placed on the stave below to align with its prototype. The annotation of *3 beats* at the end of the first line indicates an extended note duration. Fully notated, the transcription of Statement G would read:



Ex. 3.1 Statement G of Figure 3.9 written out in full

Rather than inserting the 2/4 bar, which misaligns the noteheads, the annotation is added below the stave to indicate the note's correct length.

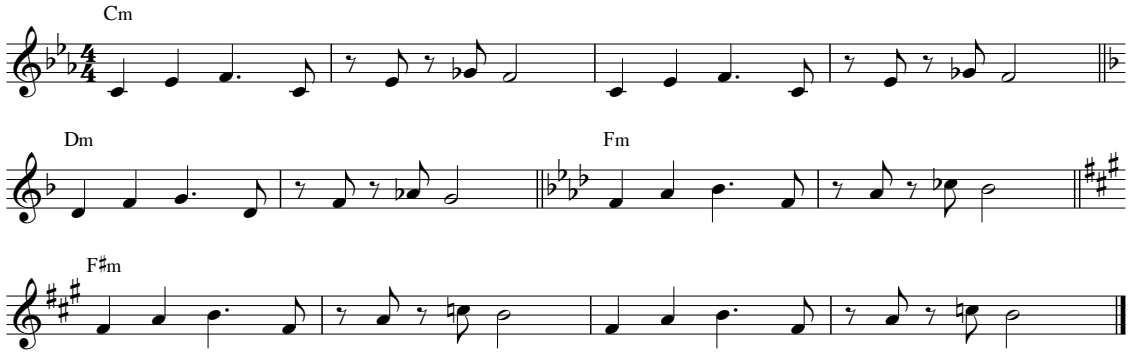
Aligning melodies becomes more challenging as rhythms become more abstracted, time signatures change, and extra bars or beats are added to the phrase. As anomalies to this system arise in later chapters, solutions will be described and staves will be annotated accordingly. The priority at all times is to demonstrate likeness and variation between thematic statements with as much clarity as possible. Lastly, an obvious limitation of this notation system is that it neglects orchestration, textures, timbres, and other details but, like the FMO diagrams, it is necessarily reductive for the purpose of reference and displaying core musical information. These limitations also exist with standard notation.

3.4.2 Notating Film Ostinatos

In a film score, ostinatos are almost invariably manipulated for dramatic purposes, often through modulation. Immortalising these ever-shifting repeating figures into any one key can be misleading, suggesting a tonic or predominant tonality. It is for this reason that I have elected to adopt David Zinn's 'Numerical System of Melodic Notation' for the transcriptions of ostinato figures, which favours scale degrees over fixed pitches.[175]

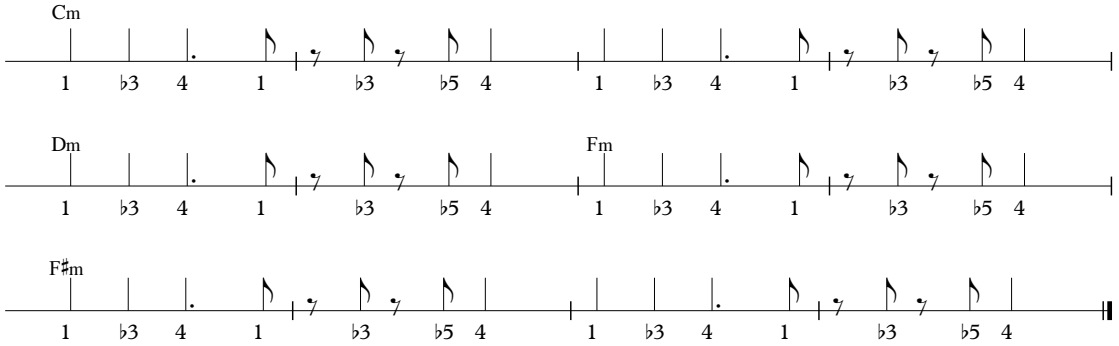
Zinn's numerical nomenclature frees the musical figures from a specific key or register. Though it does not illustrate the contour of a melodic line in the same way as standard notation, the numerical system quickly reveals patterns in the music. The example below shows a repeating figure (taken from the first two bars of Deep Purple's infamous 'Smoke on the Water' riff) that fictitiously modulates as it might in a filmic context through the keys of C minor, D minor, F minor, and F# minor. **Example 3.2** shows the two-bar modulating ostinato pattern as it would appear in standard notation. In order to derive the formulaic repetition from this particular nomenclature requires a reading of the entire piece as well as an understanding of the diatonic qualities of each note (i.e., root, mediant, etc.).

[175] Zinn, D. B., *The Structure & Analysis of the Modern Improvised Line* (New York: Excelsior Music Publishing Co., 1981), pp.29–47.



Ex. 3.2 Hypothetical modulating ostinato line written using standard notation

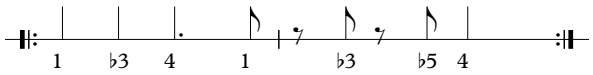
Example 3.3 features the same musical content, but written using a basic version of Zinn's numerical notation system.[176] By providing scale degrees rather than notes on a stave, this nomenclature instantly elucidates the repeating two-bar figure. The alignment of noteheads is improved as the bars are not shifted to accommodate sharp or flat signs.



Ex. 3.3 Hypothetical modulating ostinato line written using Zinn's numerical system

Example 3.4 demonstrates the ostinato cell that I will be employing in the discussion of the Final Push Ostinato in Chapter 6.2.7.1. This simplified system is sufficient for documenting the ostinatos discussed in Chapter 6, which are short and composed of a limited number of notes, spanning no more than one octave of a minor scale. The harmonic progression can be included in the accompanying text if necessary, but for the purposes of this thesis, they are not required.

[176] In his book, Zinn instructs on further nomenclature for the transcription of more complex melodic notation but, for the purposes of this thesis, these are not necessary. Ibid.



Ex. 3.4 An ostinato cell taken from the hypothetical modulating ostinato line

In the following three chapters, a selection of Pixar film scores will be dissected and analysed using the Film Music Organisation method, narrative sequence descriptions, and customised notation systems outlined in this chapter. Chapters 4 and 5 focus exclusively on the patterning of musical themes as they relate to narrative form and Chapter 6 looks at the arrangement and concentration of music cues. The results chapters are designed to showcase, develop, and test the robustness of this original methodology.

4

THEMATIC ORGANISATION IN PIXAR SHORT FILMS

On a dime, you have to switch from romantic to drama to mourning song.

– Saschka Unseld

4.1 Introduction

The short film, or 'short' as it is commonly known, has yet to establish itself as a serious area for academic study. Despite the rich pool of stories, styles, and composers (from pop producers to 'serious' film composers), as well as the many shared customs with feature-length films, there is an underwhelming response from scholars and analysts to the format. Miguel Mera suggests that, despite being a training ground for new talent and a highly competitive category at film festivals and award ceremonies, the factors constraining the perceived cultural significance of and research on the short film are the limited market and opportunities for distribution.[177] These factors do not limit a company like Pixar as they would smaller independent filmmakers. Until recently, Pixar was the only major film studio to screen an original short film ahead of each theatrical release.[178] The company also produces exclusive feature-related shorts for worldwide DVD distribution and online streaming. In short, there is no satisfactory reason for Pixar short films (at least) to be excluded from the discussion.

Like short stories in literature, short films must express the essence of a narrative in a distilled and efficient way. This distillation process often results in a leaner edit and more refined storytelling approach. Mera proposes that the restricted nature of dramatic storytelling in the short film even 'focuses attention on particular scoring approaches that could, at least from the perspective of the composer, be defined as effective working

[177] Mera, M., 'Scoring *Moth*: Beyond the Temp Track,' in Cooper, D., Fox, C. and Sapiro, I. (eds.), *CineMusic? Constructing the Film Score* (Newcastle: Cambridge Scholars Publishing, 2008), p.34.

[178] In 2018, Pixar announced the *SparkShorts* program, which gives Pixar employees six months and a limited budget to develop original, 'independent', animated short films. The resultant short films were released on Pixar's YouTube channel, before being moved to Disney's streaming service, Disney+.

practice.'[179] Practitioners must be resourceful with their spotting and scoring decisions in order to prioritise essential musical information and maximise the effectiveness of its delivery. Save for the occasional grunt or gasp, none of the Pixar shorts examined in this chapter include dialogue and so, without vocal performances to communicate plot, one could argue that there is a greater onus on music, sound, and visuals to deliver the necessary narrative information.

Due to fewer and generally shorter 'gaps' between cues, it could be argued that tonal relationships between cues may be considered more effectual and readily perceptible in this shorter medium as they do not suffer the supposed 'fifteen second' rule, which dictates that tonal relations do not retain power over a gulf of a mere fifteen seconds of silence.[180] As this chapter highlights, a considered approach to tonal design not only gives shape to many of the following scores, but also contributes to the narrative trajectory of the film in coordination with other production elements. By exploring the medium's rich and varied avenues of enquiry, I hope to promote short films as a credible and worthwhile inclusion in screen music scholarship.

Year of release	Film	Director(s)	Composer
2005	*One Man Band*	Mark Andrews and Andrew Jimenez	Michael Giacchino
2006	*Lifted*	Gary Rydstrom	Michael Giacchino
2008	*Presto*	Doug Sweetland	Scot Stafford
2009	***Partly Cloudy***	**Peter Sohn**	**Michael Giacchino**
2010	*Day & Night*	Teddy Newton	Michael Giacchino
2011	*La Luna*	Enrico Casarosa	Michael Giacchino
2013	***The Blue Umbrella***	**Saschka Unseld**	**Jon Brion**
2014	***Lava***	**James Ford Murphy**	**James Ford Murphy**
2015	***Sanjay's Super Team***	**Sanjay Patel**	**Mychael Danna**
2016	***Piper***	**Alan Barillaro**	**Adrian Belew**
2017	***Lou***	**Dave Mullins**	**Christophe Beck**
2018	***Bao***	**Domee Shi**	**Toby Chu**

Table 4.1 Pixar short film releases 2005–2018

[179] Mera, M., 'Scoring *Moth*: Beyond the Temp Track,' in Cooper, D., Fox, C. and Sapiro, I. (eds.), *CineMusic? Constructing the Film Score* (Newcastle: Cambridge Scholars Publishing, 2008), p.35.

[180] The 'fifteen second' rule is explained in more detail in Lehman, F., 'Reading Tonality Through Film: Transformational Hermeneutics and the Music of Hollywood,' PhD thesis (Cambridge, MA: Harvard University, 2012), pp.75–6.

The purposes of this chapter are to demonstrate the Film Music Organisation method as it applies to a corpus of films and to develop a set of initial findings from the more concise and accessible scores of short films. **Table 4.1** lists the twelve Pixar original short films released between 2005 and 2018: the seven titles marked in bold will be the focus of this chapter.[181] They have been curated to expose certain structuring strategies that will be built upon in the following chapter. The seven shorts are presented not in chronological order, but in a progression that delivers observations in stages so that each case study builds upon the last. At the end of the chapter, I provide brief evaluations of the remaining shorts to justify their exclusion from the main body of the study and to demonstrate that not all short film scores contribute at the level of the entire film.

4.2 Three-act Thematic Organisation

4.2.1 Tonal and Metric Design in *Partly Cloudy*

GLORY DAYS	Storks delivering babies, kittens, and puppies. Storks fly up to a team of clouds, who are creating cute creatures for the storks to deliver.
TODAY	Meet Gus, a grey loner cloud, who is making a baby alligator. Peck, his assigned stork, arrives looking exhausted and bedraggled. The pair embrace. Gus presents the alligator and it bites Peck's head. Gus offers the delivery to Peck.
CROSSING THE THRESHOLD	Peck tentatively accepts the task and flies off to deliver first creature.
JOURNEY BEGINS	Many dangerous creature deliveries. Peck looks longingly at a motherly cloud creating puppies for her stork to deliver.
JOURNEY CONTINUES	More dangerous creature deliveries. Peck eventually leaves Gus and heads towards the motherly cloud.
ALL IS LOST	Gus is upset.
FINAL PUSH	Peck returns with a solution: an American football helmet. The pair hug. Gus creates an electric eel.
AFTERMATH	n/a

Table 4.2 *Partly Cloudy* plot synopsis

I begin with Michael Giacchino's monothematic score for *Partly Cloudy*, a story about the challenging working relationship of a dangerous creature-creating cloud and a delivery

[181] 2005 is the year of Michael Giacchino's first contribution to a Pixar short and 2018 year of the last Pixar original short film to screen ahead of a feature film.

stork. Due to the simplicity and clear-cut thematic design of this short, *Partly Cloudy* will act as an archetype from which to describe deviations in other short films.

A single musical cue comprises the entire score, continuing without pause for the 4'51" duration of the film (represented in grey in **Figures 4.1a** and **4.1b**). Rather than relying on the dynamic patterning of multiple cues to create form, the architecture of the score is articulated by the tonal and metric design of a single melodic theme. During Act 1, the theme is presented exclusively in 4/4 time and in the key of D major with brief subdominant modulations to G major (notation in **Example 4.1**; statements A–D). These musical characteristics are represented in blue on the Film Music Organisation diagrams and may be considered as the 'home' or tonic version of the theme.[182]

The four statements of the theme in Act 2 (E–H) alternate between C major and F major, echoing the subdominant relationship of Act 1. Accompanying the subtonic modulation away from D major, the idea of variation is reinforced by a change of meter from 4/4 to 6/8. These statements are represented in orange in the graphs, grouped together as a collection of deviations from the established tonic version of Act 1. A short way into Act 3, the melody returns with the tonality and meter of Act 1: D major and 4/4 time (statement I).

Reducing the thematic design to its 'background' level, to borrow from Schenkerian vernacular, the ternary tonal design of this piece can be described as **D major » C major » D major** or **tonic » subtonic » tonic** and its metric design as **4/4 » 6/8 » 4/4** or **simple » compound » simple**. In an effort to turn film music theory away from traditional music analysis and closer to narratological thinking, I hereafter refer to a ternary film score *that directly aligns with a film's three-act structure* as 'ternary-act form'.

[182] The term 'home' will have additional relevance in the analyses of feature films, in which protagonists physically leave and return to their home.

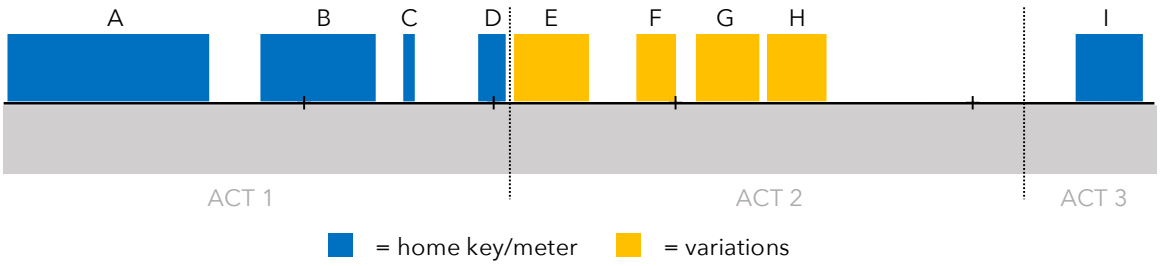


Figure 4.1a *Partly Cloudy* FMO barcode diagram

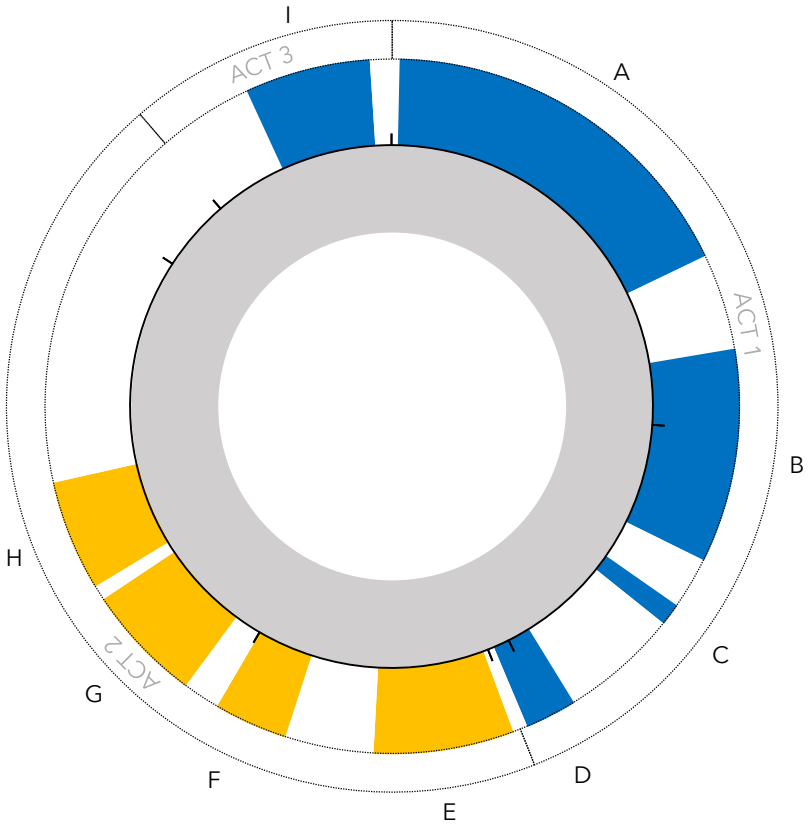
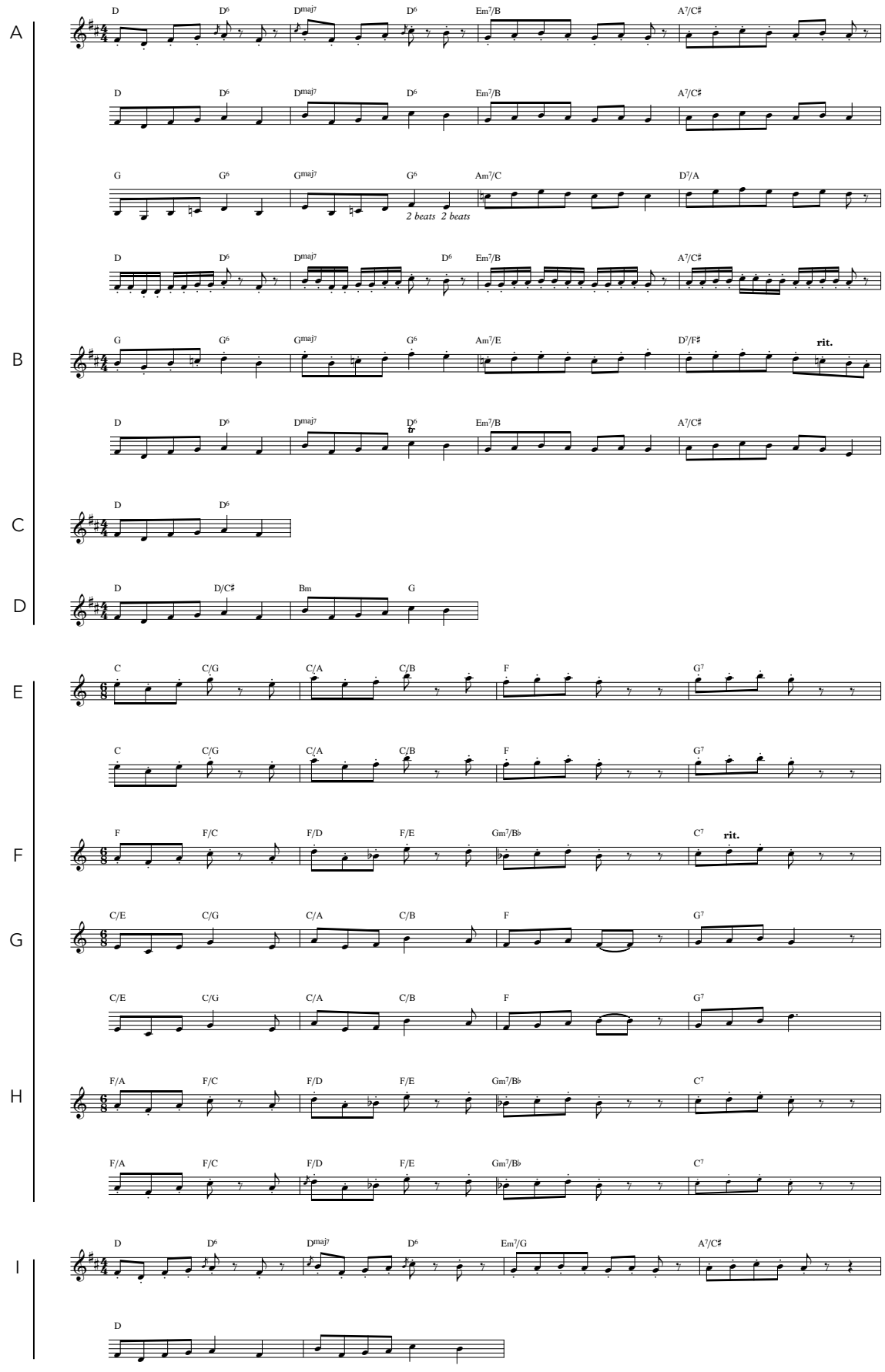


Figure 4.1b *Partly Cloudy* FMO clock diagram



Ex. 4.1 Transcriptions of thematic statements in *Partly Cloudy*

A detailed breakdown of the location and musical qualities of each thematic statement and their coordination with other production elements offers further evidence of a relationship between narrative and score. Act 1 glows with an early-morning pink and orange sky as the audience is introduced to the world of baby-delivering storks and baby-manufacturing clouds during the Glory Days sequence. The theme enters immediately and repeats throughout this introduction with only a brief, four-bar interlude of additional melodic material as the anthropomorphised clouds happily demonstrate their powers (statements A and [part of] B). As the Glory Days comes to a close, a downward camera pan cues a *ritardando* in the music and reveals the story's protagonist, a cloud called Gus. The coordinated move creates a short transition into the Today sequence and the beginning of the tale. Though unclear from the Film Music Organisation diagrams above, the introduction of Gus is marked musically with a return to the beginning of the melody in the tonic key (**Example 4.1**; statement B, bar 5). A revised Film Music Organisation diagram in **Figure 4.2** illustrates where the subdominant modulations occur (represented in a lighter blue and orange) and the annotation 'Gus' indicates the alignment of a return to D major, the beginning of the melody, and the introduction of the protagonist.

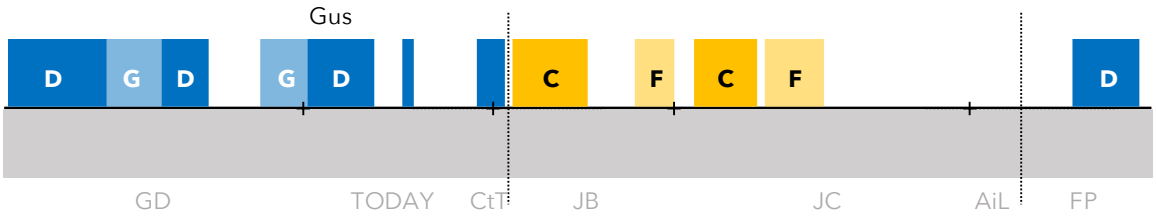


Figure 4.2 *Partly Cloudy* alternate FMO barcode diagram

Statement C involves only the first six notes of the theme and accompanies Gus and his friend – a stork named Peck who has the unfortunate and risky job of delivering the dangerous creatures that Gus creates – embracing jovially. Peck's reluctant acceptance of the delivery job marks the end of Act 1 as he takes flight with a baby crocodile, accompanied by two bars of the theme (D) and the satisfying closure of a tonic chord. After its lengthy inauguration during the Glory Days sequence, the theme thereafter supports the introduction of Gus, his enthusiasm for his job, and his friendship with Peck. In short, the melody at this stage signifies Gus' happiness.

The transition into Act 2 (which occurs at 2'08" or 43.99% into the film) is supported by the coordination of multiple components. Visually, the move is executed with a swift dissolve;[183] narratively, it is conveyed with a jump forward in diegetic time, depicted on screen by a change in the sky's colour palette from soft oranges and pinks to a vibrant sky blue; and musically, it is expressed with an unexpected subtonic modulation and a shift from simple to compound meter. The synchronisation of these changing elements supports the idea that '4/4 and D major' (as well as 'soft oranges and pinks') characterises Act 1 and sets up a stable tonic from which to stray. We might even consider the idea that 'orange and pink' acts as a colouristic tonic of sorts in this context. The connection between '4/4, D major' and 'stability in Act 1' is one that can only be made once the musical parameters have changed and, only then, when the changes coincide with the shift in the story. Were the score to remain in the same key and meter throughout, these fundamental musical constituents would not become semiotically-charged compositional tools with the potential to comment on the story. Were the musical parameters to change at a different moment, they could not be read as belonging to – and therefore signifiers for – Act 1. Any musical changes thereafter would be semantically negligible. Herein lies the significance of a score that coordinates with and complements the unfolding narrative versus one that operates independently. Once 'tonic' characteristics have been established, the musical (and colouristic) attributes are set up for a potential return, to provide a satisfying closure as the story resolves.

Now in 6/8, the melodic theme accompanies Peck and Gus through the challenges of Act 2 as two more dangerous animals are delivered: a ram (E and F) and a porcupine (G and H). Later in the film, Gus goes too far when he reveals a baby shark, causing Peck to fly off to the safety of a kindlier cloud. At this moment, the theme is removed from the soundtrack. Gus is angry at first but soon begins to cry at the loss of his friend. Giacchino scores this All is Lost scene with soft piano chords outlining the theme's harmonic progression; its *leitharmonie*. The chords, deprived of their hitherto concomitant melody, musically symbolise Gus without his friend. Shortly afterwards, Peck returns, signalling the beginning of the Final Push towards a solution. He reveals why he left Gus for the kindly cloud: she

[183] A 'dissolve' is the film editing term for a gradual transition from one image to another.

makes for him an American football helmet so that he is protected from Gus' dangerous creations. Immediately enlivened, the pair embrace and the theme returns in its original guise of D major and 4/4 time (statement I) as the sky transitions to dusky orange-pink hues behind them. The returning elements in the music and colour palette reflect and reinforce the three-act schema of the narrative, providing distinctive aural and visual features with which to identify each act. These identifiers function to guide audiences through the story with clarity.

A three-act account of the storyline aligns neatly with that of the score. Act 1 establishes the world, introduces the central characters, and sets up a potential rift between the pair; Act 2 has an underlying tension that escalates with a series of challenges, eventually breaking the two apart; and Act 3 resolves the situation, restoring and improving the world set up in the opening act. Musically, Act 1 introduces a theme in a particular tonality and meter (D major, 4/4), establishing it with multiple statements; Act 2 alters the established theme by changing its central characteristics (namely tonality and meter) before removing it altogether; and Act 3 restores the musical characteristics of the theme from the opening act. Naturally, numerous music forms exhibit a stability-instability-stability paradigm at a macro-level, so it may seem redundant to exemplify this quality of the score, but it is the alignment of these changing characteristics with the story and other cinematographic components that reveals the music's true contribution to the narrative. At several levels, the morphology of the score for *Partly Cloudy* tracks intimately with that of its narrative.

4.2.2 Tonal Design in *The Blue Umbrella*

GLORY DAYS	It starts to rain in a city at night-time. Inanimate objects come to life, smiling at the first drops of rain.
TODAY	Meet Blue, an umbrella, who is thrilled to be out in the rain. At a pedestrian crossing, he meets Red, a feminised umbrella. The pair flirt.
CROSSING THE THRESHOLD	The owners of the umbrellas turn off in different directions, separating the lovers.
JOURNEY BEGINS	Blue attempts to return to Red, using the wind to struggle against his owner. Blue escapes and flies into the air above the city. He spots Red and floats towards her.
JOURNEY CONTINUES	Blue gets blown off course and into traffic. Other characters who have been watching the umbrella's progress spring into action, knocking him out of harm's way.
ALL IS LOST	Blue is knocked out by a lorry and lies, battered and discarded, in the road.
FINAL PUSH	Red returns. Her owner offers a hand to the owner of Blue.
AFTERMATH: SOON	Both pairs sit together outside 'La Parapluie' café.

Table 4.3 *The Blue Umbrella* plot synopsis

Six-minute short film *The Blue Umbrella*, scored by Jon Brion, exhibits remarkably similar tonal design and thematic placement to that of *Partly Cloudy*. A melodic theme populates Act 1 in a single key – in this case, B-flat major (**Figures 4.3a** and **4.3b**, notation in **Example 4.2**; statements A–E). The theme modulates to the new key of D-flat major for its appearance in Act 2 (F) and returns to B-flat major for the film's resolution in Act 3 (G). The theme's ternary-act tonal design can be described simply as **B-flat major » D-flat major » B-flat major** or **tonic » chromatic mediant » tonic**. Brion does not employ a ternary-act metric design as Giacchino did, but instead deploys fewer thematic statements in Act 2. This sparser approach to thematic distribution reveals a more refined spotting technique.

The short opens with the sights and sounds of a bustling city. Rain begins to fall and inanimate objects come to life.[184] A marimba-like instrument enters with the rain and the adumbrative pitter-patter of a melodic theme plays in the key of B-flat major (statement A). As the protagonist – an anthropomorphised umbrella named Blue – jumps into frame, the theme is sung by singer-songwriter Sarah Jaffe. Hereafter, the theme is only ever heard as a vocal performance (B–G). Blue's introduction marks the beginning of the Today sequence.

[184] The short is designed around the concept of *pareidolia*, the psychological phenomenon that causes people to see patterns (in this case, faces) in inanimate objects and abstract patterns.

Brion's theme populates a large portion of this sequence as Blue meets and flirts with the love interest, Red. Thus far, the two composers' thematic strategies are similar, matching the respective melodies with the same plot events. Statement E tails off over a C half-diminished chord as the owners of the umbrellas walk in different directions, separating the focal twosome. Since the move to vocals at statement B, this reharmonisation is the first substantial musical deviation. It neatly foreshadows the music's transition into Act 2.

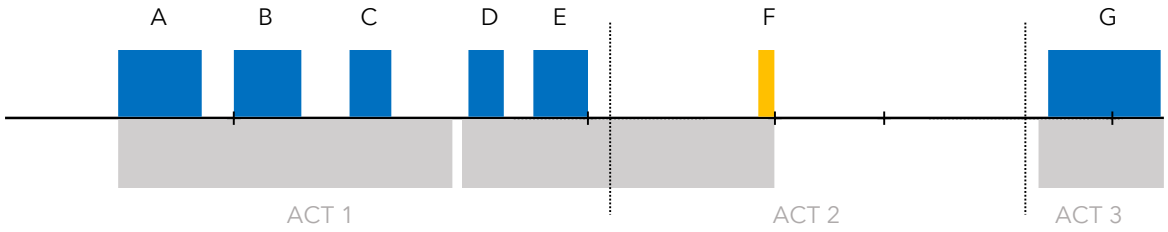


Figure 4.3a *The Blue Umbrella* FMO barcode diagram

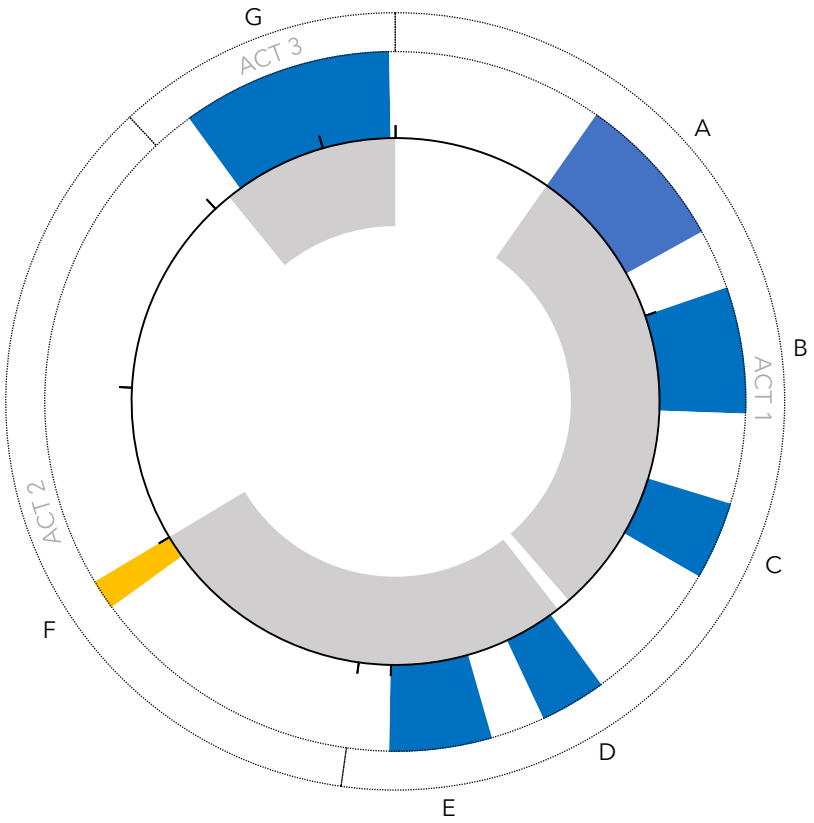
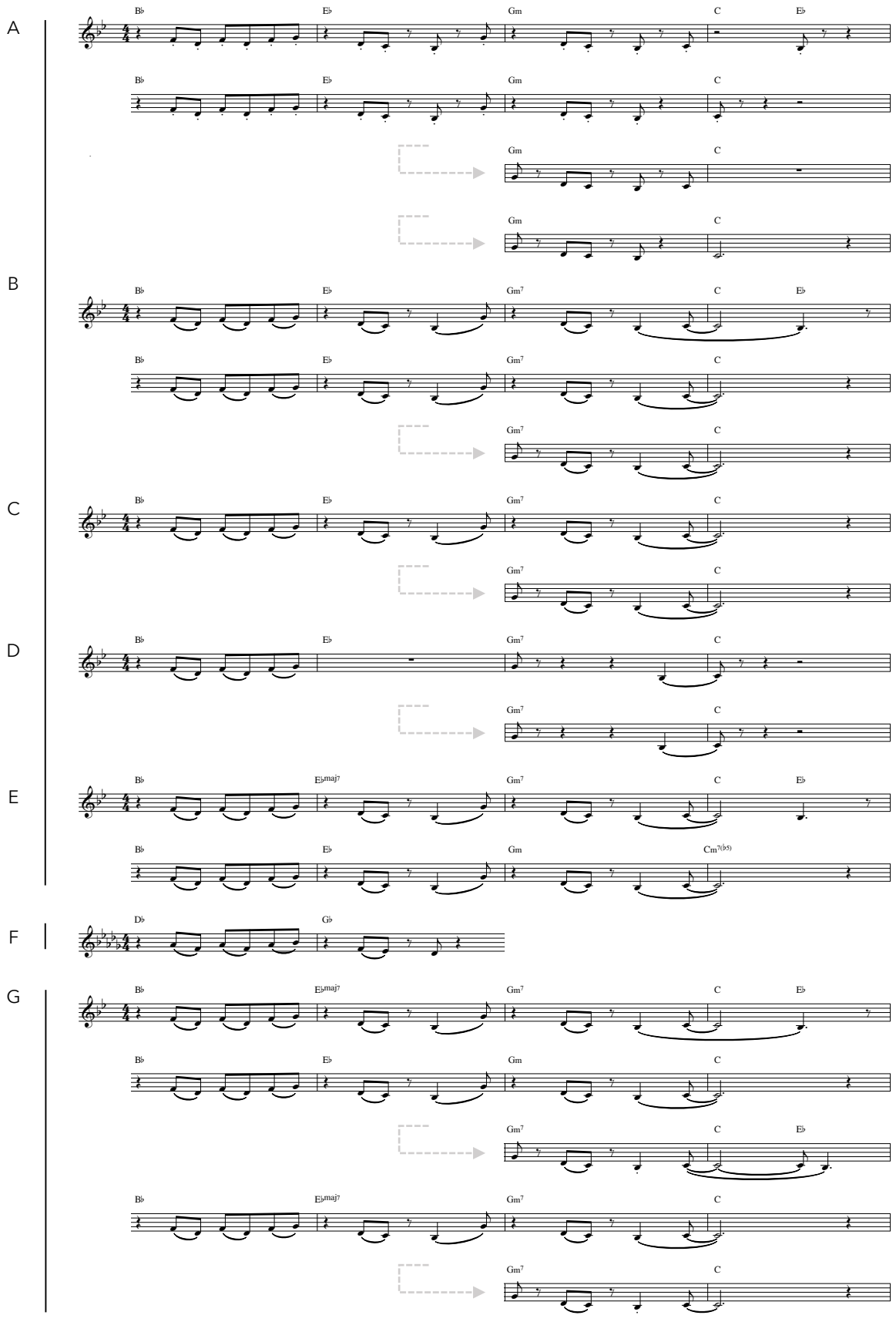


Figure 4.3b *The Blue Umbrella* FMO clock diagram



Ex. 4.2 Transcriptions of thematic statements in *The Blue Umbrella*

Descending string lines fill the transitional Crossing the Threshold sequence and the orchestration turns moodier. Rather than modulating the theme as Giacchino did, Brion removes it altogether. Contrasting the soft lullaby of Act 1, Brion underscores the drama of Blue's struggle in Act 2 with low, descending staccato strings and woodwinds, and colours Blue's escape and flight with contrasting high, ascending legato strings. When Blue suddenly spots Red in the crowd and enthusiastically directs himself towards her, the vocal melody, unheard since the lovers' separation, returns in a transposed D-flat major (F). There is a brief moment of calm optimism before the fortune of the protagonist is turned on its head. The vocals cut off abruptly mid-phrase as Blue is swept off course and into traffic. Music is removed entirely as Blue suffers throughout the Journey Continues and All is Lost sequences, tossed around in traffic until, eventually, he is knocked unconscious, literally suffering in silence (musical silence, at least). The commercial release of *The Blue Umbrella*'s soundtrack includes a discordant movement with low brass swells and percussion during the Journey Continues portion of the track, which was cut from the film, presumably in the late stages of production.

The absence of music during All is Lost scenes will be explored further in Chapter 6, but I would like to signpost and comment on it briefly now. Blue is left unconscious in a crumpled heap on the ground; all hope is lost. Including music here, to paraphrase sound designer Randy Thom on the decision to remove music from large portions of *Cast Away* (Robert Zemeckis, 2000), would have provided Blue 'with a kind of companionship'.[185] In this moment, Blue is 'sonically […] truly alone' and the scene is more tragic for it.[186]

In Act 3, as with *Partly Cloudy*'s thematic tonal design, the theme returns in its 'home' tonality of B-flat major at the film's climax (G), a short way into the Final Push sequence as the two umbrellas reunite, and repeats into the Aftermath sequence as the couple (and their owners) share a date outside a café. It is reasonable to infer that, like in *Partly Cloudy*, the theme represents Blue's happiness in this film. Appearing exclusively at moments of prosperity and disappearing during scenes of hardship, it neatly traces the vicissitudes of the protagonist's fortune.

[185] Thom, R., 'On Sound Designing: *Cast Away*,' in *The Soundtrack*, Vol. 2: No. 1 (Intellect Ltd, 2009), p.20.
[186] Ibid.

4.2.3 Modal Design and Supertonic Reprise in *Piper*

GLORY DAYS	Sandpipers on the beach run back and forth to the waves.
TODAY	Meet Piper, a young, nervous sandpiper, who sits in her nest awaiting her next meal. Her mother encourages her to fetch the food herself.
CROSSING THE THRESHOLD	Piper leaves her nest and rushes across the beach.
JOURNEY BEGINS	Piper is knocked down by a wave. Frightened now, she refuses to leave her nest again. When she eventually returns to the water, Piper is scared off by another wave. She hides under washed-up seaweed.
JOURNEY CONTINUES	Piper is encouraged forward by a new character, a hermit crab.
ALL IS LOST	Underwater, the hermit crab points out all of the food that appears when the tide washes in.
FINAL PUSH	With newfound courage, Piper enthusiastically catches lots of food.
AFTERMATH: SOON	Piper happily collects food late into the evening.

Table 4.4 *Piper* plot synopsis

Though similar, the score for *Piper*, composed by Adrian Belew, offers a variation on the established ternary-act tonal design of *Partly Cloudy* and *The Blue Umbrella*. In Act 1, Belew establishes the home key of C major with multiple statements of a simple, melodic theme (**Figures 4.4a** and **4.4b**; statements A–E). In Act 2, the theme modulates to D major (F and G) and then moves into the minor mode (starting on the third of the chord rather than the root): D minor in double time (H). In Act 3, instead of returning to C major as might be expected following the *Partly Cloudy* and *The Blue Umbrella* model, Belew presents the theme in D major again, a supertonic transposition from the established C major of Act 1. The recapitulatory effect comes not from a return to the tonic established in Act 1, but from a return to the major mode. Discounting statements F and G, the reduced ternary-act form of this score could be said to be **C major » D minor » D major** or **tonic » supertonic minor » supertonic major**. One might interpret the supertonic modulation in this final act as a reflection of the elevated outcome that the protagonist has achieved, i.e., a hungry sandpiper initially reliant on her mother is now able to fend for herself.

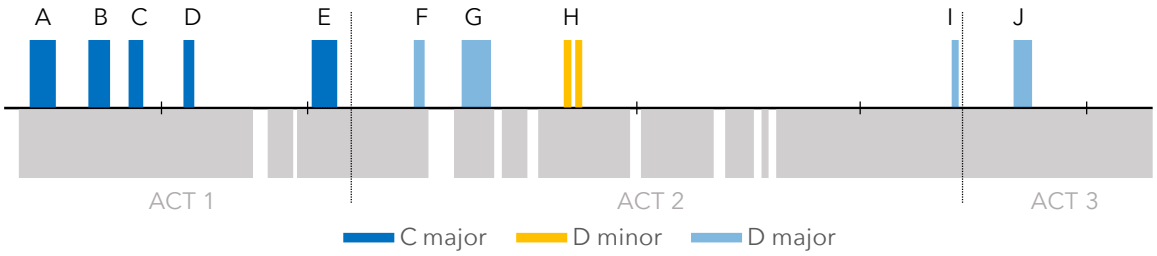


Figure 4.4a *Piper* FMO barcode diagram

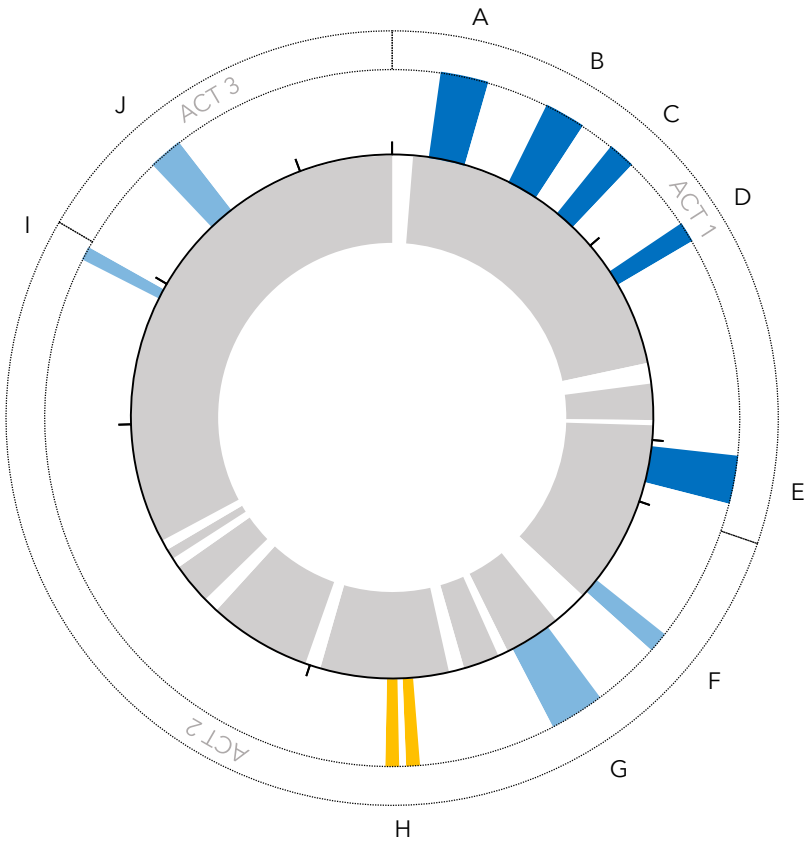
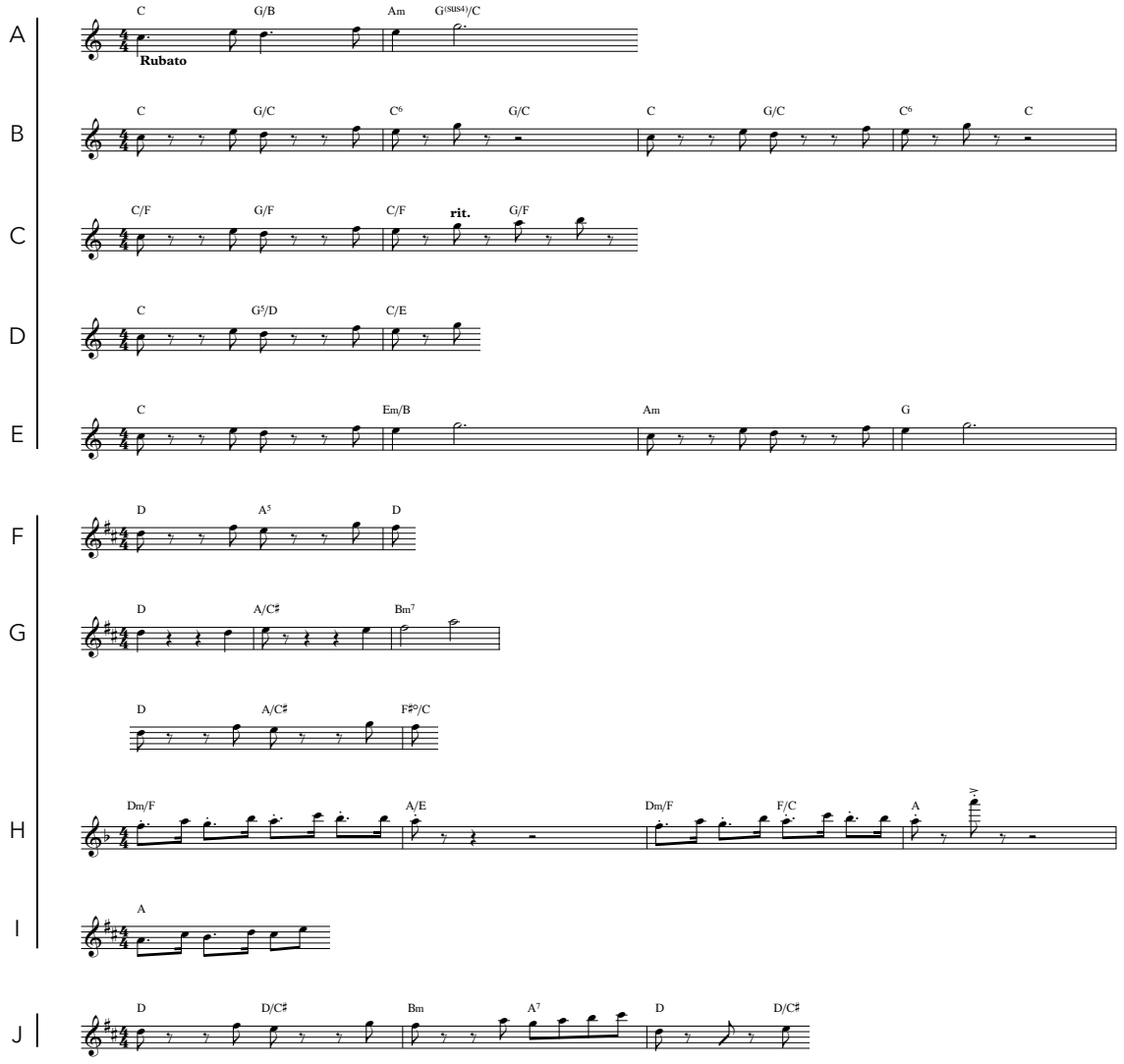


Figure 4.4b *Piper* FMO clock diagram



Ex. 4.3 Transcriptions of thematic statements in *Piper*

Statements A, B, and C span the Glory Days scene as sandpipers dash to and from the waves as they creep along the beach. Initially rubato, legato, and serene (A), the theme becomes quick and staccato (B and C), mimicking the bind of sandpipers dashing into the shot.[187] The introduction of the film's protagonist – a young sandpiper named Piper – disentangling herself from her mother's feathers cues the theme (D). Statements A–C perform the same function as statement A of both of the previously examined films. Statement D fulfils the 'introduction of the protagonist' function of statements B of the previous two. The theme accompanies Piper as she dashes along the beach (E), keen for food that her mother refuses to deliver. It is relevant to note that, though encouraged to do so, Piper *chooses* to leave

[187] Other collective nouns for sandpipers include a 'contradiction', a 'fling', a 'hill', or a 'time-step'.

the nest, unlike Blue who was forced into Act 2 against his will. An observation from these first few films is that, if Act 2 is entered willingly, the theme can be found in the Crossing the Threshold transition.[188]

Arriving at the beachfront, a key change – from an Act 1 entirely in C major to D major – marks the beginning stages of Act 2. Finding her feet in this new situation, a hint of theme (F) accompanies the build-up to her first upset: a wave grows and crashes over her. Back in her nest after her first failed interaction with the sea, the theme accompanies her mother's attempts to coax her back to the beach (G) and her eventual hesitant return (H). Here, the theme moves into a minor mode and flits in double-time imitating her quick, twitchy movements. The differences between statements E and H, both of which accompany a dash to the beach, are stark and tell a great deal about the difference in Piper's resolve in each act. After a second run-in with the waves, Piper retreats to the hiding place of washed-up seaweed, and the theme (and music) is removed from the score. A previously unheard music track enters as a family of hermit crabs guide Piper once again to the water's edge. Here, in the All is Lost scene, they show her their method for finding food.

Piper's newfound excitement at finding a solution to her problem sees the return of the theme (I). This hint of melody over a dominant chord slightly ahead of Act 3 pre-empts the theme's return to D major (J) as Piper catches her first clam. This dominant-tonic resolution between statements I and J heightens the theme's return at the film's climax. The lack of theme in the lengthy Aftermath of *Piper* feels remiss of the composer.[189] Piper, now accomplished and confident enough to fit in with her fellow sandpipers, is stripped of the musical theme that she spent the entire film trying to earn.

[188] This observation is made again in the following chapter with regards to Michael Giacchino's feature film scoring practices.

[189] A reminder that 'composer' acts as a synecdoche here for those involved in the process of placing music.

4.2.4 Thematic Silence in *Lou*

GLORY DAYS	Children play in a playground. They go inside, leaving toys, equipment, and clothing everywhere. A mysterious figure dashes around the playground retrieving the discarded items.
TODAY	Meet Lou, a shapeshifter made up of lost-and-found items, watching children enjoying playtime. J.J., the class bully, terrorises his classmates and takes their belongings.
CROSSING THE THRESHOLD	Lou dashes off to restore justice.
JOURNEY BEGINS	Lou steals back the stolen goods. J.J. catches and exposes Lou.
JOURNEY CONTINUES	A chase ensues.
ALL IS LOST	J.J. has a memory of the bear that was taken from him by a school bully when he was young.
FINAL PUSH	Lou forces J.J. to return the lost and stolen items. J.J. begins to enjoy being benevolent. When he finishes, Lou is gone.
AFTERMATH: SOON	J.J., now reformed, joins his classmates in a game of catch.

Table 4.5 *Lou* plot synopsis

In the previous case studies, Act 2 variation has come from tonality, meter, and mode. The ternary-act thematic design of *Lou*, scored by Christophe Beck, is shaped instead by a lengthy thematic silence in Act 2; a contrast of presence and absence rather than theme and variation. **Figures 4.5a** and **4.5b** show the placement of the short's two prominent themes: the principal theme, attached initially to the film's protagonist, and the 'bully' theme (represented in green) that sonically accompanies the film's antagonist. Both themes are confined to Acts 1 and 3.

Throughout the Glory Days sequence, a quirky, staccato groove underscores the action of a mysterious figure flitting around a playground collecting discarded toys. The groove establishes an F# major tonal centre with a tritone harmonic progression. The first thematic statement occurs as the film's protagonist, a shape-shifting body of lost items called Lou, takes on a recognisable form for the first time (statement A). The theme dances idiosyncratically around a lydian mode: a musical impression of Lou's peculiarity. This is the first short not to reveal its principal melody during the prefatory Glory Days. Once Lou has been revealed, the film's antagonist is introduced with his own theme. J.J. steals the

belongings of his classmates. The titular character must quickly decide whether or not to intervene. Formulating a plan, Lou shuffles off, Crossing the Threshold into Act 2.

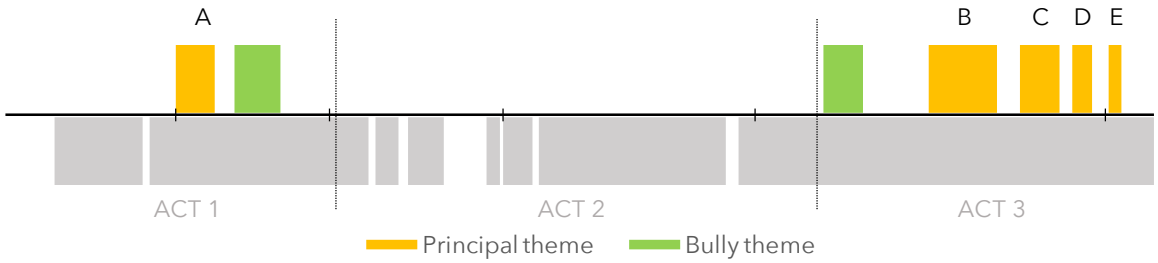


Figure 4.5a *Lou* FMO barcode diagram

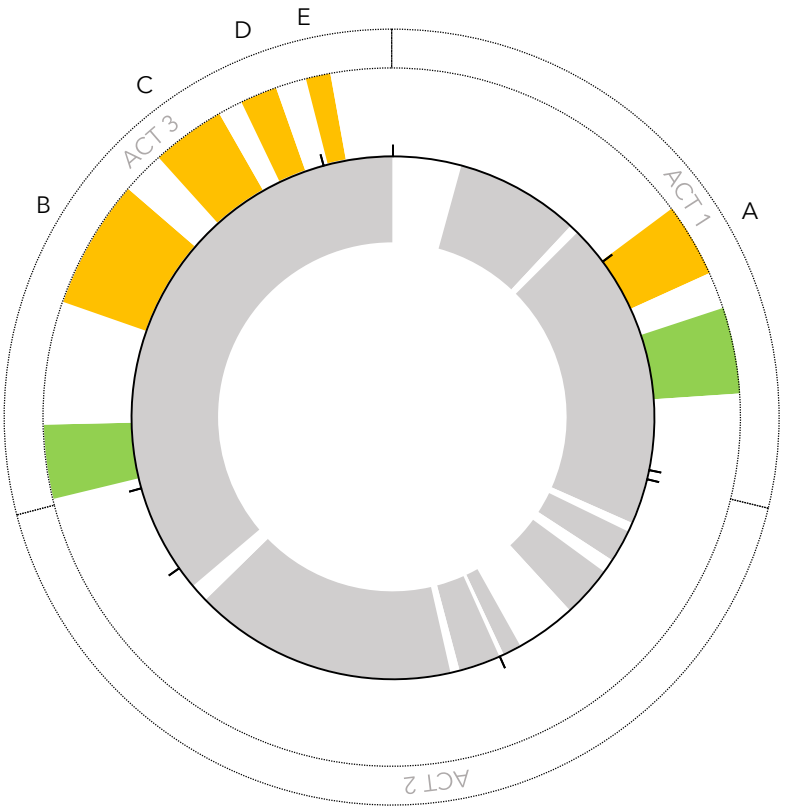


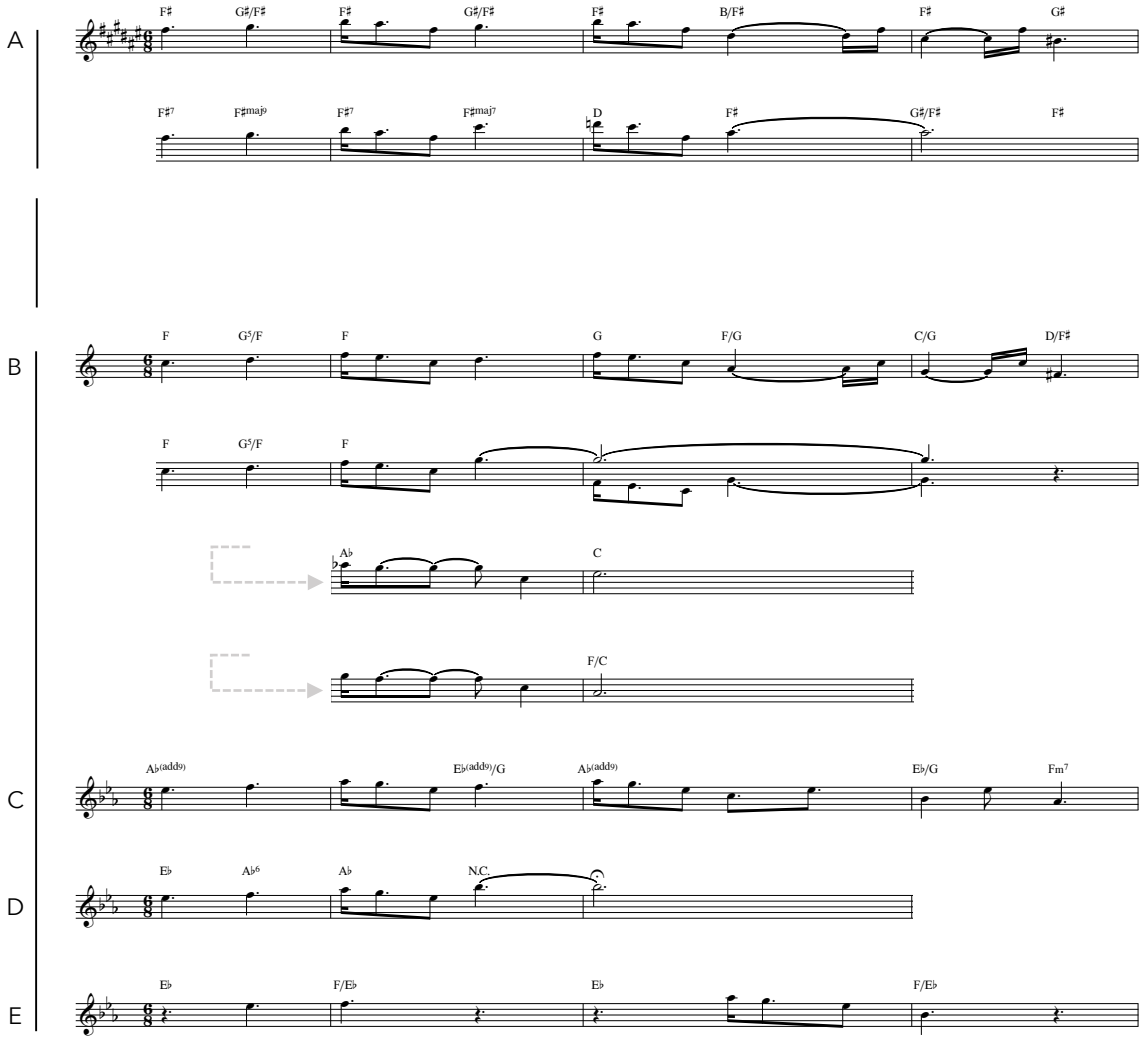
Figure 4.5b *Lou* FMO clock diagram

Act 2 is entirely without theme. Throughout the act, the power dynamic shifts back and forth between the pair as they fight for ownership of the bag of stolen goods. The composer could have chosen to imitate this back and forth with a musical interaction between the two character themes. Instead, the score is made up of an assortment of stock gestures and driving percussion lines that closely synchronise with the onscreen action. At a local level, the absence of thematic material perhaps best conveys that neither party has control of the situation. At a global level, Beck creates a long-range ternary-act form, defining this central passage by depriving it of recognisable melody. Lou finally bargains with J.J., offering the trade of an item that once belonged to the bully for the safe return of the other children's items, the memory of which makes for an earnest All is Lost scene.

Throughout Act 3, Lou's theme gradually attaches itself to J.J., who gains from Lou not only a musical theme, but an appreciation of benevolence. Beck does not return to the F# major key centre he established at the beginning of the film, but instead moves through the tonal centres of C major (B) and E-flat major (C, D, and E) as the theme undergoes a number of reharmonisations (see **Example 4.4**).[190] The lack of tonal and harmonic stability is a nod perhaps to the ever-changing form of Lou and a contrast to J.J.'s 'bully' theme, which is presented in an unmoving A-flat mixolydian mode performed by solo cello both times it appears.

The ternary-act tonal design of the principal theme plays out as **F# major » thematic silence » C major and E-flat major**. As F# major is established throughout Act 1 but not returned to, it might best be described as an *establishing tonic*. Similarly, E-flat major dominates the climactic final scenes of the film and might best be considered the *concluding tonic*. Statement B may best be understood to have a transitional tonality existing only while Lou teaches J.J. A reductive formula for the tonal design of the theme, disregarding the one-off C major statement, could be described as **establishing tonic » thematic silence » concluding tonic**. The reassignment of the tonic mirrors the reassignment of the theme from one character to another.

[190] The alignment of statement E in the notation of Ex. 4.4 appears skewed, but highlights the realignment of the starting note, beginning on beat 4 rather than beat 1 as before.



Ex. 4.4 Transcriptions of principal thematic statements in *Lou*

4.2.5 Diegetic and Instrumental Design in *Sanjay's Super Team*

GLORY DAYS	Meet Sanjay who is watching superhero cartoons. Sanjay's dad comes into the room to pray. He turns the television off, much to Sanjay's annoyance.
TODAY	Sanjay is made to join his father. Retrieving a confiscated toy from his father, he accidentally sets its cape on fire from an oil lamp in the shrine. While putting out the cape, he extinguishes the lamp.
CROSSING THE THRESHOLD	Sanjay is transported to an imaginary god world.
JOURNEY BEGINS	A demon collects weapons with which to attack Sanjay. Sanjay lights a lamp in the centre of the room, blowing the monster down with a flash of white light.
JOURNEY CONTINUES	Sanjay is joined by three heroic god figures, who fight the demon.
ALL IS LOST	The demon fights off the gods, knocks Sanjay down, and disintegrates the gods' weapons.
FINAL PUSH	Sanjay determinedly rushes forwards to save the day. He is transported back to the real world where he shows his dad a drawing that depicts the gods as superheroes.
AFTERMATH	n/a

Table 4.6 *Sanjay's Super Team* plot synopsis

Like *Lou*, *Sanjay's Super Team* exhibits a clear three-act thematic form shaped chiefly by a lengthy thematic silence in Act Two. Though the themes of the first and final acts are related by mere presence, composer Mychael Danna also communicates transformation over the course of the story by exploiting dichotomies in the music's diegetic level, the timbral palette, and the strictness of musical time. Act 1's thematic statements are presented diegetically as an electronic synthesiser blares out of an on-screen television set under the guise of the title sequence and underscore of a superhero cartoon (statements A and B). The pulse is a metronomic 4/4 time. In Act 3, the theme returns non-diegetically to support the film's touching conclusion and is performed on acoustic instruments including the bansuri, piano, and sitar (D–G). The pulse takes a freer tempo, flowing with a slow, rubato 3/4 feel. The instrumentational transference from modern synthesiser to traditional ethnic instruments echoes Sanjay's maturing appreciation for his heritage. Moving from the diegetic television screen to the non-diegetic world is also imitative of Sanjay's attention and awareness, moving from inside the box to the world around him.

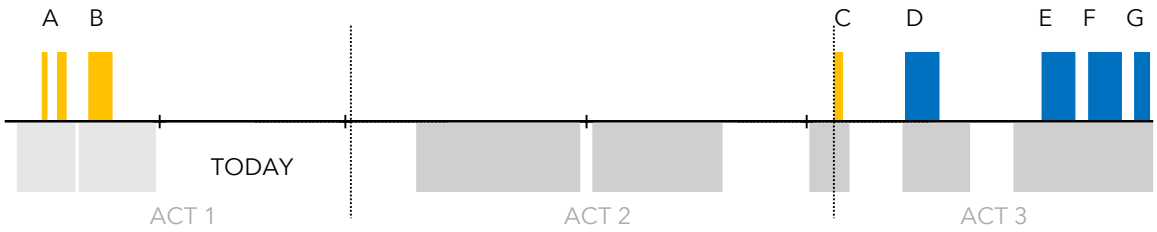


Figure 4.6a *Sanjay's Super Team* FMO barcode diagram

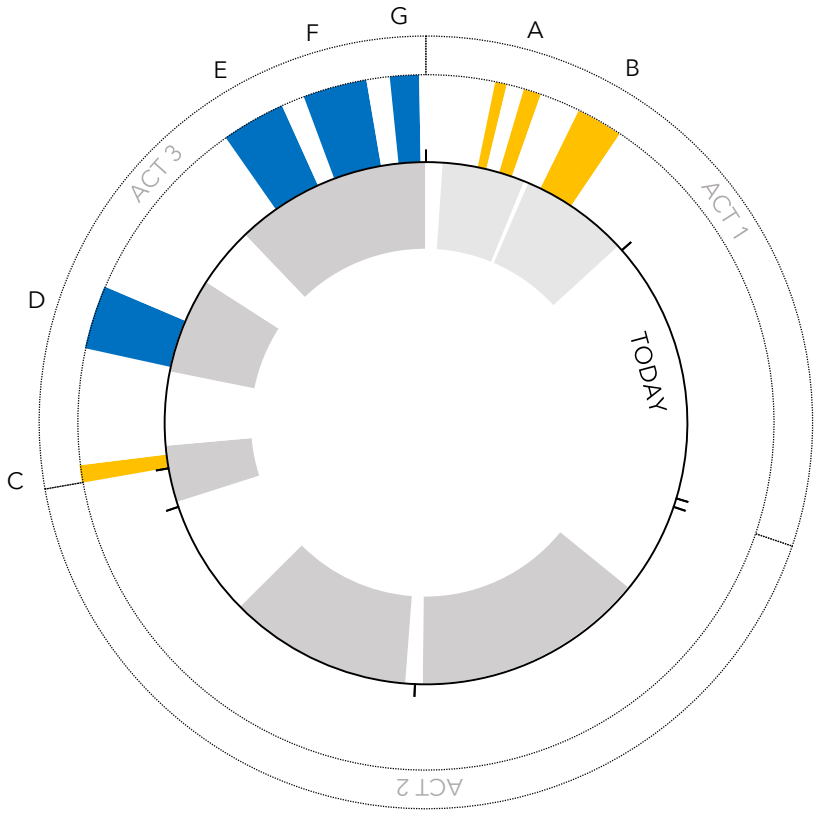


Figure 4.6b *Sanjay's Super Team* FMO clock diagram

Introducing the theme within the diegesis is an uncommon scoring choice. Filmgoers do not expect music to cross over the diegetic threshold, particularly in the direction of *within* (diegetic) *to without* (non-diegetic). Pixar composers will occasionally embed musical themes within the fictional world once they have been established at a non-diegetic level. Examples of this can be found in *The Incredibles* (Bob hums his own theme), *Ratatouille* (the principal theme issues from a television set and later a car radio), and *Incredibles 2* (Screenslaver's four-note motif chimes from a pendulum clock). Giacchino-scored short film

One Man Band has an entirely diegetic score so the theme remains at the diegetic level throughout. The only other example of a theme introduced within the diegesis before being moved into the non-diegetic score is the antagonist's theme in *Up*. The melody devised for Charles Muntz functions as the underscore for a cinematic documentary of the explorer's career. The melody then sonically identifies the real-life Muntz at a non-diegetic level when he is reintroduced later in the film. Danna's creative engagement with the film's diegesis is reminiscent of the three-act form of the soundtrack to feature-length film *Cast Away*, which deploys only diegetic and pre-existing music cues in the opening of the film and, save for one cue, an entirely non-diegetic original score in the latter stages (see **Figure 4.7**). Alan Silvestri's melodic theme is not introduced in the opening act, diegetically or otherwise, but makes up the entirety of the original score later on. However, like *Sanjay's Super Team*, the tonal design of *Cast Away* generates a tonic key in the film's final act, with all statements in A-flat major. This may be read in both cases as suggestive of a new-found stability rather than a return to one.

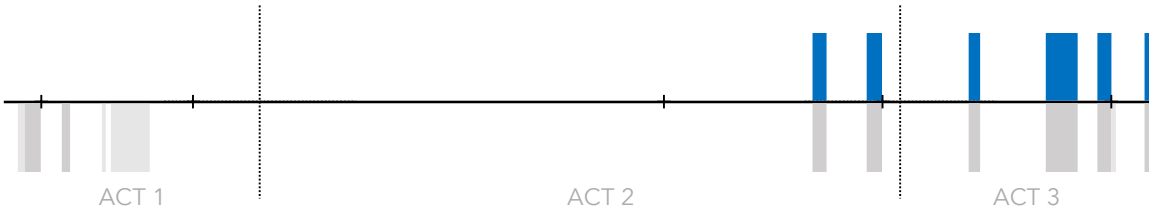
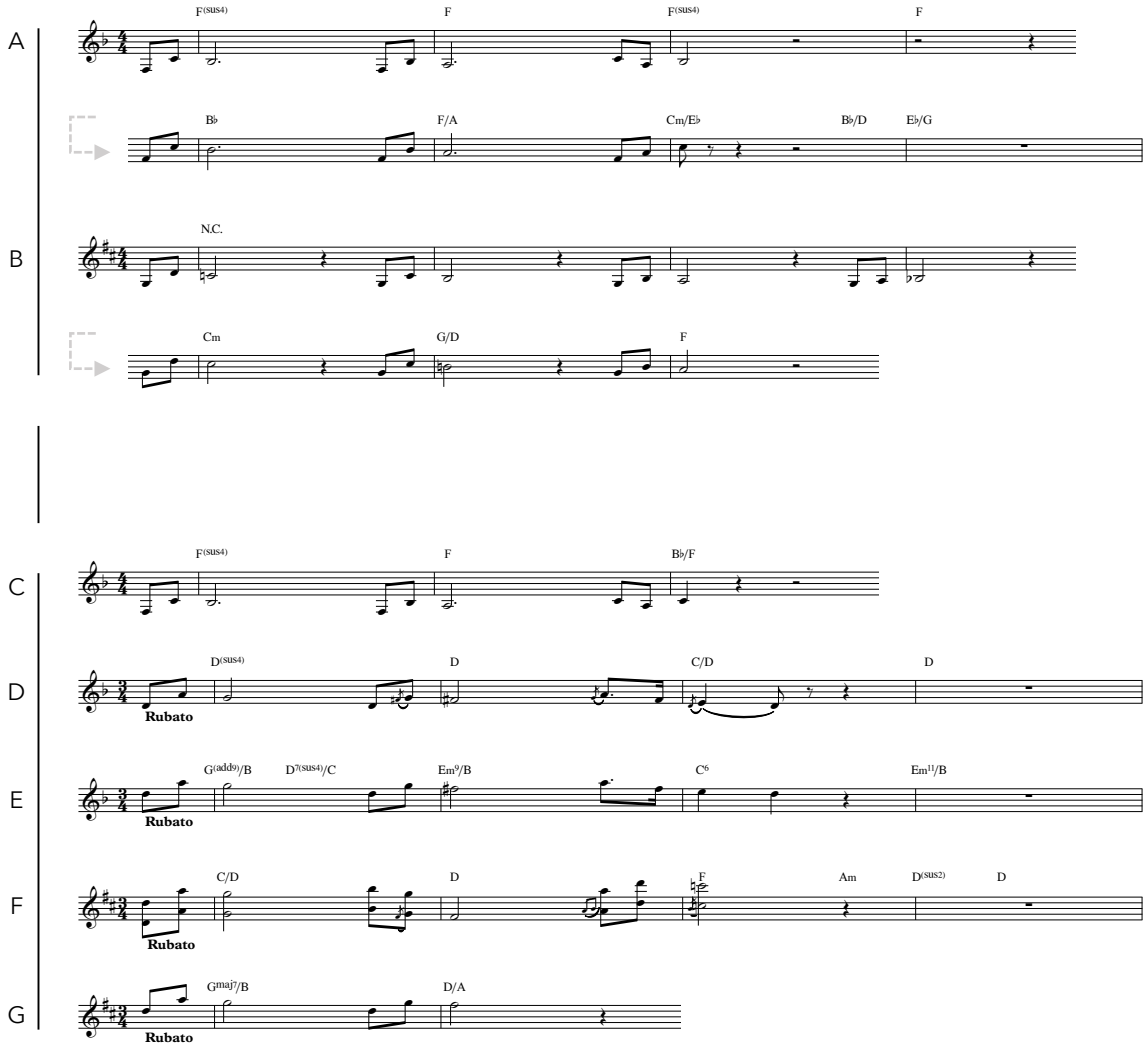


Figure 4.7 *Cast Away* FMO barcode diagram

Rather than establishing a single tonic key during Act 1 as we have seen in the previous short scores, Danna provides tonal stability only in Act 3. Statements A and B outline F major and G major tonalities respectively, while Act 3 is populated with statements of the theme in the key of D major (D–G). This tonal design may be read as a reflection of Sanjay's unstable childishness at the beginning of the film and his newfound stability at the end.

Statement C is an anomaly to the tonal schema. The theme marks the beginning of the Final Push sequence and is performed on synthesiser in the key of F major. It recalls the qualities of the first appearance of the theme, but functions non-diegetically now, supporting Sanjay in his heroic adventure rather than the 'Super Team' of his cartoons. It is only after Sanjay defeats the demon-figure that the heroic theme becomes his own; it is

taken up by more traditional instrumentation and begins to establish a grounded tonic tonality. The three-act thematic tonal design of this film could be described as **F major » thematic silence » D major** or **chromatic mediant » thematic silence » tonic**. Diegetically, it is **diegetic » thematic silence » non-diegetic**; acoustically, it is **electronic » thematic silence » acoustic**; and in terms of pulse and meter, it is **metronomic 4/4 » thematic silence » rubato 3/4**. Through thematic design alone (albeit layered), Danna reinforces a ternary-act form while artfully articulating transformation and character growth.



Ex. 4.5 Transcriptions of thematic statements in *Sanjay's Super Team*

Sanjay's Super Team is the only short in this corpus to employ a substantial change of location to differentiate Acts 1 and 3 from 2: a technique used in many feature-length films. Sanjay is transported in an instance from his front room to a fantasy world dojo. His new location establishes and corroborates the beginning of Act 2. Sanjay returns home only upon completing his task of defeating the demon-figure. At home, he repairs the strained relationship with his father. **Figure 4.8** shows that thematic material is generally deployed during scenes in which the protagonist is at home.

Figure 4.8 Thematic distribution and protagonist location in *Sanjay's Super Team*

Before moving on, I would like to briefly draw attention to the omission of music throughout the Today sequence of *Sanjay's Super Team* (labelled in **Figures 4.6a** and **4.6b**). Act 1 is structured like a feature film, with the protagonist introduced doing what he loves at the beginning of the Glory Days sequence. Music is removed as Sanjay's father turns off the television, leaving the pair in a bitter silence. The spotting strategy of removing music at the beginning of the Today sequence is one that is employed frequently in feature films. This spotting strategy functions by dramatically differentiating the sonic characteristics of the two sequences, creating an association between musical silence and despondency as music is removed at the same moment as the activity the protagonist loves, which is, in this case, watching cartoons.[191]

As the previous two case studies have shown, thematic silence plays a significant role in the structuring of a score. With the strategic removal of an established musical theme, entire sections of the film can be described as 'without theme' and therefore a variation of and contrast to passages 'with theme'. With this in mind, the following section re-evaluates *Partly Cloudy*, *The Blue Umbrella*, and *Piper* to demonstrate how thematic silence plays a significant role in shaping their scores.

[191] Chapter 6 expands upon the subject of the patterning of music and non-diegetic silence.

4.3 Quadripartite Ternary-act Form

Omission plays a central role – both literally and figuratively – in the organisation of themes in *Lou* and *Sanjay's Super Team*. A reconsideration of the scores of *Partly Cloudy*, *The Blue Umbrella*, and *Piper*, taking thematic silence into account, uncovers a convincing *four*-part thematic design embedded within the ternary-act form.

4.3.1 Act 2B Thematic Silence in *Partly Cloudy*, *The Blue Umbrella*, and *Piper*

The previous three-act reading of the *Partly Cloudy* score does not take into account the vast thematic silence in the latter half of Act 2. As **Figure 4.9** demonstrates, the film's thematic design divides into four discernible units. Zone 1 contains multiple statements and repetitions of the theme in the same key (D major) and time signature (4/4); Zone 2A contains multiple statements of the theme in a new key (C major) and time signature (6/8); Zone 2B contains no thematic statements; and Zone 3 contains the theme with the same attributes as Zone 1: D major tonality and 4/4 time. Acts 1 and 3 correspond with Zones 1 and 3 respectively.

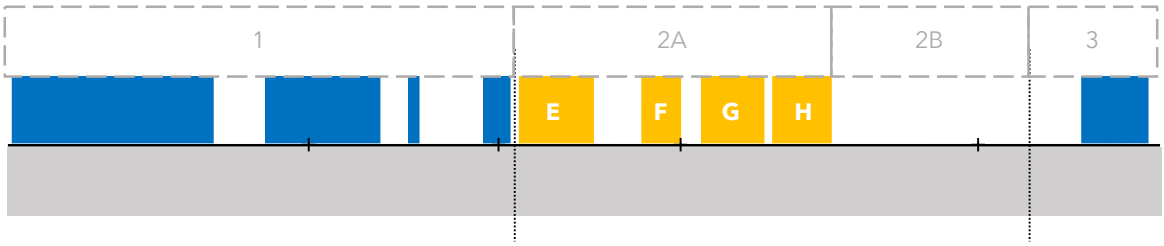


Figure 4.9 *Partly Cloudy*'s quadripartite ternary-act form

The moment that I have demarcated as the midpoint divide between the Journey Begins and Journey Continues sequences (located at the end of statement F) is contestable and requires some explanation. A little over halfway through the film, Peck, the film's deuteragonist, looks up at another, happier cloud–stork relationship: an image of a better life and a solution to his problem. This moment mirrors the midpoint conversations of many feature films in which the character has a revelation. Peck is shown a happier life but chooses to stay with Gus. Peck's eventual decision to leave Gus is marked by the end of statement H. An argument could be made for this being the true midpoint of the film as it is here that Gus' fortune changes. For the sake of continuity between films, I have labelled

the former moment as the beginning of the Journey Continues sequence. However, the moment Peck leaves Gus perhaps more conclusively provides the so-called 'reversal of fortune' required of the midpoint. This score's thematic design, as well as the colour palette of the short, corroborates this revised reading of the midpoint.

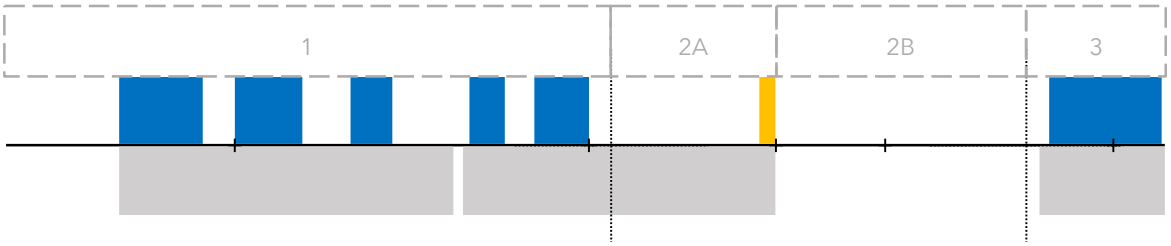


Figure 4.10 *The Blue Umbrella*'s quadripartite ternary-act form

Applying the same logic to *The Blue Umbrella* demonstrates a similar thematic plan (**Figure 4.10**): thematic material in a home key or configuration in Zone 1; thematic material modulated or in a different configuration in Zone 2A; an omission of thematic material in Zone 2B; and a return of thematic material in its home configuration at the climax of Zone 3. Unlike *Partly Cloudy*, the Act 2 thematic divide aligns perfectly with the film's midpoint which is, in this case, less ambiguous. The revelatory conclusion of the Journey Begins sequence (Blue spotting Red in the crowd) is marked with a fleeting appearance of the theme. The effect of the exclusion of thematic material in Zone 2B is exaggerated by a removal of music altogether: a musical silence that defines the act. According to the director's 'Sound and Music Structure' chart (shown in Chapter 2.3.1, p.36.), this gulf of musical silence was planned to last for only 'The Crash' scene (Journey Continues) with a 'mourning song' entering the soundtrack during the 'Broken and Drenched' scene (All is Lost).[192] This spotting suggestion was discarded during production and the result is a clearer four-part score.

Contrast between Acts 2A and 2B of *Piper* is expressed not only by a thematic void, but by an entirely new cue of music previously unheard in the film (marked * on **Figure 4.11**). The

[192] The mourning song is described in the Sound and Music Structure chart as 'Lonely, intimate, quiet' and a 'Sad version of love song'.

cue features hitherto unused instrument combinations and performance techniques. Staccato violins outline a G major chord with steady quavers, a cajon taps out fun rhythms, vibraphone plays an almost reversed theme in the lydian mode, and oboe supports the arrival of a new character: a hermit crab who guides Piper towards a solution. Piper was scared and alone in Act 2A. The midpoint reveal of a mentor character changes the bird's fortune and steadily leads her towards a much-needed feeling of autonomy. A stylistic shift in the music echoes the injection of fresh perspective that the new character brings.

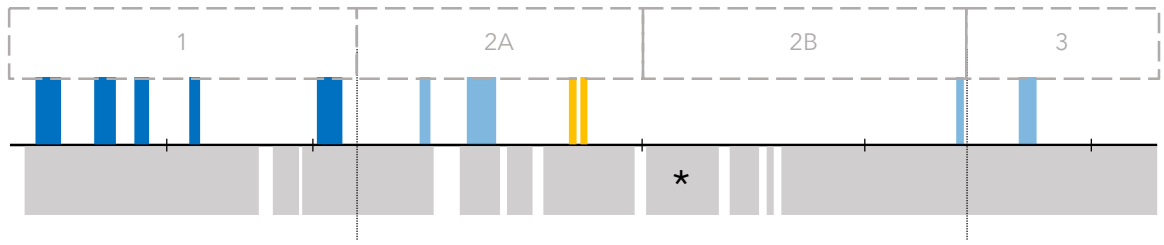


Figure 4.11 *Piper*'s quadripartite ternary-act form

These three short films demonstrate that contrast is a requirement of Act 2B, whether by the simple expedient of removing the well-established principal theme (*Partly Cloudy*, *The Blue Umbrella*, and *Piper*), initiating a musical style to contrast those previously heard (*Piper*), or by removing music altogether (*The Blue Umbrella*).

4.3.2 Act 2B Orchestration in *Lou* and *Sanjay's Super Team*

As Act 2 of *Lou* and *Sanjay's Super Team* is thematically vacant, we must look for contrast in the music cues themselves in search of support for a quadripartite ternary-act reading of the score. That is, to ask: *Does the score acknowledge the differences between Act 2A and Act 2B?*

Both composers acknowledge the midpoint in part by allowing a short break in the music, demarcating the end of the Journey Begins and beginning of the Journey Continues sequences. The cue distribution line on the Film Music Organisation diagram shows only the binaries of 'music and musical silence', and 'non-diegetic and diegetic score'. For a more detailed assessment of the cues, additional annotation is required.

The score for *Lou* demonstrates a comprehensive divide between the two halves of Act 2. The Journey Begins sequence is sparsely scored with occasional musical gestures supporting the drama as Lou tries to resolve his problem by serruptitiously stealing back the stolen items. Upon capture, Lou reveals himself to J.J.: a revelation that marks the midpoint of the film. A chase ensues, continuing for the duration of the Journey Continues sequence. The chase is sonically distinctive by its exclusive use of untuned percussion instruments, clarified in **Figure 4.12** with additional annotation. The unique timbral palette provides obvious musical contrast to the two halves of Act 2, reflecting the narrative's shifting gears.

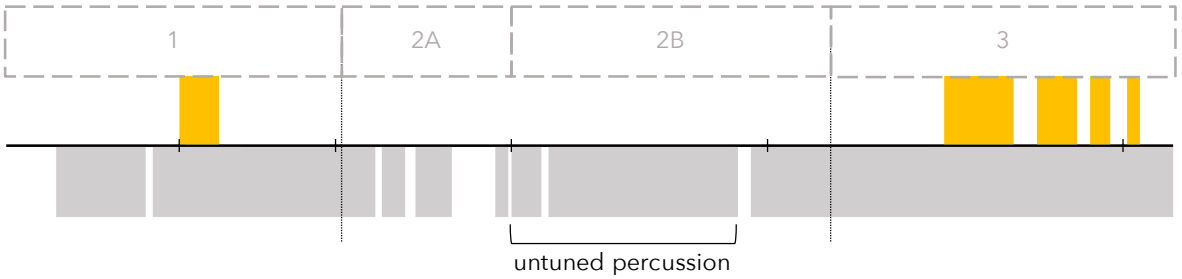


Figure 4.12 *Lou*'s quadripartite ternary-act form

Act 2 of *Sanjay's Super Team* demonstrates a subtler musical contrast between 2A and 2B than *Lou*. In Act 2A, Sanjay battles the demon-figure alone and, after the beat of calm that marks the midpoint (made obvious by an entirely white screen),[193] he is joined by three superheroic God figures. Both scenes are supported by an almost entirely percussive score. The subtle difference between the two is the scale of the percussion ensemble. During Act 2A, a single tabla and other single-player hand percussion support Sanjay's frightened but heroic efforts. The ensemble is small and, until the climax of the sequence, the percussionists take it in turns to contribute, providing a near-linear part. After the pause and once the Gods have appeared, the score calls upon a larger percussion ensemble performing on bigger, deeper drums. The rhythms are stronger and more consistent, driving the action forwards with confidence and pace. Cleverly responding to the size and

[193] The same production technique is used at the midpoint of *Lava*, discussed later in this chapter.

confidence of the onscreen characters, Mychael Danna manages to delicately imbue each half of the central act with a sonic identity of its own.

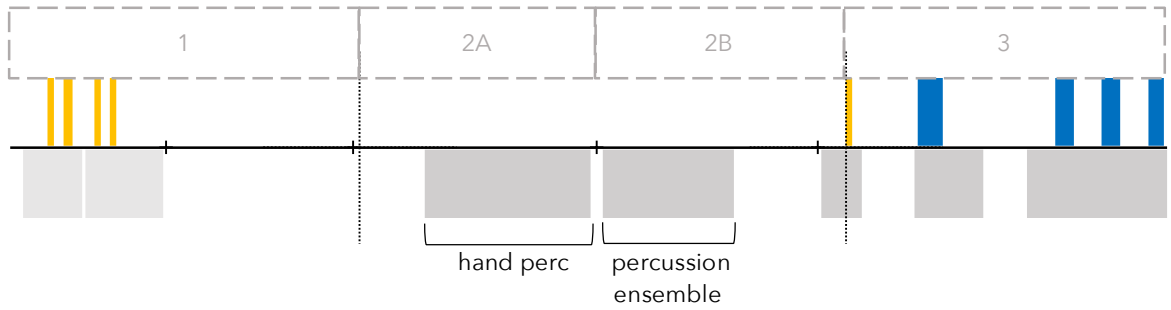


Figure 4.13 *Sanjay's Super Team*'s quadripartite ternary-act form

Figure 4.13 shows an annotated FMO diagram with Act 2 cue descriptions. A reductive ternary-act description of the score might read: Act 1, diegetic synthesisers with theme; Act 2, non-diegetic percussion; Act 3, non-diegetic traditional acoustic instruments with theme. However, a quadripartite ternary-act reading of the score might be described: Act 1, diegetic synthesisers with theme; Act 2A, non-diegetic hand percussion; Act 2B, non-diegetic percussion ensemble; Act 3, non-diegetic traditional acoustic instruments with theme. Taking the notably divided first act into account, the film might be further broken down into five sections: Act 1 (Glory Days), diegetic synthesisers with theme; Act 1 (Today), no music; Act 2A, non-diegetic hand percussion; Act 2B, non-diegetic percussion ensemble; Act 3, non-diegetic traditional acoustic instruments with theme.

4.3.3 Quadripartite Ternary-Act Thematic Design in *Bao*

GLORY DAYS	A Chinese-Canadian woman lovingly prepares a meal of steam buns.
TODAY	She and her husband sit down for dinner. He scoffs his food down and leaves. The woman's bao bun comes to life.
CROSSING THE THRESHOLD	She accepts the appearance of the newfound child.
JOURNEY BEGINS	The woman and the bao spend quality time together as he grows into a teenager.
JOURNEY CONTINUES	The woman tries to retain the close relationship she once had with her bun son, who moves out and gets engaged.
ALL IS LOST	In a fit of anger, the woman eats the bao and gasps, shocked at what she's done. She mourns her loss.
FINAL PUSH	Her real son returns home, bringing steamed buns to cheer her up. The pair sit and eat together, wordlessly reconciling.
AFTERMATH: SOON	The family, including fiancée, prepare steamed buns together.

Table 4.7 *Bao* plot synopsis

The deployment of Toby Chu's pentatonic theme for *Bao* forms three distinct clusters, each relating to the three acts of the film: a ternary-act form based solely on placement. However, the tonal design of the thematic statements requires a four-part reading. **Figures 4.14a** and **4.14b** show that, rather than bookending the film with themes in a tonic key or working towards a concluding tonic, it is during Act 2B that Chu finds tonal stability in the key of A-flat major.

The short opens like a feature film with a vibrant Glory Days montage. As the protagonist demonstrates a passion for cooking, a full eight-bar statement of the theme plays in the key of B-flat major (statement A). Chu composed the score at the piano with 'the right hand […] in a Chinese [major pentatonic] scale and the left hand in a Western major scale' to convey the compound culture of the Chinese-Canadian family of the short.[194] The film's title logo marks the end of the Glory Days and then cuts to a dining room in which the Today sequence takes place. Music is removed from the soundtrack and the theme remains absent for the rest of Act 1. B-flat major, as the central key signature in Act 1, functions as

[194] 'Composer Toby Chu breaks down his own score from Pixar's "Bao" short,' at https://www.youtube.com/watch?v=phcruTgPXvk (12th Nov, 2018) (Accessed 15th Jan, 2020)

the establishing tonic key. When a steamed bun reveals itself as a humanised baby (the Opportunity of the sequence), music returns to support the fantasticality of the situation. The proagonist decides to keep the bun-child and a brief crossfade acts as a swift visual Crossing of the Threshold.

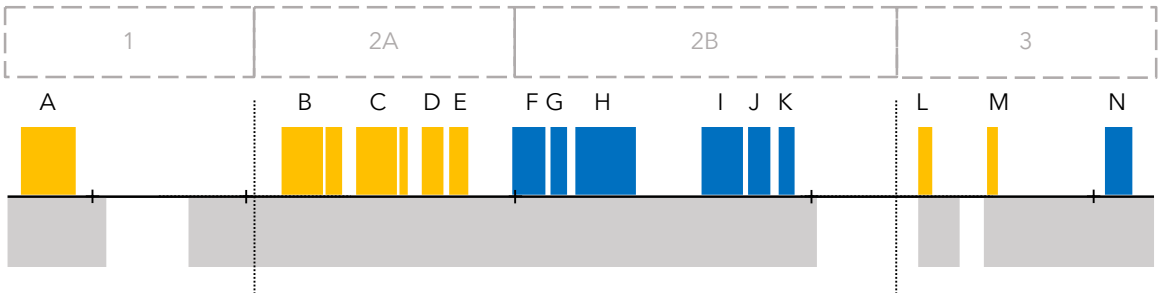


Figure 4.14a *Bao* FMO barcode diagram

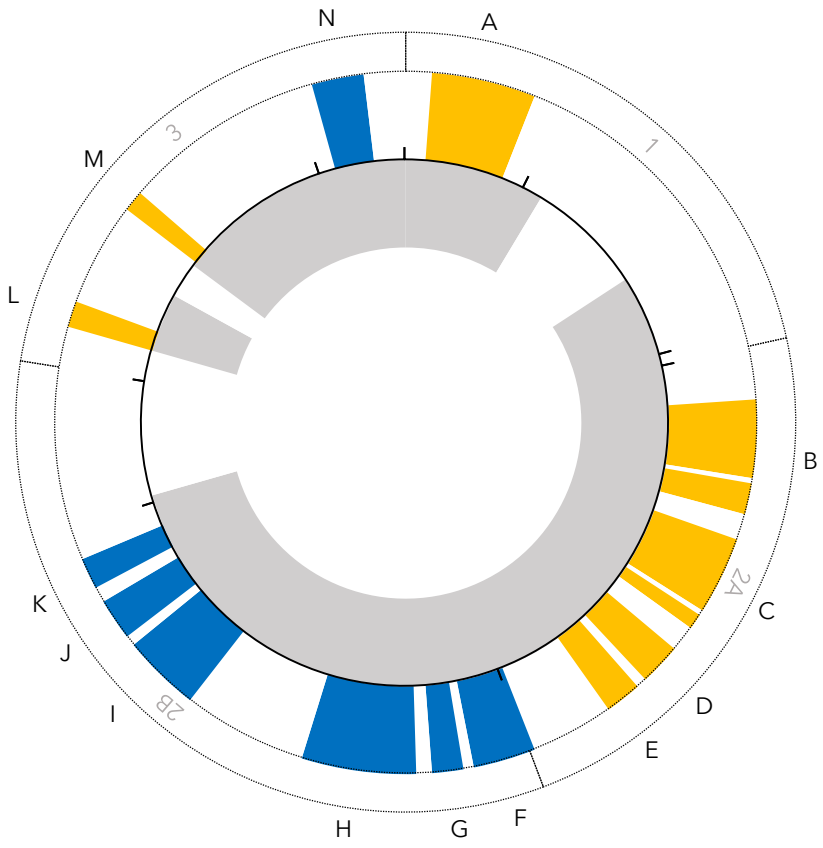
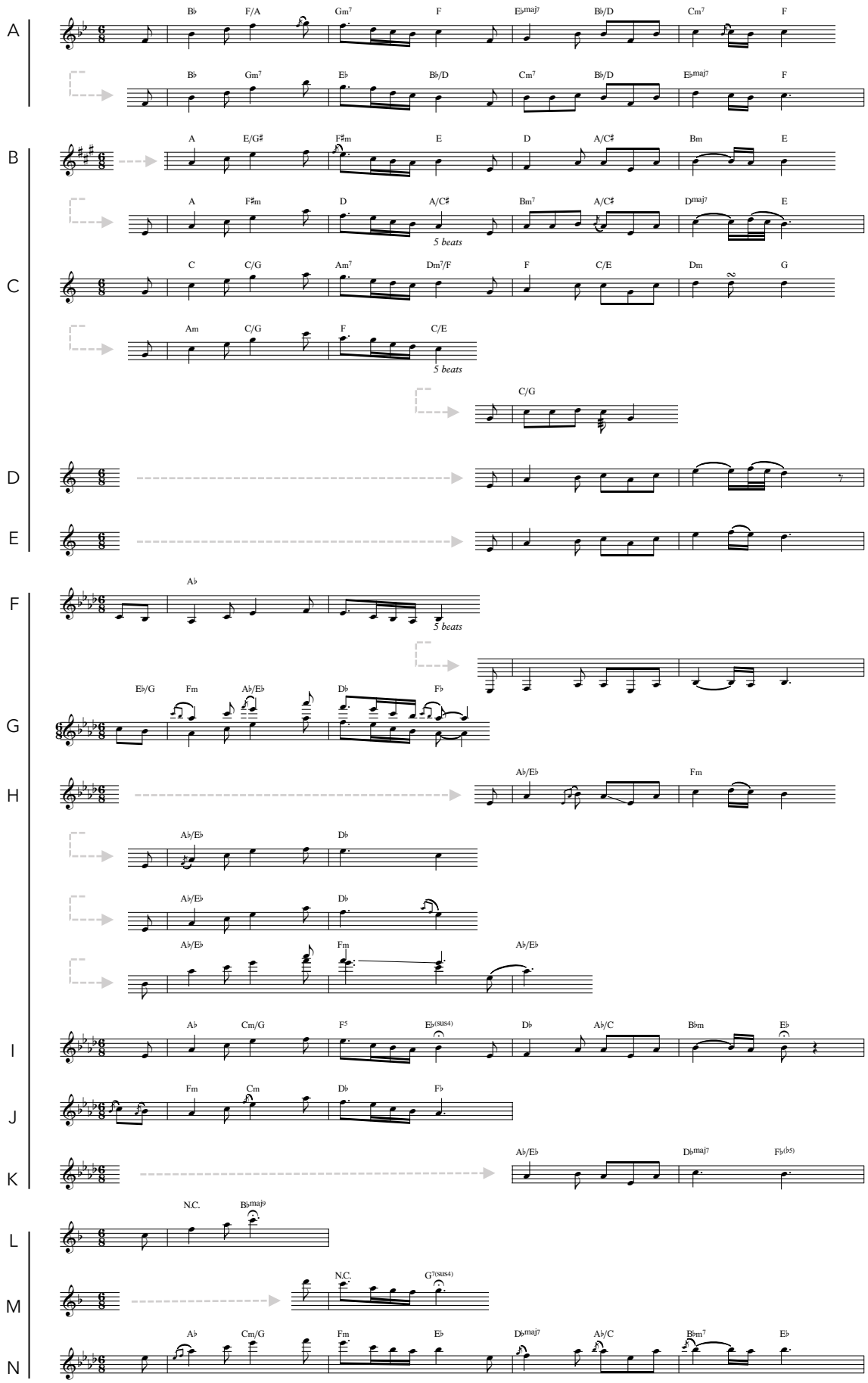


Figure 4.14b *Bao* FMO clock diagram



Ex. 4.6 Transcriptions of thematic statements in *Bao*

Throughout Act 2A, the theme is heard multiple times, moving through the keys of A and C major (B–E) as the relationship between the mother and the anthropomorphised dumpling develops. A modulation to A-flat major coincides with the moment the relationship falls apart, as Bao becomes a teenager. The pair live separate lives hereafter: the mother desperate to hold on to the relationship; the son with adolescent indifference. The theme is repeated in the key of A-flat for the remainder of the act (F–K). The contrasting approaches to the tonal design characterise each half of Act 2 with the evolving key centres reflecting the developing mother-son relationship (2A) and the fixed A-flat major imitating the stubbornness of the son (2B).

Music falls away to leave the All is Lost scene musically silent. Music and theme then return with the arrival/reveal of the real son in Act 3. Statements L and M are soft, short, and subtle adumbrations of the theme's first few notes on piano in the key of F major. The son and mother reconnect and, with a jump forward in time, the Aftermath finds the family making bao buns together in a scene that echoes the film's opening. The Aftermath contains the final outing of the theme, which plays in A-flat major (N). With such a seemingly deliberate approach to tonal design in Act 2, one might expect the closing tonaility of B-flat major to give the film a sense of tonal closure. It is an interesting scoring decision to relate the final cue's tonality to those of the section of the story in which the mother-son relationship was at its most trying. This may be a coincidence or it may purposefully relate, suggesting perhaps that the A-flat major represents the complex relationship of mother and son and the dynamic tension that that entails.

The six films analysed and reanalysed above exhibit scores that can be read at tripartite and quadripartite levels simultaneously. Each score employs combinations of musical and thematic occurrence, absence, variation, and recurrence to contribute in a meaningful way to the formal logic of the story it accompanies. These structural decisions are informed not by 'absolute' musical logic or the idiosyncrasies of individual films, but by narrative events that transcend the onscreen happenings. Ergo, at least in these examples, narrative form begets film music form.

4.4 Chorus Organisation in *Lava*

At the conception of Pixar during the early stages of *Toy Story*, the company resisted the advice of Disney executives who believed that, 'since they'd had such success with musicals, [Pixar] too should fill [their] movie[s] with songs.'[195] Their steadfast stance on this policy seems to have wavered slightly, for in 2014 they produced the short film *Lava*: a tale told almost entirely through song with a Disney-like combination of diegetic character vocals and non-diegetic instrumental accompaniment. The film's director, James Ford Murphy, wrote the song and recorded the ukulele part for the soundtrack.

GLORY DAYS	Helicopter shot of a large volcano with birds flying around it.
TODAY	Meet Uku, a lonely volcano, who sings a song about his loneliness as he watches loved-up couples all around him.
CROSSING THE THRESHOLD	A time-lapse shot as millions of years pass.
JOURNEY BEGINS	Uku sinks gradually into the ocean. Lele, a feminised volcano, explodes into existence.
JOURNEY CONTINUES	Uku looks at Lele longingly until he disappears below the water.
ALL IS LOST	Underwater, Uku hears her song about him. It fills him with lava.
FINAL PUSH	Uku explodes out of the water to join Lele. The pair sing together.
AFTERMATH	n/a

Table 4.8 *Lava* plot synopsis

Rather than mapping an instrumental theme, the Film Music Organisation diagrams for *Lava* map the placement of repeated choruses: the song-score equivalent of a theme. **Figures 4.15a** and **4.15b** reveal not a quadripartite ternary-act form per se, but certainly a four-act form with choruses marking and characterising four discrete equal parts, i.e., Choruses B and C relate no more to one another than to A and D.

[195] Catmull, E. and Wallace, A., *Creativity, Inc.: Overcoming the Unseen Forces That Stand in the Way of True Inspiration* (London: Bantam Press, 2014), p.xi.

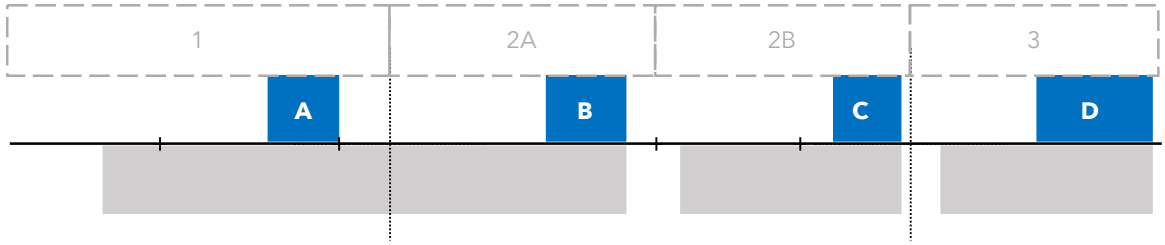


Figure 4.15a *Lava* FMO barcode diagram

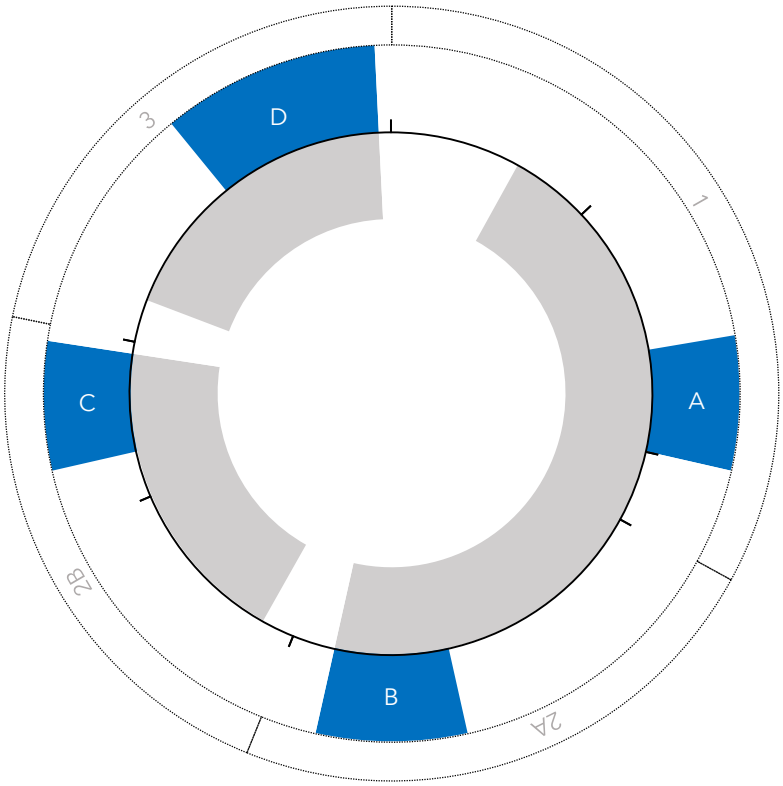
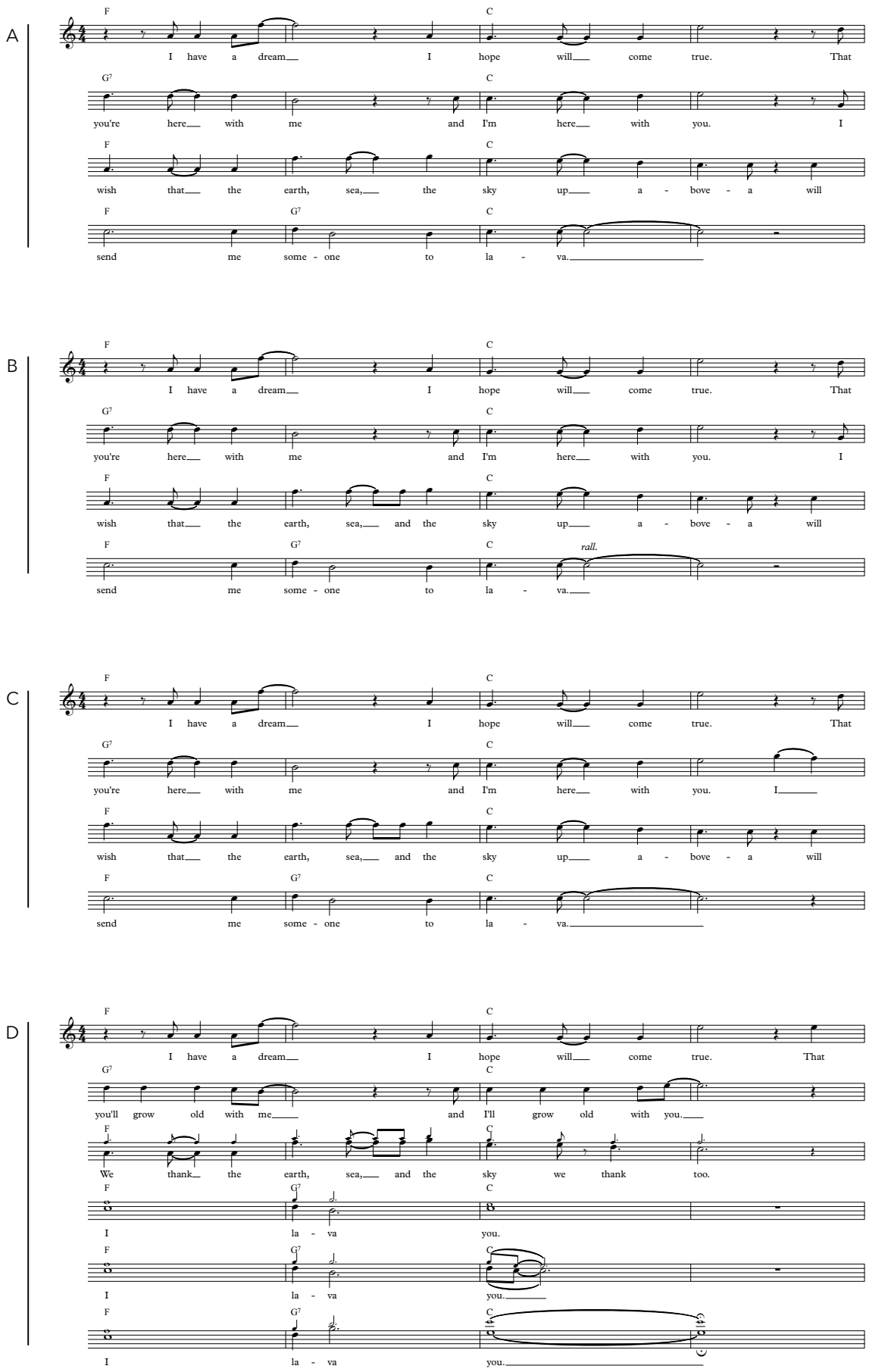


Figure 4.15b *Lava* FMO clock diagram



Ex. 4.7 Transcriptions of choruses in *Lava*

Breaks in the music mark the midpoint (i.e., the divide between Acts 2A and 2B) and the beginning of Act 3. Though the transition between acts 1 and 2 is scored through, it is underscored with an instrumental break. Soft ukulele strumming bridges the two acts as the time-lapse visuals move the story forwards by 'millions of years',[196] navigating viewers into Act 2.

As illustrated in the Film Music Organisation diagrams, each chorus signposts the final moments of each act. The mere locality of these choruses provides some form of structural suggestion as to the story form but, as with any repeating motif, be it musical, visual, sonic, or otherwise, it is the changing elements that comment most comprehensively upon the unfolding narrative. Musically, however, all four choruses in this score are rather similar. The instrumentation of diegetic voice and non-diegetic ukulele remains unchanged throughout; each is performed in the key of C major; and, as the thematic transcriptions in **Example 4.7** demonstrate, there is little deviation from the melody, harmony, or lyrics established in the first chorus.[197] It may be reasonably assumed from the Film Music Organisation diagrams and chorus transcriptions alone that these choruses act as mere structural markers rather than storytelling devices. However, through subtle changes in tempo and vocal performance, each chorus (and therefore act) differs and is consequently characterised. The first chorus is sung by the male protagonist, Uku; the second is a considerably slower rendition performed by the same character;[198] the third, back up to tempo, is crooned by the female love interest, Lele; and the final chorus is performed as a duet by the pair with altered lyrics (e.g., 'we' rather than 'I') and a repeated reprise of 'I lava you'. These subtle differences in lyrical content, vocal performance, and tempo subtly characterise and effectively reflect the four-part progression of the story: 1) Uku is alone but hopeful; 2A) Uku is alone and hopeless; 2B) Lele arrives to renew Uku's hope; 3) Uku and Lele are happy and together at last.

The following chapter includes a revealing comparison of the distribution of choruses in *Lava* and feature-length film *Coco*.

[196] *Lava* is described as 'a musical love story that takes place over millions of years' on the Pixar website.
[197] The only lyric deviations are in the final chorus (statement D).
[198] An indication of this on the FMO diagram is that chorus B is slightly lengthier than A and C.

4.5 The Cutting Room Floor

There are five short film scores in the Pixar collection (since Giacchino's first in 2005) that do not show signs of long-range cohesion nor compatibility with the narrative form. This is either because musical themes are not deployed across the entire film and therefore do not employ a long-range strategy or because they do not include any repeating material. As the five shorts listed below do not support the emerging theory, they will not be scrutinised with the same level of detail. However, the following section provides an outline of the scores and indicates what they contribute to the central hypothesis of this thesis.

Firstly, *Presto* with music composed by Scot Stafford. The decision to exclude *Presto* from the main body of this chapter is chiefly that the score has no discernible thematic material. Instead, it is composed in the style of early Warner Bros. cartoons, compiled from an array of genres and stock musical gestures that 'mickey-mouse' the visual action.[199] Due to the brevity of each cue, the score has little in the way of a large-scale plan.

Day & Night and *One Man Band*, both scored by Michael Giacchino, have perplexing internal ternary thematic tonal designs, which offer little to the film as a whole. *Day & Night*'s ternary form sits entirely within Act 1 with each thematic statement separated by musical silence. **Figure 4.16** demonstrates how the dispersion of the theme resembles a one-act version of quadripartite ternary-act form. While all four statements are technically in G major, statement C shifts up a tone to begin the tune in the dorian mode, harmonically supported by a ii-V-I harmony rather than the previous I-V (**Example 4.8**), hence its orange representation in the FMO diagram below.

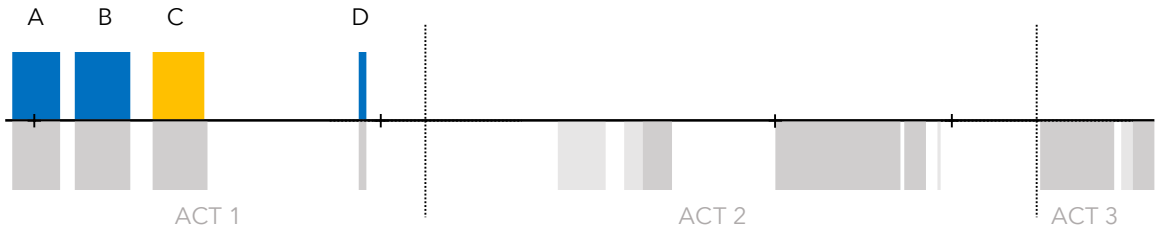
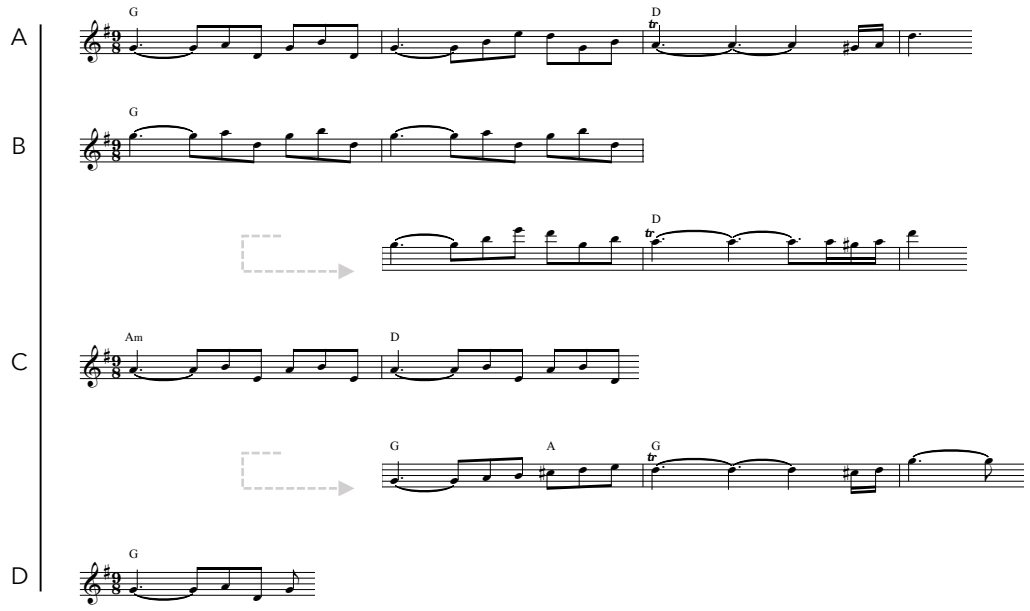


Figure 4.16 *Day & Night* FMO barcode diagram

[199] *Mickey-mousing* is a scoring technique in which music mimics every little action on screen through close synchronisation with the visuals. It is often, though not exclusively, used as a comic device.



Ex. 4.8 Transcriptions of thematic statements in *Day & Night*

Day & Night is a film that sonically relies on sound design and short diegetic music cues to showcase differences between the two characters and support visual gags. Nevertheless, non-diegetic cues signpost and characterise the Journey Continues and Final Push sequences (Act 2B and Act 3), providing some musical support to the latter quadrants of the film.

One Man Band's internal ternary form is harder to rationalise as it straddles Acts 1 and 2 (**Figure 4.17**). The score itself is entirely diegetic, performed by duelling onscreen musicians. Each performer develops a theme in increasingly virtuosic ways, modulating through a series of keys as tensions between the two musicians rise. I propose that the modulations of this film are based on the degree to which each musician wishes to interrupt the other rather than any long-range design. The return to D minor in this instance is, I speculate, either an adventitious accident or chosen for orchestration purposes. Certainly, the shape of the tonal design is not corroborated by the film form.

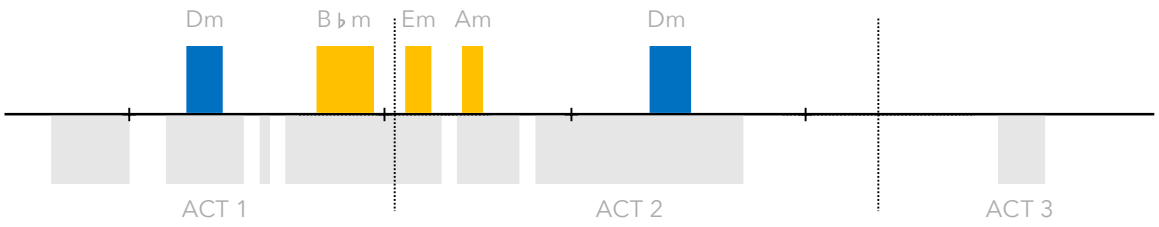


Figure 4.17 *One Man Band* FMO barcode diagram

Giacchino's score for *Lifted* (Gary Rydstrom, 2006) functions as a tool for localised joke-telling rather than long-range storytelling. Music quickly becomes associated with success in this film: the interrupted successes of a young alien named Stu as he takes his abduction test. Every time Stu's efforts fail, music is immediately removed from the soundtrack. Musical silence quickly becomes synonymous with – and a shorthand for – failure. The patterning of music and musical silence displayed in **Figure 4.18** closely traces the rhythm of setups and punchlines. A short, melodic theme is added to revive and enhance the gag in Act 2B rather than to identify a character or situation. Rather than function as a storyteller, Giacchino's role in this production is that of jokester, providing a number of short, sci-fi vignettes the interruption of which reinforce the punchlines in the series of gags that make up the film's plot. The scores for this and the aforementioned Giacchino shorts are each unique in the Pixar short film catalogue, shaped by the superficial happenings of the individual film rather than by a common formal logic.

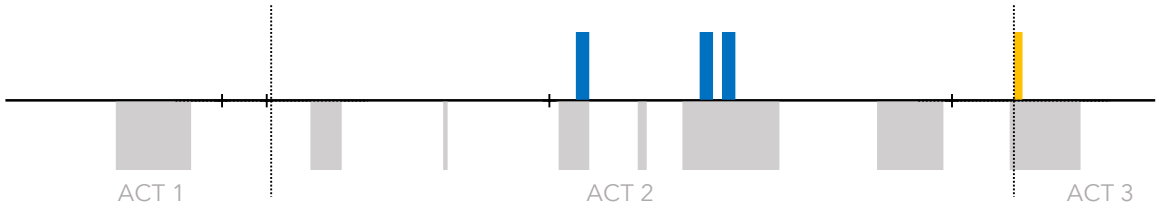
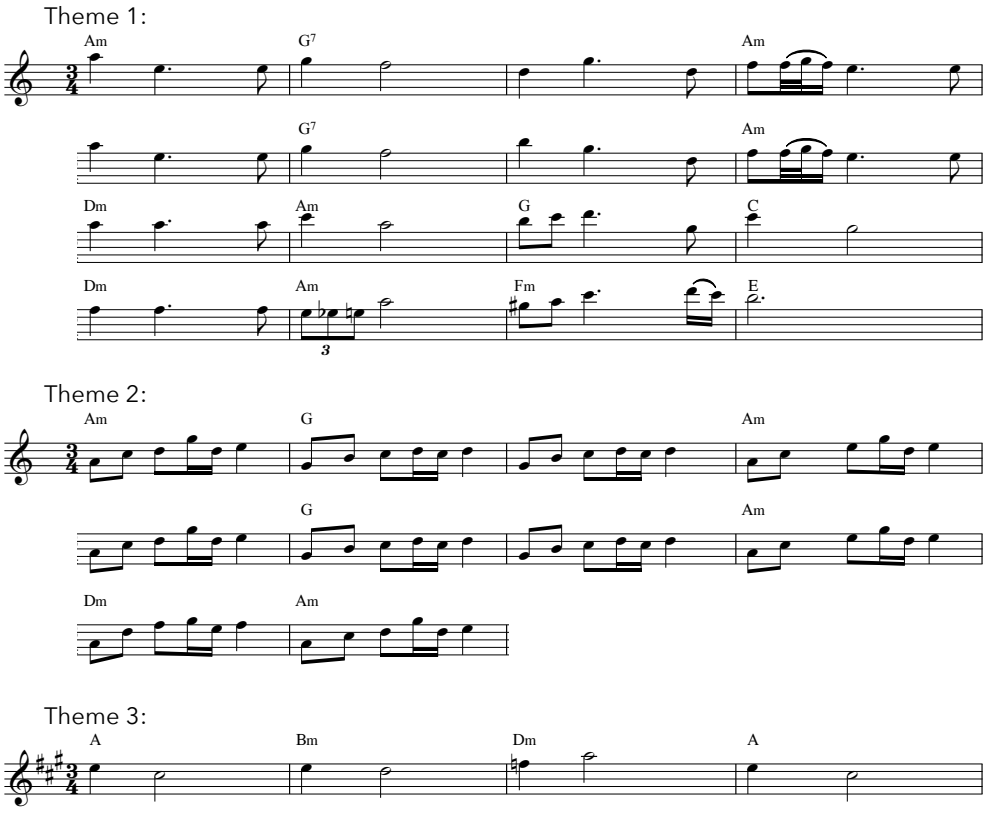


Figure 4.18 *Lifted* FMO barcode diagram

Lastly, *La Luna* (Enrico Casarosa, 2011) whose score – again, composed by Giacchino – is made up of three main themes that span the entire film (notated in **Example 4.9**). This short has not been included in the main body of the chapter because, despite its ordered formal design, its organisation is in several ways anomalistic to the quadripartite ternary-act model showcased in this chapter. Theme 1 frames the film with statements in the Glory Days scene and the Later Aftermath, giving the score a requisite feature of ternary-act form. Both scenes feature the three males of the story (a son, father, and grandfather) in a rowing boat. In the opening, they bring their boat to a stop, each silent and separated. In the closing scene, the trio are back in the boat, embracing and congratulating one another on a successful mission; a connection is made visually and musically. Both statements of the theme are in the key of A minor and performed on nylon-string guitar, providing tonal and timbral

closure to the score. However, by way of representing difference between the scenes, the melody in the closing scene is joined by a clarinet at the repeat as strings rise to provide a richer orchestration. It is possible that the clarinet and strings represent the father and grandfather as they finally come together to support the son who is, in this speculative analogy, represented by nylon-string guitar.



Ex. 4.9 *La Luna* themes

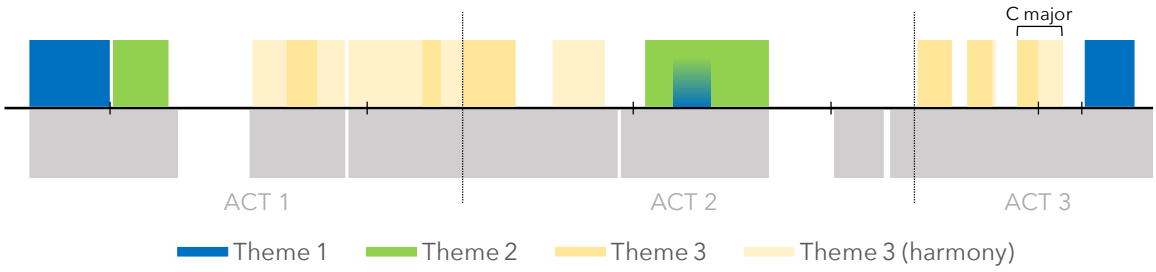


Figure 4.19 *La Luna* FMO barcode diagram

Theme 2 marks the beginning of the Today and Journey Continues sequences. Both scenes feature the father and grandfather attempting to force their own traditions onto the young

boy. Again, the theme ties the two narratively similar scenes together. Theme 3 (in A major) represents the moon, first heard as it rises from the horizon. As shown on the Film Music Organisation diagram, the distinct harmony of Theme 3 (A–Bm–Dm–A) accompanies a large portion of the film, defining a large part of Acts 1, 2A, and 3. Only at the very last outing of the theme does it modulate to C major (marked on **Figure 4.19**). While the thematic design of the score is not a clear-cut example of quadripartite ternary-act form, Acts 1 and 3 (excluding Theme 2) can be seen as reflections of one another as the two themes of *Lou* were shown to be. Act 2A is defined by Theme 3 and Act 2B largely by Theme 2. While more thematically involved than the others in the corpus, Giacchino's score signposts and defines many of the discrete sequences and provides thematic closure at the end.

4.6 Conclusion

This chapter confirms that there is a formal relationship between film music themes and the unfolding narrative, revealing how many of the Pixar short film scores can be read at simultaneous three- and four-act levels. At a three-act level, a long-range connection is made between the melodic themes of Acts 1 and 3: whether simply by the theme's occurrence and recurrence (as in *Lou* and *Sanjay's Super Team*) or similarities in its tonal, modal, or metric characteristics (as in *The Blue Umbrella*, *Piper*, and *Partly Cloudy*). Similarity in these acts is a result of a contrasting Act 2: when a melody's presence links Acts 1 and 3, its absence defines Act 2; if Acts 1 and 3 share a tonality, it is modulation that defines Act 2. While this tripartite arrangement of musical contrasts would conventionally be considered to be ternary form, its synchronous relationship with the films' three-act structures prompts me to retitle it *ternary-act form*.

Figure 4.20 A model of quadripartite ternary-act form

This chapter also introduces the formal concept I refer to as 'quadripartite ternary-act form', in which a score demonstrates ternary-act form with a bipartite Act 2. **Figure 4.20** illustrates

the design of quadripartite ternary-act form.[200] Based on the observations of this chapter, if a theme recurs in Act 2, all statements are contained to Act 2A and, in turn, thematic silence defines Act 2B. If Act 2 is already entirely void of thematic material, its two parts will likely be expressed musically by contrasting musical styles or orchestrations, dividing the score at the narrative midpoint.

In the following chapter, I apply this quadripartite ternary-act framework to the analysis of music in Pixar feature films in order to show how practitioners apply the same organisational methods to all narrative film scoring regardless of duration or complexity.

[200] The sequence and act demarcations are based on the average timings from the seven featured short films of this chapter.

5

THEMATIC ORGANISATION IN PIXAR–GIACCHINO FEATURE FILMS

We make beautiful melodies and that's what we have to have.

– John Lasseter

5.1 Introduction

According to the Academy of Motion Picture Arts and Sciences, the difference between a feature film and a short film is simply one of duration: a feature film, they claim, has a running time of more than 40 minutes, whereas a short film runs for 40 minutes or less, including credits.[201] In reality, duration is only one of a number of factors that separates the two art forms. Short narrative films tend to focus on a cast of two or three central characters confined to a single location and plots are usually delivered chronologically and succinctly. Pixar short film director Andrew Jimenez compares a good short film with a good joke. 'It has a great setup,' he says, 'gets to the point, and pays off right away'; a short film is 'very simple' and 'about one idea.'[202] By comparison, feature films are immensely multifaceted. They generally include multiple characters with complex interrelationships, subplots set in several locations, and they are frequently delivered non-chronologically with flashbacks, flash-forwards, or cutaway scenes.[203] In terms of music, while short films tend to be scored with a small number of cues (or even a single cue) that remain reasonably consistent in style and orchestration, feature film scores are typically a vast assemblage of cues with varying functions, musical styles, and ensemble sizes. Due to the lengthier durations, feature composers must consider the rhythm and pacing of the work and the interactions of a diverse set of cues, taking into account issues of listener fatigue and excesses of repetition. With so many more variables to consider, feature film scores undeniably pose a more

[201] While the American Film Institute and the British Film Institute concur, the Screen Actors Guild asserts that a feature film's running time is 75 minutes or longer.

[202] Sullivan, K., Schumer, G., Alexander, K., Mintz, A. and Besen, E., *Ideas for the Animated Short: Finding and Building Stories* (Oxon: Focal Press, 2013), p.17.

[203] A 'cutaway scene' is the interruption of a scene with the insertion of another. The interruption usually followed by a return to the original scene.

formidable analytical challenge.

Nevertheless, there is a core architectural form to narrative films that, for the most part, transcends duration; at its simplest, a complete narrative consists of a beginning, a middle, and an end regardless of the length of the parts or the whole. As I have set out in the methodology of this thesis, there are eight basic sequences through which Pixar protagonists journey.[204] As the Film Music Organisation method allows me to demonstrate, Michael Giacchino deploys recognisable melodic themes in support of plot strands. The main plotline, i.e., the journey of the central protagonist, is almost exclusively accompanied by what we might think of as the principal theme, except of course during stretches of thematic silence.[205] Giacchino identifies subplots with their own distinctive musical styles and themes so as to separate them from the main thread of the story.

In the previous chapter, it became clear that Pixar's short film scores are organised around a common quadripartite ternary-act form. The purpose of this chapter is to show that, despite the additional plot complexity, several of the Pixar–Giacchino feature film scores demonstrate the same four-part structure as their short-form counterparts. Comparisons are highlighted by aligning the FMO diagrams of features and shorts. In the second part of the chapter, I equalise the individual acts of *Inside Out*, *Ratatouille*, and *Coco* to demonstrate how Giacchino's melodic themes typically accompany common plot events, leading to a more nuanced understanding of film music's formal organisation.

5.2 Act 2B Thematic Silence

5.2.1 A Comparison of *Partly Cloudy* and *Inside Out*

Despite their vastly different durations, the organisation of the principal themes of 85'33" *Inside Out* and 4'51" *Partly Cloudy* is remarkably similar. Aligned in **Figure 5.1**, the uncanny likenesses of form become immediately clear. Where *Partly Cloudy* sets up a home key of D major in Act 1, *Inside Out* establishes one of G major. In Act 2A, as *Partly Cloudy* shifts to

[204] The Crossing the Threshold and Aftermath sequences may be disqualified as they are not essential, nor do they appear, in every film.

[205] Due to their repetition and placement throughout a film, principal themes generally become musically emblematic of the film as a whole.

C major and a compound time signature, the theme of *Inside Out* gets put through a series of changes not only to key and meter, but also to transformations of harmony, tempo, and fragmentation. With the exception of a cluster of thematic material in the All is Lost sequence of *Inside Out*, which will be discussed shortly, Act 2B of both films remains thematically vacant.[206] Finally, in both films, the theme's tonality and other musical characteristics established in Act 1 return for the final scenes of Act 3.

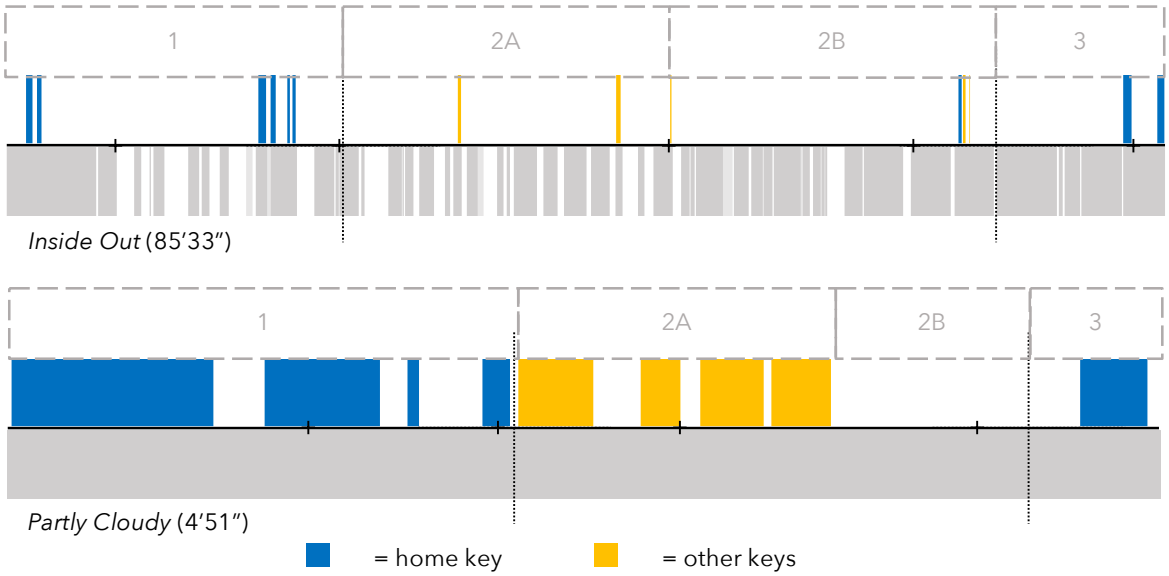


Figure 5.1 A comparison of the FMO barcode diagrams of *Inside Out* and *Partly Cloudy*

Before moving forward with a more detailed comparison of the melodic themes of these two films, for those unfamiliar with *Inside Out*, **Table 5.1** provides a synopsis of the plot in each of the eight sequences:

[206] The contestable midpoint of *Partly Cloudy* was discussed in Chapter 4. For the purposes of this comparison, I will operate on the basis that Act 2B begins not where the narrative marker sits, but where the eighth thematic statement ends.

GLORY DAYS	Meet Joy, an anthropomorphised emotion, who introduces several characters and explains the world. Riley's family move house and travels to San Francisco.
TODAY	The family arrives at new, disappointing house. Everybody tried to adapt to the new situation. Riley starts at a new school.
CROSSING THE THRESHOLD	Joy and Sadness are sucked up into a tube that transports them to Long-term Memory.
JOURNEY BEGINS	Joy and Sadness journey through Long-term Memory. They meet Bing Bong. Bing Bong loses his 'rocket'. Sadness comforts him until he is okay to continue on.
JOURNEY CONTINUES	The trio continue on to Dream Productions where they try to wake Riley up. Bing Bong gets put in jail. Joy and Sadness break him out and manage to scare Riley awake. They continue on their journey until Joy and Bing Bong fall into the Memory Dump.
ALL IS LOST	Trapped in Memory Dump, Joy finds a memory of Riley. Rewinding the memory, she discovers that Riley was happy because she had experienced sadness and been comforted by friends and family. Bing Bong sacrifices himself to help Joy to escape.
FINAL PUSH	Determined, Joy dashes off to return to Headquarters once and for all. In Headquarters, Joy lets Sadness 'drive', allowing Riley to embrace her grief. Her parents comfort her.
AFTERMATH: LATER	Headquarters gets an upgrade and Riley plays ice hockey with her friends.

Table 5.1 *Inside Out* plot synopsis

Figure 5.2a and **5.2b** provide the barcode and clock diagrams for *Inside Out* upon which the transcriptions in **Example 5.1** can be located. As the transcriptions of statements A–F show, aside from leaps up and down the octave, Giacchino rarely strays from the prototype version of the theme in Act One, firmly establishing the 'home' qualities of G major tonality, 4/4 meter, and oscillating tonic–subtonic harmonic progression of major seventh chords. Statements A and B accompany the introduction of the protagonist and her fellows. The function of this scene-and-theme coordination parallels the introduction of Gus at the beginning of the Today sequence in *Partly Cloudy*. At this point in the story, the protagonists are content and doing what they love. Gus is creating creatures and Joy of *Inside Out* is helping Riley to create happy memories.

Statements C–F accompany Joy towards the latter part of the Today sequence either as she reminisces about or tries desperately to hold onto her glory days before the move. Riley enters school, determinedly crossing her own story threshold of sorts, and the theme no longer plays. Shortly after, Joy is sucked through a pipe and dropped unceremoniously and unwillingly into Long-term Memory, crossing her own threshold into Act 2. These theme-scenes relate to the moment in *Partly Cloudy* when Peck and Gus embrace. Though Gus is not trying to recapture a memory, the theme-scene acts as a final moment of contentment before the move to Act Two.

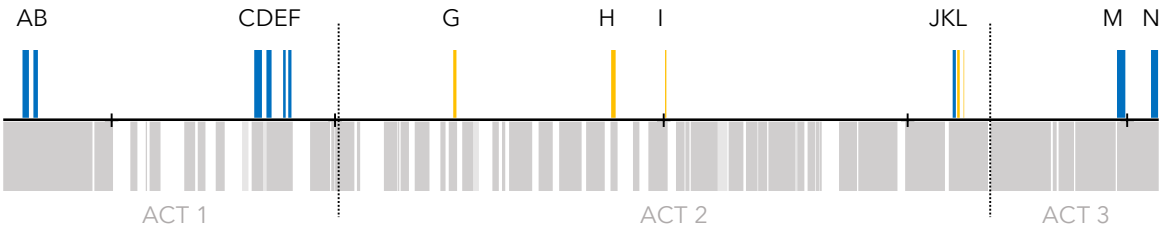


Figure 5.2a *Inside Out* FMO barcode diagram

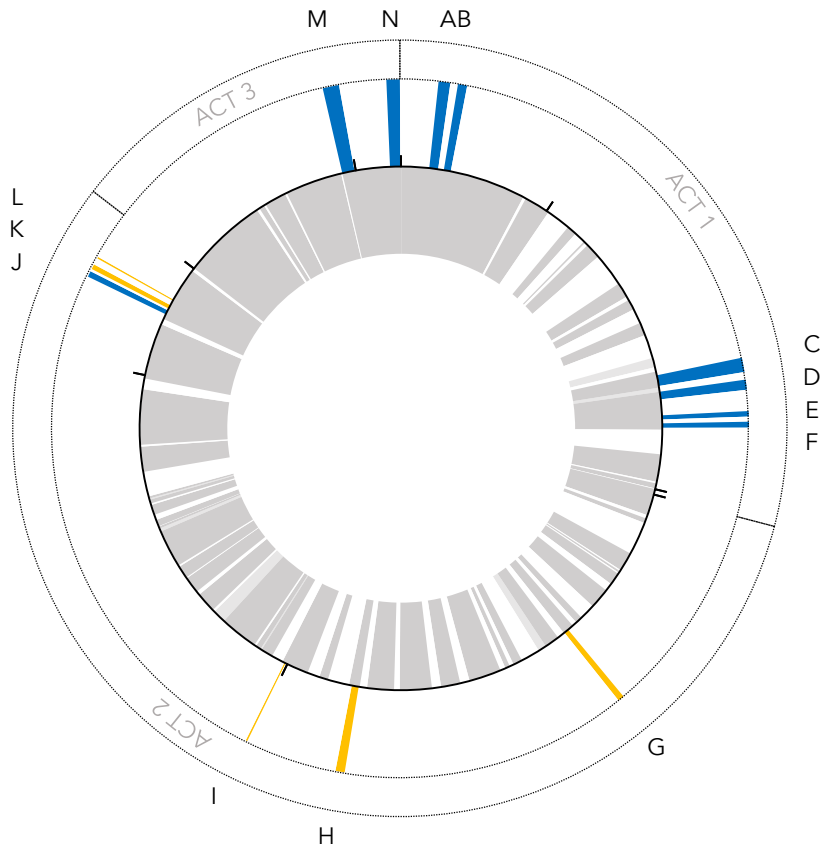
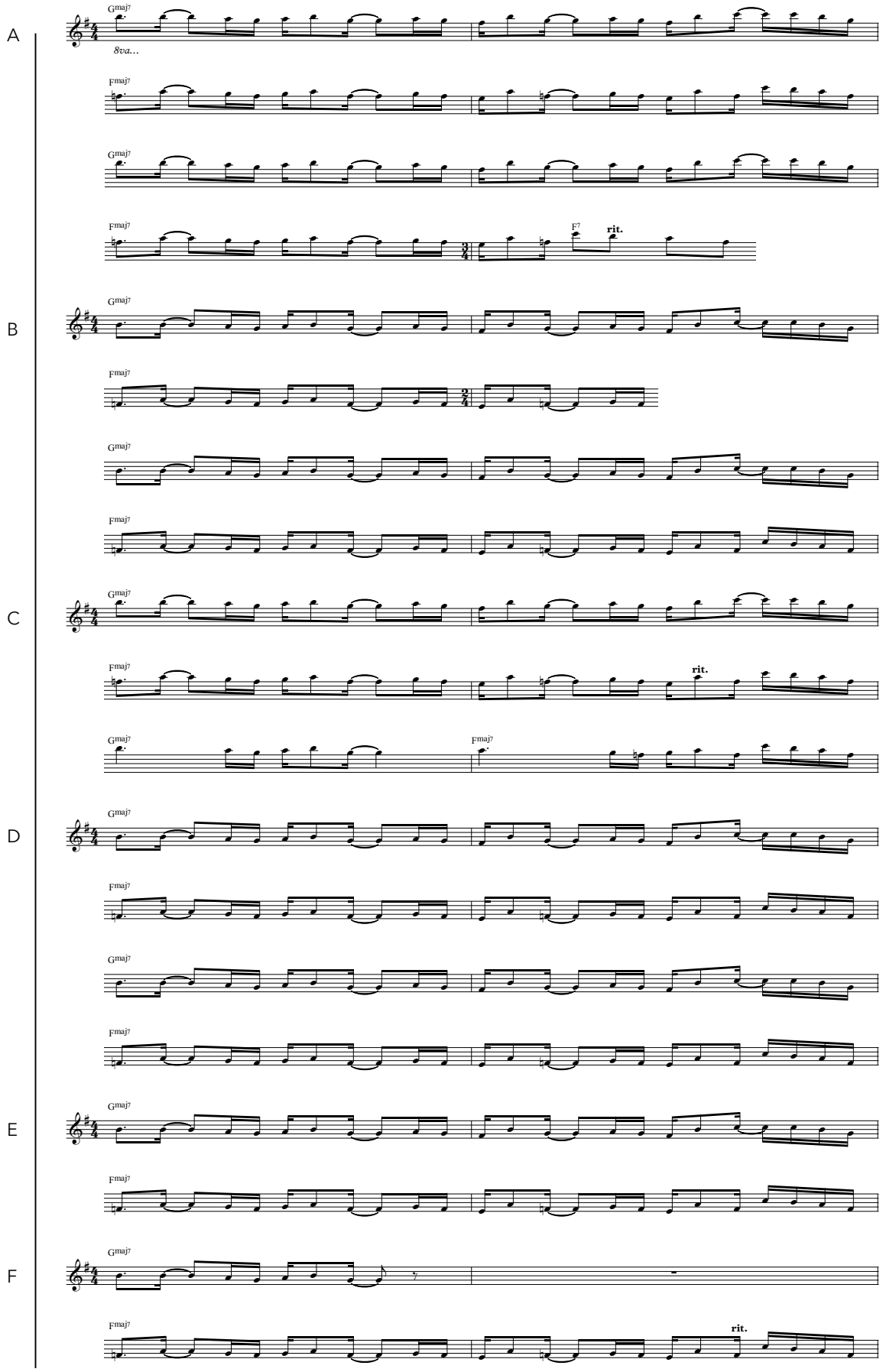
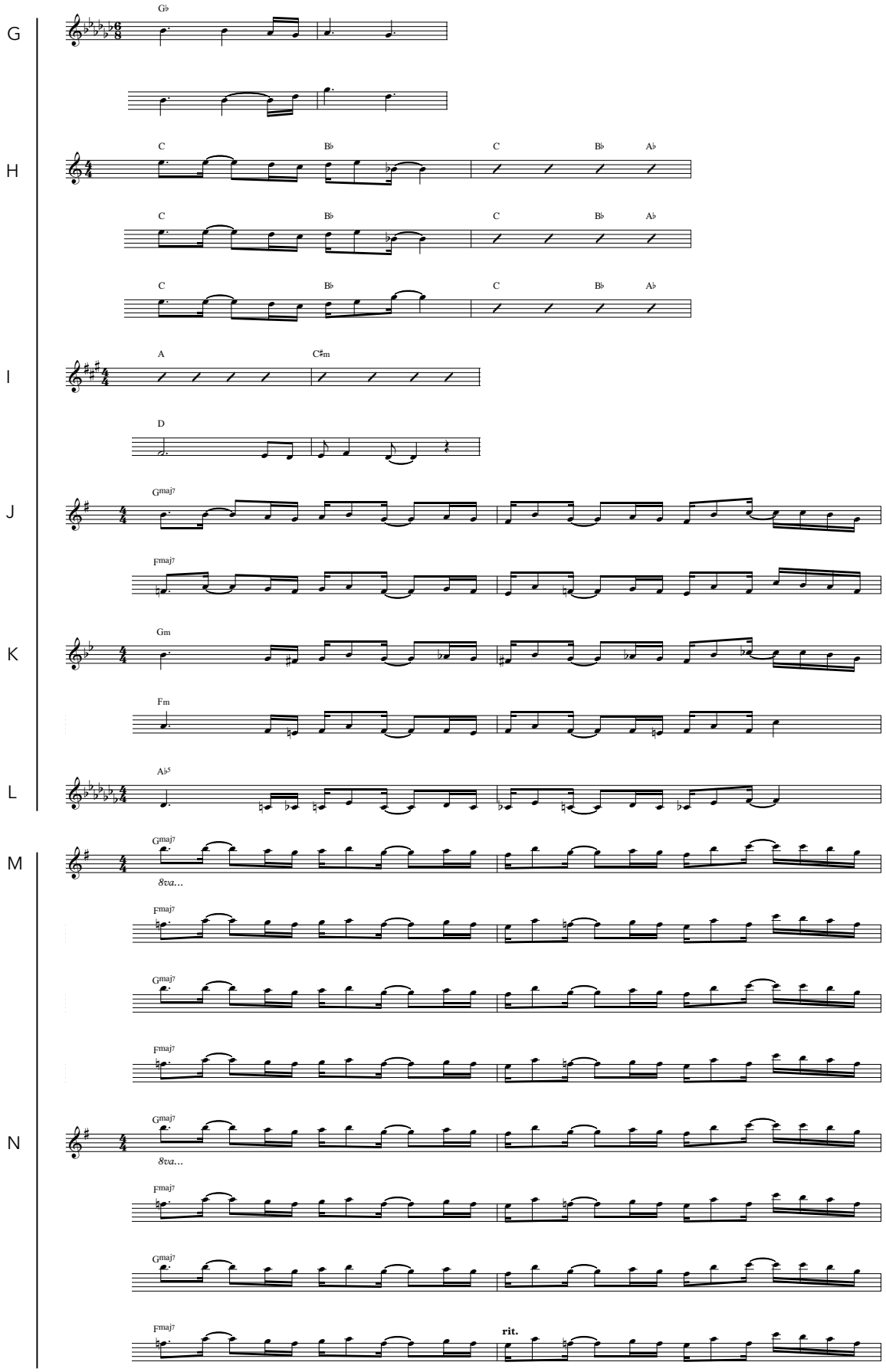


Figure 5.2b *Inside Out* FMO clock diagram



Ex. 5.1 Transcriptions of thematic statements in *Inside Out*



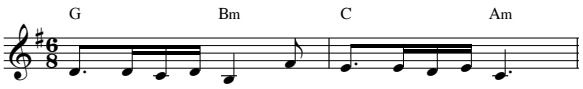
Ex. 5.1 *cont.* Transcriptions of thematic statements in *Inside Out*

As shown in Chapter 4, the Act 2 thematic statements of *Partly Cloudy* demonstrate variation largely by a change of its key (tonic to subtonic) and time signatures (simple to compound). Giacchino employs a greater selection of variants in the central part of *Inside Out*. The first statement of Act 2 (G) is heard as an exhausted Joy, usually the embodiment of optimism, drags Sadness through the labyrinthine Long-term Memory, voicing uncharacteristically pessimistic thoughts such as, 'Ugh, this is not working!' and 'Are you sure you know where you're going?' The well-established melodic theme mirrors Joy's change with an uncharacteristic compound time signature, a modulation down a semi-tone to G-flat major, and a dramatic decrease in tempo. It is played on a reverberant fairground organ and low-register vibraphone. This is the first shot of Joy truly embedded in this new unwelcome location and situation, accepting that she has a long journey ahead of her. Like in *Partly Cloudy*, Giacchino layers up thematic variations to musically describe the difference between Acts 1 and 2. This time, he distorts tempo and timbre as well as tonality and meter.

Statement H is the only time the theme does not accompany Joy and the main plot. Instead, it is heard in Headquarters as the remaining anthropomorphised emotions unsuccessfully attempt to impersonate Joy. Giacchino again makes changes to the key and tempo with an unexpectedly upbeat version of the theme in C major. This time, the composer employs two other forms of variation: reharmonisation and rearticulation. Retaining the tonic to subtonic movement, Giacchino changes chord every half a bar rather than every two, reharmonising the latter half of the phrase. Flutes perform this staccato version of the melody supported by pizzicato strings and vibraphone. The two scenes mentioned above are fairly insignificant (in the greater scheme of the story) and seemingly unconnected but share the theme of hopelessness: a contrast from the hopeful theme-scenes of Act 1.

At the film's midpoint, Bing Bong (a guide to Joy and Sadness during Act 2) is cheered up by Sadness, who listens to him and offers an understanding shoulder to cry upon. Joy watches on amazed. As she wrestles to come to terms with the revelation that people need time to grieve, Giacchino presents the principal melody harmonised with the I-iii-IV

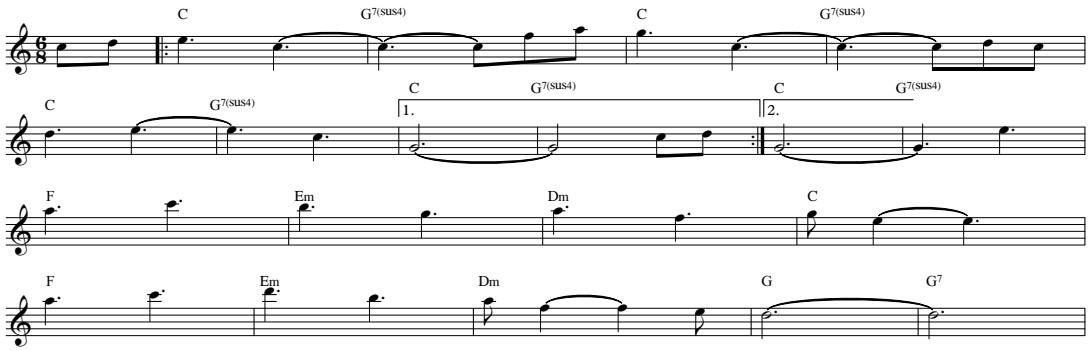
progression formerly associated with Sadness, whose theme can be seen in **Example 5.2**.[207]



Ex. 5.2 *Inside Out* Sadness theme

The compound theme sutures the transition between the Journey Begins and Journey Continues sequences and offers a clue about the film's resolution: Joy and Sadness must work together, as their musical themes do here, to restore order. This scene compares to statement F of *Partly Cloudy* (see pages 88 and 89), which accompanies the scene in which Peck watches the kindly cloudy as she demonstrates an enjoyable working partnership.

The principal theme is not heard again in *Inside Out* until Joy makes her escape from the ravine in which she is trapped during her All is Lost scene (statements J–L). Giacchino's scoring strategy for the All is Lost sequence is not too dissimilar in each film. Though the melody does not appear in *Partly Cloudy*'s mournful low point, the principal theme's I–I^6–$Imaj^7$–I^6–iim^7–V^7 harmonic progression is played as soft, sustained piano chords. Giacchino simply omits the melodic element and, by doing so, he not only generates a subtle musical metaphor for the departure of Peck but also gives the audience a break from the hitherto inundation of melody. Giacchino scores the revelatory stages of *Inside Out* with the film's secondary theme (**Example 5.3**). The principal theme returns only once Joy, with a newfound *raison d'être*, is ready to escape the pit.



Ex. 5.3 *Inside Out* secondary theme

[207] This iteration of the harmony does not include the move to the ii chord at the end, but stays on IV.

According to director Pete Docter, the theme here, which is first heard in G major (i.e., the 'home' key), was originally continued in a major mode as Joy attempts to escape from her lowest moment, but the latter two of the three statements were re-recorded to be in a minor mode: G harmonic minor followed by a cacophonous A-flat minor/A-flat major oscillation with altered but recognisable melodies (statements K and L respectively; both in raspy brass timbres). Docter, himself a musician,[208] informs us that, initially, 'it was basically the same thing in a major key so it felt like, "Hey, we're going to make it!" from the get-go. So, we went back and redid it in a minor key so as to imply we may *not* make it.'[209] Incrementally altering these thematic statements provides initial hope followed by decaying optimism and, as Docter suggests, explains with music that balance has not yet been restored. A return to the musical properties of Act 1 would clash with the message of continued jeopardy. Just as Joy is as far from getting home as she can be, statement L delivers a melody at its furthest – timbrally, harmonically, and melodically – from the theme of Act 1.

Act 3 of *Inside Out* is driven primarily by a previously unheard ostinato figure (discussed in Chapter 6.2.7). However, as with *Partly Cloudy*, the principal theme returns during the film's climactic moment (statement M) in the original key, meter, harmony, form, and timbre (the upper register of the piano). Visually and musically, it mirrors the opening scenes. Thematic statement A accompanied the creation of Riley's first memory and Statement M now accompanies the creation of Riley's first *mixed* memory. A final repeated theme plays at the end of the Aftermath sequence (statement N) and the credits close in.

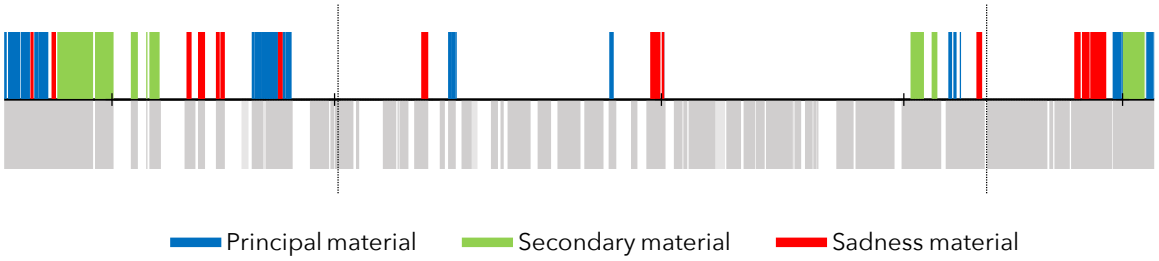


Figure 5.3 *Inside Out* FMO barcode diagram with all key thematic material

[208] Pete Docter has played double bass on a number of Pixar soundtracks.
[209] Docter, P., *Inside Out* 'Director's Commentary' (DVD)

While *Partly Cloudy*'s score was monothematic, there are three significant themes in the music of Inside Out: the principal theme (generally attached to Joy), the secondary theme (that frequently represents Riley), and the Sadness theme (which, naturally represents Sadness). **Figure 5.3** demonstrates that, when all material from these three themes (melody and/or harmony) are mapped onto the FMO diagram, the similarities with *Partly Cloudy* become starker still. Act 1 and the later stages of Act 3 are heavily saturated with thematic material and none of the themes are feature in the Journey Continues sequence of Act 2B.

Though considerably different in terms of complexity of plot and score, this comparison offers compelling evidence that suggests the formal organisation of themes in features and shorts are organised by a common strategy – and that the analytical tools applied to both film types produce similar results.

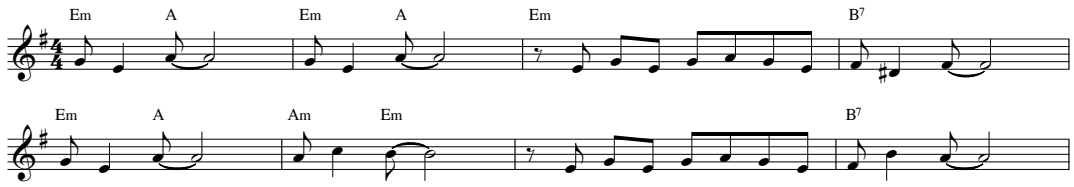
5.2.2 Act 2B Thematic Silence in *Cars 2*

GLORY DAYS	A mission on an oil rig with secret agent, Finn McMissile.
TODAY	Mater, a tow truck, at home in Radiator Springs. Lightning McQueen is challenged to enter the World Tour.
CROSSING THE THRESHOLD	McQueen accepts and the gang travel to Japan.
JOURNEY BEGINS	The World Tour begins. Racers are struck down. Mater learns that Finn and Holley believe him to be a secret agent.
JOURNEY CONTINUES	Mater helps to infiltrate the criminals' meeting. Mater blows his cover. He, Finn, and Holley are captured.
ALL IS LOST	Mater, Finn, and Holly are tied to Big Ben. Mater escapes.
FINAL PUSH	Mater dashes off to save Lightning McQueen and reveal the mastermind behind the scandal.
AFTERMATH: SOON	Ceremony with the queen.
AFTERMATH: LATER	Race day back at Radiator Springs.

Table 5.2 *Cars 2* plot synopsis

Cars 2 reveals a similar morphology to those of *Inside Out* and *Partly Cloudy* (as well as *The Blue Umbrella* and *Piper*) with a lengthy thematic void in Act 2B. However, despite establishing specific timbral and tonal 'tonics' in Act 1, Giacchino does not make use of

variation or modulation in Act 2A. Instead, the riff-based main theme (notated in **Example 5.4**) is performed almost exclusively on electric guitar and in the key of E minor (or its subdominant, A minor) throughout the entire film. Of the 6'06" of theme heard in the entire film, only 34" appears in another tonality. Of that small amount, we are generally offered brief modulations of a semitone, to F minor, for dramatic purposes.



Ex. 5.4 *Cars 2* principal theme

As observed in the score for short film *Lou*, the principal theme for *Cars 2* is first associated with one character (Finn McMissile) and, by the end of the film, is allocated to another (Mater). This transfer of the theme occurs 90% into the film as Mater takes over the role of hero (marked * on **Figures 5.4a** and **5.4b**). The theme that, throughout, has been performed almost exclusively on electric guitar to portray McMissile's hi-tech secret agent role is played on the banjo, an instrument that has previously been associated with Mater and his hillbilly lifestyle. As the timbral change plays such an important role in revealing Mater's newfound secret agent abilities, it is perhaps for this reason that electric guitar was so steadfastly aligned with Finn McMissile for the rest of film and banjo with Mater. Examples like this demonstrate how Giacchino optimises the pastiche scoring. By methodically associating certain stylistic and timbral associations with certain characters, Giacchino can simply reassign and reorchestrate melodic information to communicate the transfer of, in this instance, skills. In the last scene of the Aftermath in which Mater and McMissile are wishing each other farewell, the theme is heard on steel-string acoustic guitar: a timbral compromise that expresses equality between the pair.

Pixar and Giacchino use the differences between the two characters effectively to create visual, narrative, and sonic contrast in the opening act. The Glory Days exclusively stars McMissile and the Today sequence, Mater. As seen in the FMO diagrams below, Giacchino creates thematic contrast between the two scenes with a dense cluster of thematic material

in the former and an absence of it in the latter. Thereafter, it is easy to detect the scenes in which McMissile appears by the distribution of the thematic statements.

Despite the claim that Act 2B is defined by thematic silence, the Journey Begins has one brief glimpse of the theme (the first three notes in low strings) underscoring an inconsequential moment involving McMissile's fellow agent Holley Shiftwell. While the barcode diagram, limited as it is by the width of the page, does not show the location of this very brief moment, the clock design with its longer timeline allows it to be seen (pointed out by an arrow in **Figure 5.4b**). There is an argument to be made here for the barcode diagram to be presented in landscape to allow for more a detailed reading of the score, and one in favour of the clock diagram. This is a critique of the methodology that will be picked up in the conclusions chapter at the end of the thesis.

Despite its relative plot complexity, irregular patterning of cues both diegetic and non-, the thematic score for *Cars 2* is very neatly organised. Though Act 2A does not exhibit the variation we might expect based on previous observations, Giacchino uses the score to set up a long-range timbral strategy that pays off in the climactic moments of the score as Mater receives the (mostly) pentatonic melody that has been systematically imbibed with connotations of heroic 'coolness' by the actions of McMissile and a twangy electric guitar timbre throughout.

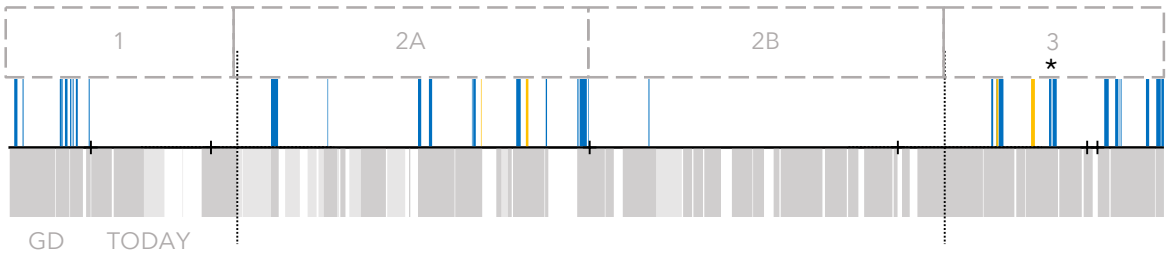


Figure 5.4a *Cars 2* FMO barcode diagram

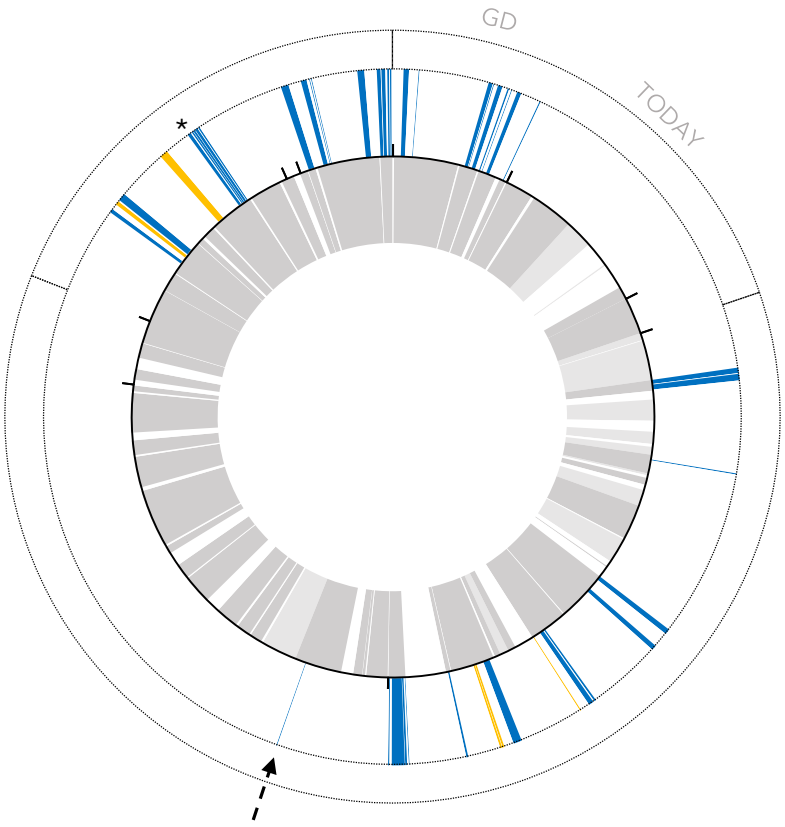


Figure 5.4b *Cars 2* FMO clock diagram

Thus far, I have shown that many of the Pixar short films, *Inside Out*, and *Cars 2* can all be described reasonably as showing some version of the quadripartite ternary-act form depicted in **Figure 5.5a**. Act 2B in each of these examples is defined largely by thematic silence. This paradigm aligns with the quadrants of story form: 1) the protagonist is established in a world; 2A) the protagonist is in a new situation with more variables; 2B) the protagonist loses, among other things, faith in the mission; and 3) the protagonist is able to restore their world to some semblance of its original state.

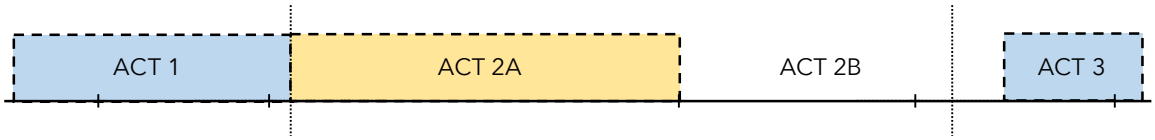


Figure 5.5a Hypothetical Pixar–Giacchino model: Act 2B silence

The following feature film examples demonstrate a four-part morphology that resembles **Figure 5.5b**, with a lengthy thematic silence in Act 2A rather than 2B. The structure of the story remains the same but Giacchino takes a different approach to the distribution of themes.

Figure 5.5b Hypothetical Pixar–Giacchino model: Act 2A silence

5.3 Act 2A Thematic Silence

5.3.1 A Comparison of *Up*, *The Incredibles*, and *Incredibles 2*

Above all, the scores for *Up*, *The Incredibles*, and *Incredibles 2* demonstrate explicit ternary-act forms. **Figure 5.6** shows how the principal theme of *Up* (notated in **Example 5.5**) and four riff-based principal themes of the two *Incredibles* films (key below **Figure 5.6**; themes notated in **Example 5.6**)[210] densely populate Acts 1 and 3 of their respective films.

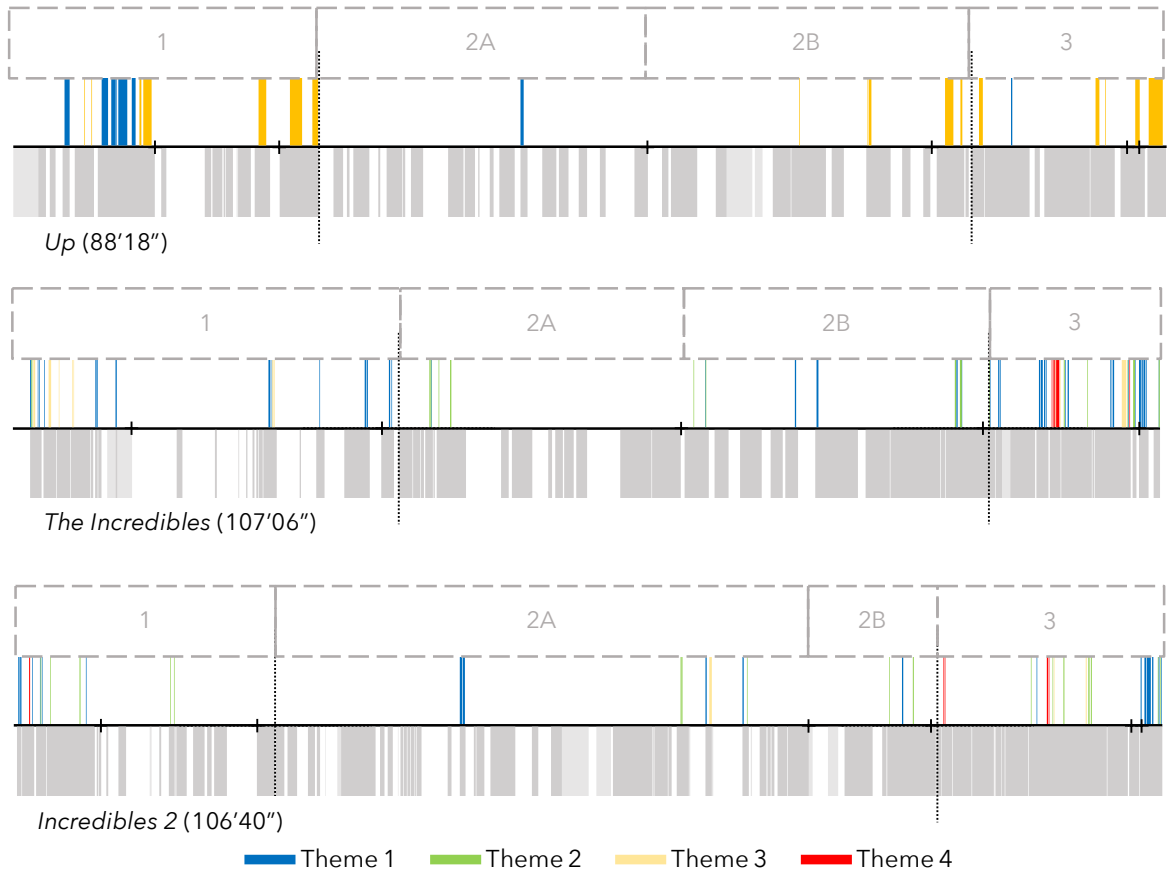
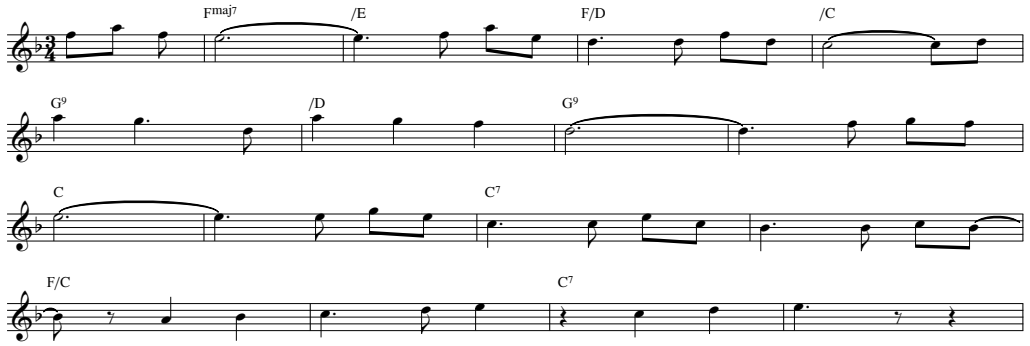
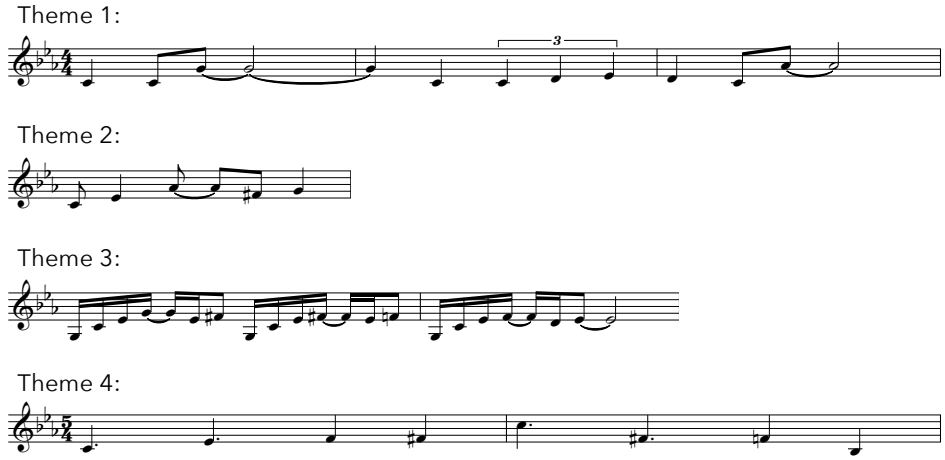


Figure 5.6 A comparison of the thematic designs of *Up*, *The Incredibles*, and *Incredibles 2*

[210] Rather than one principal theme, the scores for the *Incredibles* films have four short, main themes that operate interchangeably to represent the heroism of the Parr family. Each theme is prominent and, though some appear more frequently, none should be discounted from the analysis.



Ex. 5.5 *Up* principal theme (aka Ellie's theme)



Ex. 5.6 *The Incredibles* and *Incredibles 2* themes

The principal themes of all three of these films densely populate the Glory Days sequences. In the case of *Up* and *The Incredibles*, these scenes begin with younger versions of the protagonists and the respective themes accompany the manifold moments of joy and success (and heroism) demonstrated in each film. *Incredibles 2*, which as a sequel does not require the same process of thematic introduction as an original film, is less populated with theme in the Glory Days. Giacchino uses the well-established themes of the previous film to accompany the superhero family as they work together to stop the foe introduced in the final moments of the previous film.

At the beginning of the Today sequences, the protagonists are stripped of their respective *raison d'être*s and musical themes. As in *Inside Out*, the themes only return in this passage when memories of the Glory Days or opportunities to return are roused. At the end of the sequence, Carl (*Up*), Bob (*The Incredibles*), and Helen (*Incredibles 2*) each make the decision to enter Act 2, to Cross the Threshold. Based on the observations of several of

the Pixar short films, if a protagonist willingly crosses the threshold, audiences might expect to hear the theme during this sequence. Associated with joy and success by this point in the story, an appearance of the theme as the characters journey into Act 2 allows the soundtrack to comment on the optimism and consent of the decision. This is corroborated by *Up* and *The Incredibles*. The respective themes sound as the characters make the decision to leave the comfort of Today and again as they set off in to the unknown second act. Despite also accepting the opportunity to move ahead, no theme accompanies Helen and the family as they move into their new home in *Incredibles 2*. Instead, a light jazz track supports the transition. Based on the evidence of other films, it would make sense to include one of the film's melodic themes here.

In Act 2A of *Up*, the only use of the principal theme (better known as 'Ellie's theme') is the moment in which she is directly referenced. This instance is what Frank Lehman might refer to as, an example of 'mention' rather than a 'use': a distinction borrowed from linguistic theory.[211] The 'use' of a theme is when it is deployed for musical purposes whereas a 'mention' is a more obvious form of citation with the intention of referring to something. In this moment in *Up*, Russell and Carl speak of Ellie by name. Giacchino picks up on this and accompanies the mention of her name with her theme. The melody here neither accumulates meaning nor provides deeper meaning. Its occurrence here is superficial rather than in support of the underlying story. To borrow from Lehman, its use 'cannot help but sound citational, rather than musically integral.'[212] Its occurrence – as with a *satellite* scene – could be removed from the soundtrack without disrupting the score's formal logic.

The next time Ellie's theme is heard – 20 minutes later and for the first time in Act 2B – the melody is detached further. As Carl and Russell flee a pack of malevolent dogs, two fragments of Ellie's theme blare out on muted trumpet. The theme's presence is not motivated by any mention of Ellie, nor any element of hope or adventure (unless being chased by a pack of dogs qualifies as adventurous). The theme appears once more during the Journey Continues sequence in the final moments of hope before the characters have

[211] Lehman, F., 'Quick Takes on Rogue One: Leitmotivic Use vs. Mention' at http://musicologynow.ams-net.org/2017/01/quick-takes-on-rogue-one-leitmotivic.html (Accessed 30th January, 2017)
[212] Ibid.

their hopes dashed and head into the All is Lost sequence. This moment transcends the individual film and will be discussed later in the chapter as it relates to other Giacchino scores. As in *Inside Out*, the principal theme accompanies *Up*'s All is Lost scene. Ellie's theme is heard on piano as Carl looks through the photo album again. Ellie's handwritten message at the end of the album provides Carl the motivation he requires to push forward into Act 3.

It is fair to suggest that the theme's use in Act 2A is negligible; its use cued by dialogue rather than story. In Act 2B, the theme performs a more substantial role in the score, accompanying scenes that transcend the individual film.

In Act 2A of *The Incredibles*, brief understated quotes of Themes 1 and 2 accompany scenes in which Bob gets to (legally) be Mr Incredible again; fighting a robot and flirting with Mirage. He is, for the first time in a long time, reliving his glory days. After these early scenes, none of his themes are heard again until Act 2B. Despite the hero's successes and contentment to be resuming hero work in Act 2A, the absence of theme conveys to audiences that his success is superficial and that he has not returned to his authentic former superhero self. When the themes return in Act 2B, during which Mr Incredible is incarcarated, they are reassigned to his family as they journey to save him. The act culminates in the entire family fighting together (the final moments of hope before their capture), by which point the themes previously dedicated entirely to Mr Incredible, come to represent the superhero family. In this sense, the film can be divided in two thematic halves: 1) themes denote Mr Incredible (Acts 1 and 2A); and 2) themes denote all members of the family (Acts 2B and 3).

Incredibles 2 has a lengthy Act 2A and brief 2B, a fact that skews the formal reading of the score. Act 2's thematic silence (or near silence) lasts not until the narrative midpoint, but rather the centre of the film. When Theme 1 is first heard in Act 2A (~39% into the film), it is used as a citational 'mention', played as a soft bass guitar riff when Bob's old car, the 'Incredibile', is mentioned. After the film's midpoint – though not the narrative midpoint, which occurs 69.20% into the film – a combination of Themes 1, 2, and 3 are heard as the superhero baby, Jack Jack showcases his powers to Frozone and, later, Edna. While these

quotes are examples of 'use' rather than 'mention', their occurrence during these gentler moments of storytelling are far removed from the more exciting scenes of adventure and heroism to which they are more commonly attached. Act 2A is not wholly defined by the omission of themes (though there is a long passage of the act in which it is used only superficially), but by the reassignment of themes. These riffs previously associated with heroism and success are now mere markers of superpower usage.

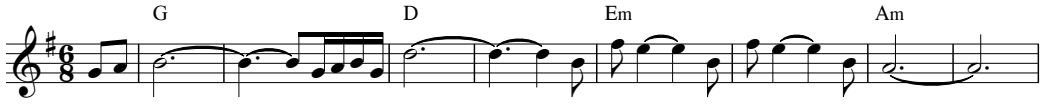
In Act 2B, themes are deployed during scenes of action and heroism as Bob rushes off to rescue his wife and at the appearance of the Incredibile as it comes to the rescue of Dash and Violet in the last moment of hope before Act 3. The latter example further supports the suggestion of thematic material at the car's mention in Act 2A. Realigning the themes with their previous connotations neatly sets it up for an abundant deployment during the action of Act 3.

Though none of the three films exhibit an Act 2A wholly void of thematic material, Giacchino's use of theme here is typically minimal and superficial. Thematic deployment in this quadrant is generally in citational support of dialogue rather than placed for any musically or narratively integral reason.

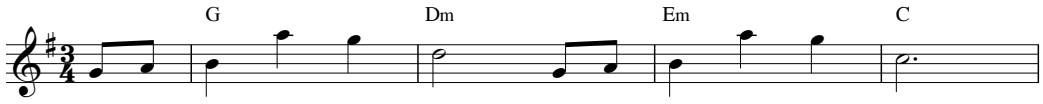
5.3.2 Quadripartite Ternary-act Form in *Onward*

Before continuing with the scores of Michael Giacchino, I will interject with a short case study on the score for Pixar's *Onward*, composed by Mychael and Jeff Danna, which reveals an unmistakeable four-act thematic form. It has two principal themes, each beginning with a rising *do-re-mi* anacrusis (**Example 5.7**). One is associated with protagonist Ian and the other to his relationship with his deceased father.

Ian's theme:



Dad's theme:



Ex. 5.7 *Onward* principal themes

The symmetry of thematic organisation in this film creates an extraordinarily neat example of quadripartite ternary-act form. As **Figure 5.7** shows, Acts 1 and 3 virtually mirror one another. Act 1 divides equally in two with several statements of Ian's theme in the first half followed by several of his Dad's theme in the latter. The reverse happens in Act 3, with the Dad's theme dominating the film's climax. It is only in the Aftermath sequence, once the father has materialised, dematerialised, and the experience has given Ian some form of closure, that his own theme returns, bookending the film. The clusters of each theme in the film's final moments are, as in Act 1, fairly equal in their distribution.

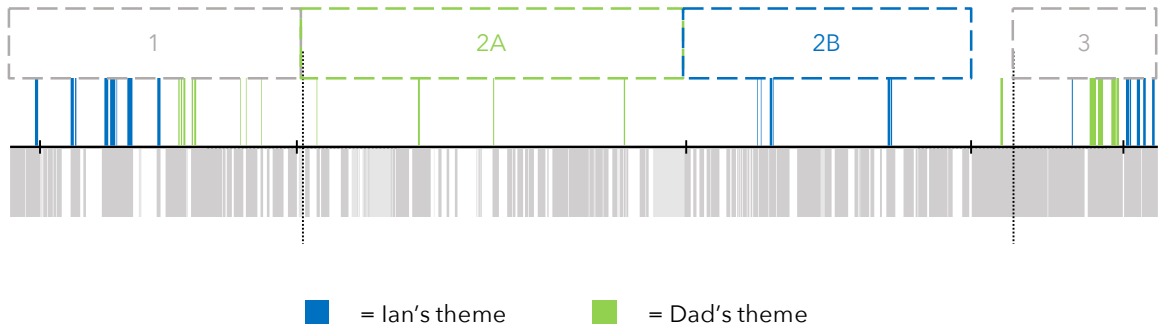


Figure 5.7 *Onward*'s quadripartite ternary-act form

Act 2 divides neatly into two parts, with moments of the Dad's theme sparsely distributed throughout Act 2A and those of Ian's theme lightly populating Act 2B. The only exception to this otherwise textbook two-part act is a moment of the Dad's theme in the All is Lost sequence. If Ian's theme were removed from the score, the thematic design might resemble those of the monothematic Pixar short films with themes joining during Act 1, being sparsely distributed in Act 2A, absent for Act 2B, and returning at the film's climax in Act 3. Though the composers of the Pixar shorts have demonstrated that it is not only Michael Giacchino who employs these organised structuring strategies, it is fascinating to uncover such a clear-cut example of quadripartite ternary-act form in feature film scores outside of his work. Evidently, Pixar scores are organised by a common narrative strategy.

5.4 Chorus Organisation

In the previous chapter, I demonstrated how the four choruses of short film *Lava* neatly divide the film into four roughly equal parts with each reprise signalling the end of an act. In this chapter, I reveal how *Coco*, the only feature to feature a similar recurring chorus, also uses the apportioning and variation of choruses to break the story into four discrete acts.[213]

5.4.1 Chorus Organisation in *Coco*

GLORY DAYS	Miguel is a young boy who loves to play the guitar despite his family's hatred of music. Miguel explains his family history.
TODAY	Miguel shines the shoes of a mariachi musician and later discovers that his great-great-grandfather was Ernesto de la Cruz. Miguel's grandmother learns of his love for music and destroys his guitar. Miguel runs away in search of a new guitar to play at the talent show. When he strums the guitar of De la Cruz, he brings forth dead relatives.
CROSSING THE THRESHOLD	Miguel crosses the bridge to the Land of the Dead.
JOURNEY BEGINS	Miguel meets Héctor who takes him to find De la Cruz. The pair compete in a talent show to win a trip to De la Cruz's party. Miguel flees from his family, who have tracked him down.
JOURNEY CONTINUES	Miguel enters the party and declares he is the great-great-grandson of De la Cruz. Héctor shows up and it is revealed that he was murdered by De la Cruz. He and Miguel are imprisoned in a pit.
ALL IS LOST	Trapped in a pit, Miguel discovers that Héctor is his great-great-grandfather. The pair are rescued by Miguel's family.
FINAL PUSH	Determined, they all head off to out De la Cruz. Héctor, forgotten by those in the Land of the Living, begins to fade away. Miguel returns and reminds Mama Coco of her father (Héctor) through song.
AFTERMATH: LATER	One year later, the family celebrates together as Miguel performs.

Table 5.3 *Coco* plot synopsis

Written by Robert Lopez and Kristen Anderson-Lopez, the song 'Remember Me' is central to the story of *Coco*. It functions as 'the tie that binds multiple generations in the shared love of music.'[214] In an article entitled 'How "Frozen" Hitmakers Covered the Same Song Four Ways in "Coco"', Jon Burlingame explains that the song had to 'pivot […] to take on different meanings depending on the story's context'.[215] The four renditions of the song to which Burlingame refers are, as per the labelling below, Chorus A, C, D, and an additional

[213] I use the term 'chorus' here for what is essentially a very short song. The reprise of 'Remember me' regularly pervades the lyrics giving the piece a chorus-like aesthetic.

[214] Burlingame, J., 'How 'Frozen' Hitmakers Covered the Same Song Four Ways in "Coco"' at https://variety.com/2018/film/features/frozen-hitmakers-cover-song-four-ways-coco-1202653986/ (4th January, 2018) (Accessed 29th April, 2020)

[215] Ibid.

pop version of the song that plays during the film's credits. In my reading of the film, I discount the latter because it occurs outside of the narrative boundaries. Instead, I suggest that the various snippets of 'Remember Me' that occur during Act 2 (almost exclusively, in fact, in Act 2A) play a more significant role in the story than the version heard during the credit sequence because they reaffirm the song's ubiquity within the world and explain Ernesto's sustained fame.

Figures 5.8a and **5.8b** show the placement of 'Remember Me' in *Coco*; its interaction with the plot and its engagement with the non-diegetic score. While each diegetic chorus is presented in its own key, it is primarily through arrangement, performer, and performance that each chorus – and therefore each act – is afforded a distinct personality and narrative message.

Chorus A is introduced early on, as the Glory Days sequence comes to a close, in the form of a pop mariachi arrangement in E-flat major sung by Ernesto de la Cruz, the film's would-be hero-cum-antagonist (as revealed later in the film). The performance is a vibrant live performance on a grand scale with dancers and musicians choreographed around De la Cruz. This presentation of the song captures the vibrant spirit of the Glory Days sequence and acts as an archetype to which all other performances will be likened.

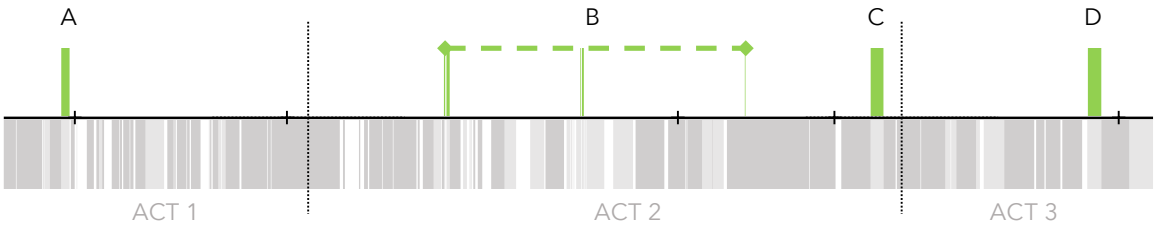


Figure 5.8a *Coco* 'Remember Me' FMO barcode diagram

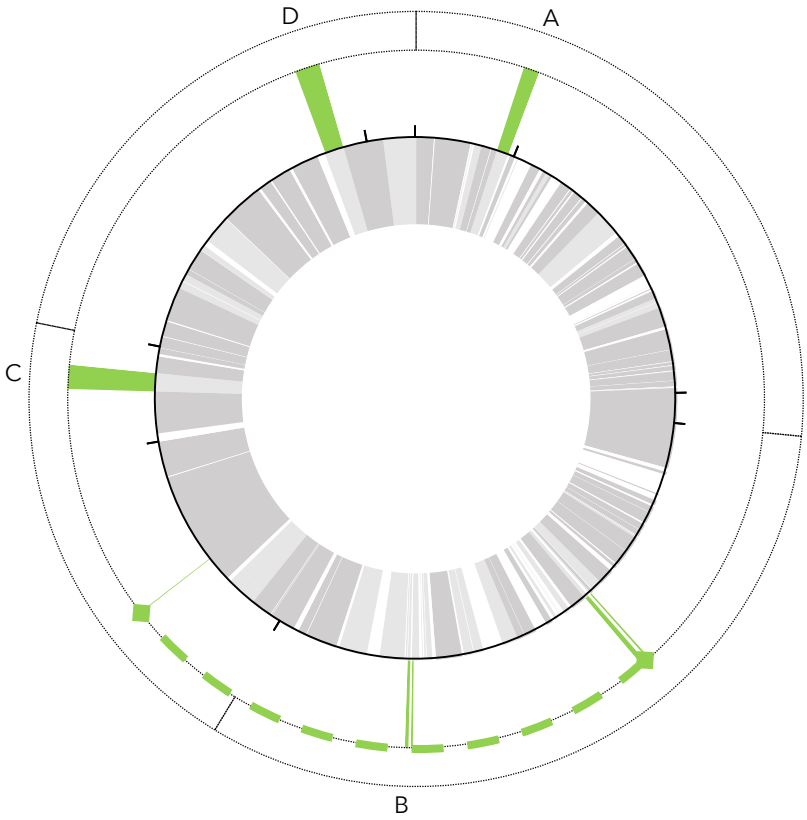


Figure 5.8b *Coco* 'Remember Me' FMO clock diagram

During Act 2, 'Remember Me' is heard in short bursts from various sources. De la Cruz's recording is heard briefly underneath dialogue, coming from an on-screen radio; it is then performed in various arrangements by talent show hopefuls; and finally, in a short bout of drunken singing by partygoers with De la Cruz and Miguel. I have classified these snippets under the same heading: Chorus B (grouped by a dashed line on the FMO diagrams above). They are negligible iterations that occur during minor scenes that could easily be deleted without disturbing the logic of the plot, existing only to reiterate the ubiquity and success of the track and, by extension, De la Cruz, and to subtly remind filmgoers of the song (literally, 'remember me') so that it may rouse effectively later.

The chorus then appears at a key scene during the All is Lost Revelation as an intimate lullaby in a memory, performed by Héctor to his daughter Coco, apologetically asking her to remember him during his stretches of time away from home as a touring musician (Chorus C). The stripped-back version is arranged for voice and acoustic guitar, opening with Héctor's vocals and joined by toddler-Coco's. The key of C major is a possible nod to

the simplicity of the relationship here, or perhaps it merely fits the vocal range of the young vocal artist. The performance reveals the song's origin, providing Miguel with an answer to his ongoing question: *who is my musical relative?* The discovery that it is Héctor gives Miguel the much-needed motivation to pick himself up and move with determination and purpose into Act 3.

Chorus D is then performed at the climax of the film by Miguel – now returned to the Land of the Living – as a way of reminding a much older Coco about her father. Miguel sings 'Remember Me' as a proxy for Héctor. Like the previous chorus shared between Héctor and young Coco, this arrangement is for voice and acoustic guitar, opening with Miguel's voice and joined by nonagenarian-Coco's. This time it is performed in the key of D-flat major, presumably as a comfortable singing range for Anthony Gonzalez who voices Miguel, rather than for any dramatic reason.[216]

5.4.2 A Comparison of *Lava* and *Coco*

Despite the vast durational differences, unconnected composers, and countless other soundtrack dissimilarities, the distribution of choruses in 5'01" *Lava* resembles that of 'Remember Me' in 91'27" *Coco*. **Figure 5.9** aligns the FMO diagrams of the films to reveal the uncanny structural similarities in both plot and chorus placement.

Chorus A of both films functions to introduce characters and, ultimately, the problem that will drive the story. The placement of these choruses reaffirms one of the key differences between Glory Days and Today sequences in feature and short films: that character introductions tend to occur in the Glory Days of features and the Today of shorts.[217] Unsurprisingly then, Chorus A appears towards the end the Glory Days sequence in *Coco* and during the Today sequence of *Lava*. Both choruses are upbeat, positive renditions, which establish an archetype from which to perceive later recurrences.

While Chorus B of *Lava* neatly marks the end of Act 2A, *Coco*'s Chorus B is represented by scattered chorus fragments throughout Act 2A (and one brief instance in Act 2B). While

[216] Though most viewers will not notice, as a guitarist, the performance lost some believability for me as this is a difficult key for a young, self-taught guitarist to navigate. Nevertheless, the animation of Miguel's playing is impressively realistic.

[217] Exceptions include *Bao* and *Sanjay's Super Team*, which are structured more like feature films.

the execution of Chorus B differs considerably in these two films, there are similarities. Though presenting the same lyrical and musical content of Chorus A, both films follow up with what might be considered distorted versions. Chorus B of *Lava* is considerably slowed down to reflect the flagging optimism of the protagonist and the multiple iterations of Chorus B in *Coco* are sonically distorted, coming from tinny radio speakers or reimagined in eclectic styles by background actors.

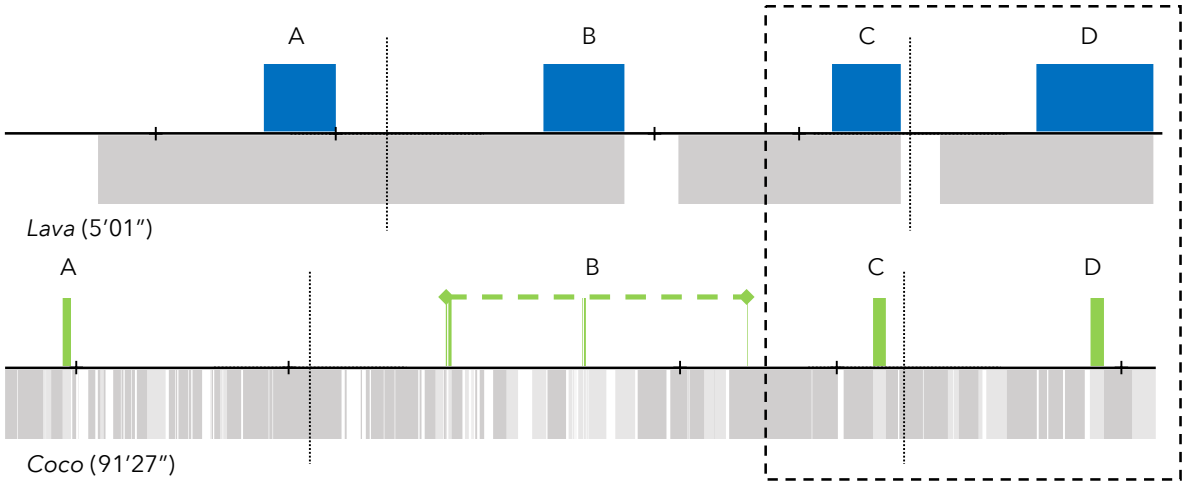


Figure 5.9 A comparison of chorus placement in *Lava* and *Coco*

As the FMO diagrams above demonstrate, Choruses C and D of each film are remarkably aligned. *Coco*'s Chorus C runs from 75.45% to 76.56% and *Lava*'s from 71.43% to 77.40%. Both renditions include a female voice – Lele, the love interest of Uku and a young Coco, the daughter of Héctor – and both are, coincidentally I am sure, in the key of C major. The function of Chorus C in both films is to deliver a revelation during the all-important All is Lost scene, providing the respective protagonists with inspiration to cross the narrative barrier into Act 3. Miguel figures out his heritage and Uku learns of Lele's reciprocal longing. As will be revealed later in this chapter, this revelatory moment of several feature films is scored with the principal theme. What is interesting about *Coco* and *Lava* is that the choruses, performed as they are by onscreen characters, *provide* the revelation rather than simply accompany it.

Chorus D of each film lies at the films' climactic resolutions. *Coco*'s final chorus begins at 94.37% and ends at 95.52%, and *Lava*'s runs from 89.09% to 99.22%. Each features a duet between the protagonist and the female character of Chorus C: *Lava* brings together the

two longing lovers and *Coco* features a duet by Miguel and a much older Coco. As demonstrated in the previous chapter and will be expanded upon in the following section, it is not hyperbole to say that every film that has a melodic principal theme will include it in the climactic moments of Act 3. The choruses of *Coco* and *Lava* are no exception to this. What makes these moments even more engaging is that closure in the story relies on the participation of the duet partners. Without Lele, Uku would be singing alone as he was at the beginning of the film. Lele represents Uku's happy ever after. If Mamá Coco had not joined in, it would mean she has truly forgotten her father and would result in the 'final death' of Héctor.

The comparative analysis of these two films demonstrates that, despite myriad differences in aesthetic, format, production, personnel, subject matter, etc., both films conform to similar underlying formal conventions. It is not clear whether these two films are unique with regards to chorus placement, but it is compelling to think that, from the two corpora chosen for this project (Pixar short films and Pixar–Giacchino feature films), the only two films in nineteen that make use of song choruses show such startling structural similarities.

5.5 Thematic Placement in *Inside Out*, *Ratatouille*, and *Coco*

This section focuses on the placement of the principal themes of *Inside Out*, *Ratatouille* (notation in **Example 3.8**), and *Coco* to demonstrate the consistency with which Giacchino assigns melodic themes to certain plot events. **Figure 5.10** aligns the FMO diagrams of the three films to illustrate nine potential zones of thematic deployment (labelled A–I). Initial observations show that the opening acts of *Inside Out* and *Coco* already align with considerable accuracy (ending at 29.07% and 26.53% respectively) and so too do the third acts of *Inside Out* and *Ratatouille* (beginning at 85.45% and 85.53% respectively). These initial alignments reveal likeness in the placement of Thematic Zones A and B and G, H, and I. The midpoint of each film also aligns well, falling at 57.16%, 58.95%, and 58.70% of each film respectively. The following section proportionally equalises the individual acts of these films to uncover further similarities in the distribution of themes and the narrative events they accompany.

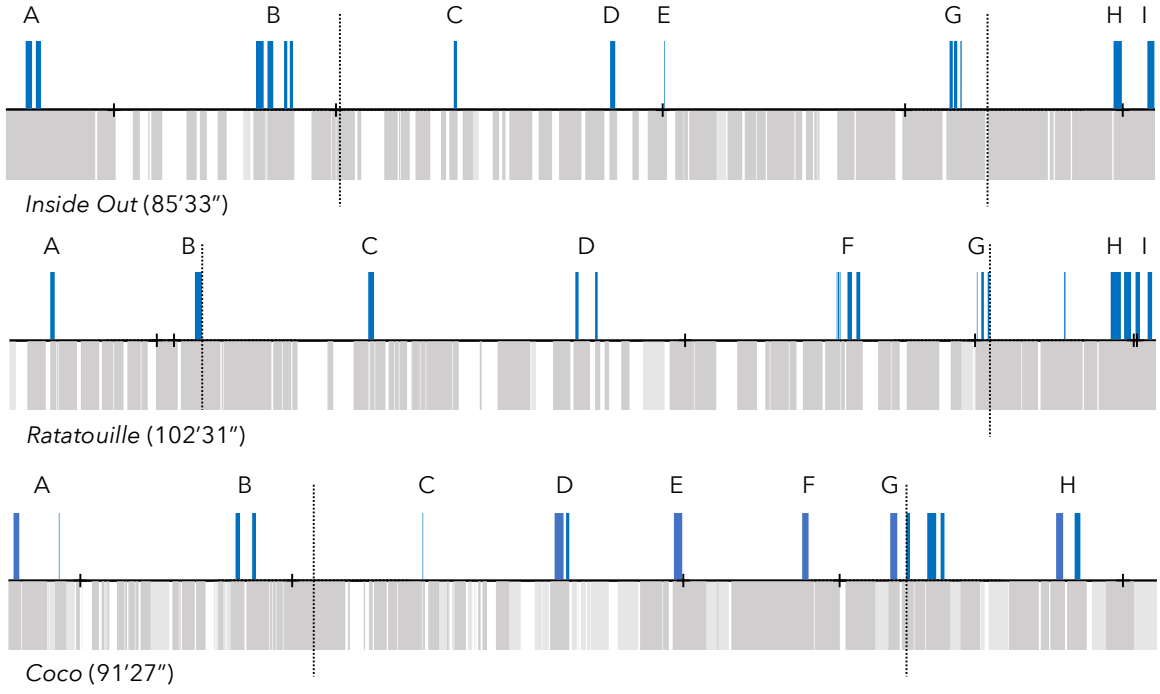
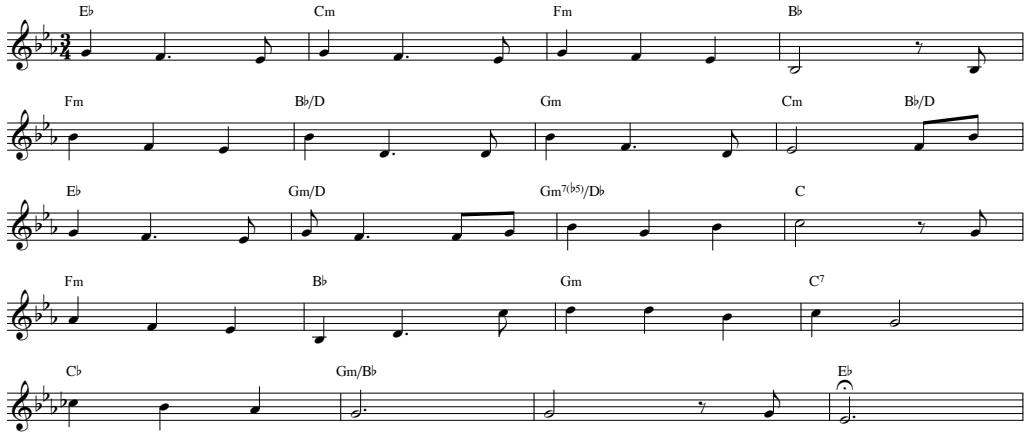
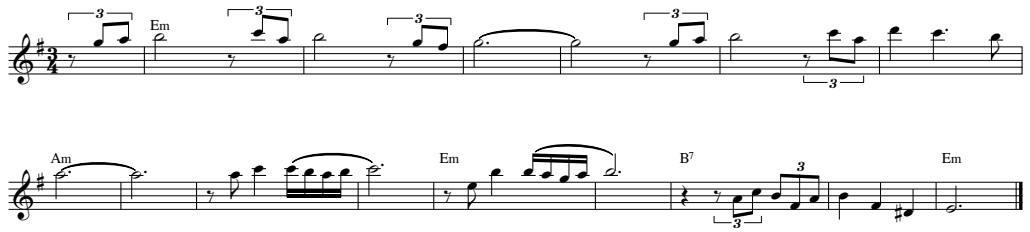


Figure 5.10 A comparison of thematic distribution in *Inside Out*, *Ratatouille*, and *Coco*

The principal themes of *Ratatouille* (**Example 5.8**) and *Coco* (**Example 5.9**) are notated below for reference. Note that the *Coco* theme is from the non-diegetic soundtrack and is different to the diegetic 'Remember Me' as discussed in the previous section.



Ex. 5.8 *Ratatouille* principal theme



Ex. 5.9 *Coco* principal theme

5.5.1 Thematic Placement in Act 1

Figure 5.11 equalises and aligns Act 1 of each of the three films, highlighting the similar orientation of the themes not just in *Inside Out* and *Coco* (as previously observed), but in *Ratatouille* also.

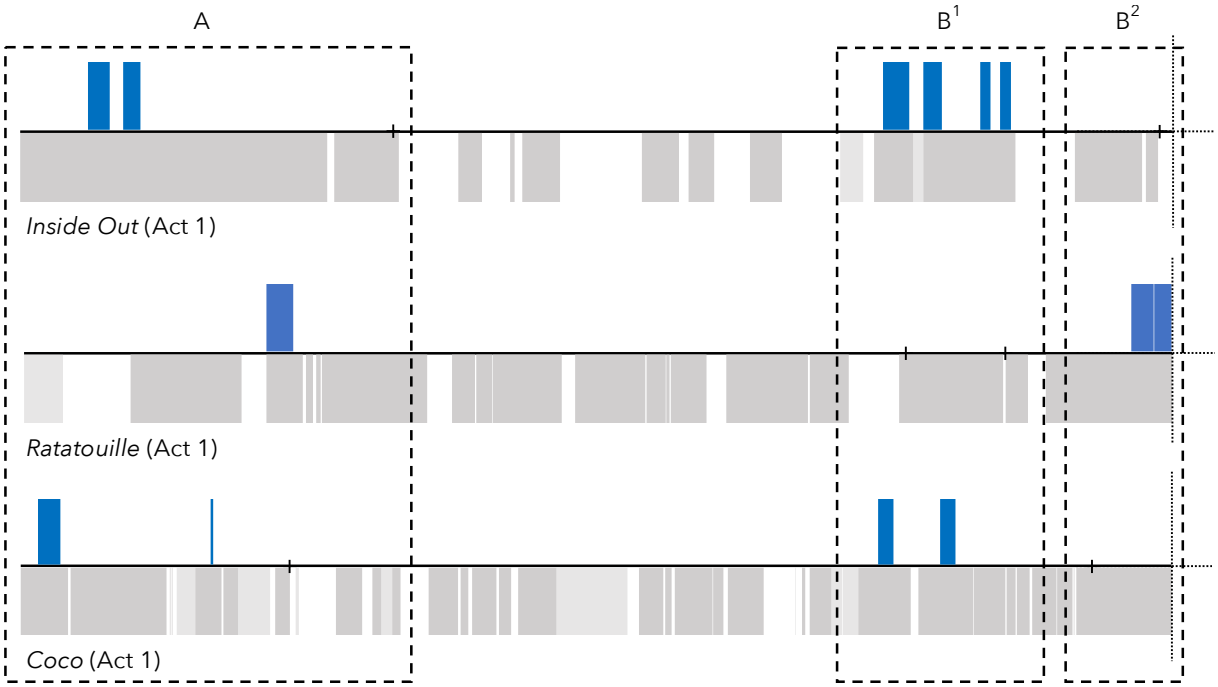


Figure 5.11 Proportionally aligned Act 1 of *Inside Out*, *Ratatouille*, and *Coco*

In each of the three films, the first statement of the theme, **Thematic Zone A**, occurs within the Glory Days sequence. In *Inside Out* and *Ratatouille*, Giacchino deploys these melodies when the progatonists are in their element, doing what they love. Joy is creating a happy memory for Riley and Remy is explaining what he loves about humans: '…they don't just survive. They discover; they create!' These scenes convey the characters' innermost desires; desires that will be upended and tested throughout the respective films. Giacchino first unveils *Coco*'s principal theme under an expository voiceover explaining Miguel's family history. Miguel, whose surface longing is to perform music, is not yet aware that it is his family's acceptance that he truly desires. Placing the theme here foreshadows this revelation to the viewer. It is worth reminding the reader here that, because this film uses the diegetic song 'Remember Me' as the prominent musical motif at significant moments, the principal theme will at times receive a slightly different treatement to those of *Inside Out* and *Ratatouille*.

Inside Out and *Coco* have strikingly similar thematic placement in the Today sequence (**Thematic Zone B^1**). The scenes they underscore show the protagonists' last-ditch efforts to retain what they love in Act 1 before finding themselves, reluctantly, in Act 2. *Inside Out*'s Joy forces optimism on the team in a last-ditch effort to boost morale and *Coco*'s Miguel desperately tries to hunt down a guitar in a last-ditch effort to perform at the talent show. Both characters are forced, against their will, into Act 2, with Joy sucked up a tube and transported to Long-term Memory where she will remain until the climax of the film and Miguel being turned into a spirit and having to cross the Marigold bridge to the Land of the Dead in search of a remedy. *Ratatouille*'s Remy, unlike Joy and Miguel, is moving into Act 2 by choice, escaping a chapter of his life in which he was unappreciated and unfulfilled. Crossing the Threshold, Remy finds himself in Paris at Gusteau's restaurant, alone but thrilled (**Thematic Zone B^2**). The principal theme here accompanies his conscious transition into Act 2 as he looks out over Paris for the first time, confirming his delight at being out of the sewers, away from the colony, and able to freely pursue his love of cooking and fascination with humans. A correlation between theme placement and entering Act 2 willingly was also made in the analyses of short films *Partly Cloudy* and *Piper*. Like Thematic Zone B^1, it may be construed as a last-ditch effort to *find* what they love rather than retain something they have.

Figure 5.12 demonstrates that Thematic Zones A and B can also be found in Pixar–Giacchino features *The Incredibles* and *Up*. Both films have Glory Days sequences saturated with principal themes. In *The Incredibles*, the theme first accompanies a logo announcing the title of the film and then closely aligns with Mr Incredible's acts of heroism throughout the rest of the sequence. *Up*'s principal theme begins when Ellie introduces herself to Carl and the pair set off on their first adventure: retrieving a lost balloon. The melodic theme recurrs throughout the montage of their marriage, firmly attaching itself to the couple and their sense of adventure together.

The Incredibles and *Up* have both Thematic Zones B^1 and B^2. The occurrences of the principal theme in the Today sequence of both films underscores scenes in which the protagonists remember their Glory Days as they decide whether or not to move on, each weighing up the cost of staying still versus the potential of change. Both films also have

moments of theme during the Crossing the Threshold sequences (B^2). Like in *Ratatouille*, these protagonists choose to leave their unfulfilling Todays in the hope that they will find fulfilment elsewhere. Rather than digging their heels in, as Joy and Miguel did, refusing to let the impetus be a disruption, both Bob and Carl decide to welcome change and actively accept the opportunity to move forward. For this reason perhaps, their themes accompany them as they transition into Act 2.

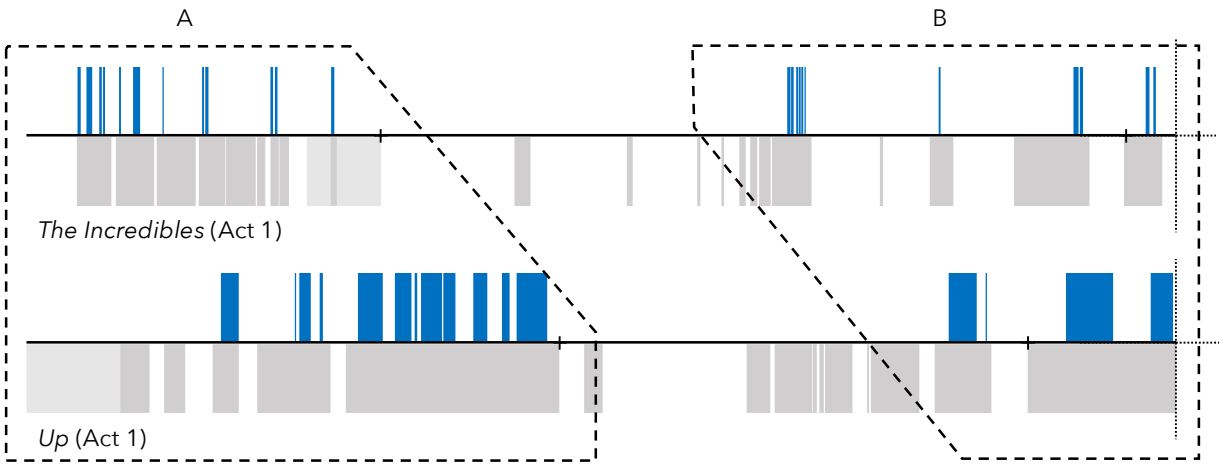


Figure 5.12 Proportionally aligned Act 1 of *The Incredibles* and *Up*

Incredibles 2, with a Glory Days section saturated with thematic material, has only two brief instances of theme in quick succession during the Today sequence. These thematic statements occur at the moment an opportunity to return to hero life (i.e., their glory days) arrives. Mrs Incredible then transitions willingly into Act 2. On the evidence of *Ratatouille*, *The Incredibles*, and *Up* (stories in which the protagonist accepts the opportunity to move on) one might expect thematic material during the Crossing the Threshold sequence of *Incredibles 2*. Instead, a jazzy groove entitled 'Diggin' the New Digs' on the commercial soundtrack release supports the transition.

Cars 2, also with a thematically-saturated Glory Days sequence (fulfilling the observed requirements of Thematic Zone A), has no instances of theme during the Today or Crossing the Threshold segments. This is likely due to the theme's initial affiliation with a secondary character who does not appear again until Act 2.

5.5.2 Thematic Placement in Act 2

Proportionally aligned, **Figure 5.13** shows Act 2 of *Inside Out*, *Ratatouille*, and *Coco* (which make up 56.38%, 68.74%, and 51.61% of the respective films). This act exhibits five zones of thematic deployment. Within **Thematic Zone C**, the protagonists have accepted their new environment and circumstances after an initial shock. A dissolve to *Inside Out*'s Joy looking exhausted as she drags Sadness along on the journey through Long-term Memory is scored with a funfair organ performing the principal theme as a slow dirge.[218] Joy expresses unhappiness at her circumstances: a contrast to her optimistic persona of Act 1.

Ratatouille's Remy, by contrast, looks out over Paris after he is welcomed into Linguini's flat; the beginning of his new life. A luscious orchestral arrangement of the film's principal theme (with requisite French accordion) transitions from the diegetic soundtrack of a black-and-white TV movie into the non-diegetic aural space of *Ratatouille*. Remy is content during his Journey Begins sequence: a contrast to his frustrated Act 1 self.

The theme in *Coco*'s Thematic Zone C occurs at the end of the scene that falls *slightly before* Miguel is truly embedded in his journey alongside his 'mentor'. The theme is hinted at in the brass section as a large flying beast sets off in search of Miguel and Héctor. A cut reveals the pair fully immersed in their journey in the Land of the Dead. Based on the scores of *Inside Out* and *Ratatouille*, one might predict the theme to be present at this moment rather than a few seconds before.

[218] A comparison could be made with the slowed-down chorus in Act 2A of *Lava* in the previous chapter.

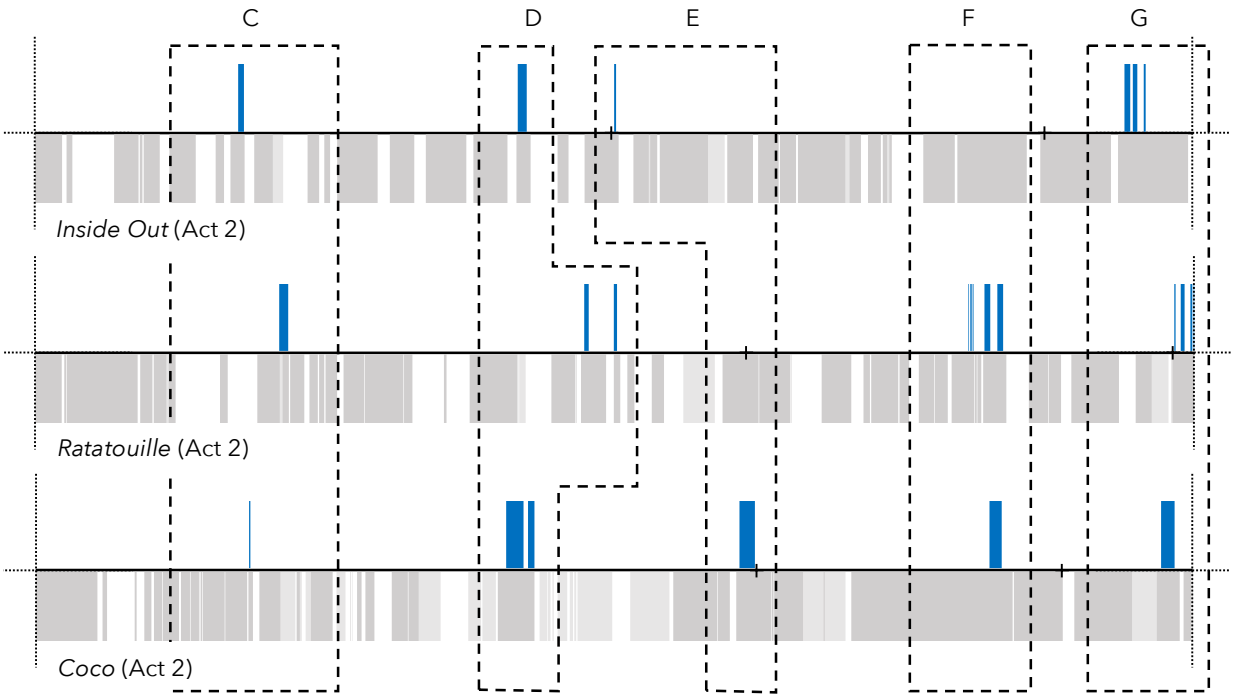


Figure 5.13 Proportionally aligned Act 2 of *Inside Out*, *Ratatouille*, and *Coco*

The corresponding scene of *Up* is scored with a plodding groove outlining Russell's theme, which is closely based on Ellie's theme, i.e., the principal theme. It has parallels with the same scene in *Inside Out* (see **Figure 5.14**); two characters, trekking through an unknown terrain, left to right across the screen, protagonist leading and deuteragonist trailing (both being dragged along), underscored with slow thematic material.

Up *Inside Out*

Figure 5.14 Visual similarities from the Journey Begins sequence of *Up* and *Inside Out*

As discussed above, *The Incredibles* and *Incredibles 2* are largely without theme during the Journey Begins sequence. However, the scene in *The Incredibles* in which Mr Incredible

beats a robot and flirts with Mirage could be interpreted as the superhero accepting his new environment, though he is far from upset about it.

Thematic Zone D occurs on the lead up to the midpoint. The themes accompany scenes that reaffirm the messages of Act 2A: a disastrous ice hockey scene reminds viewers of the disruption caused by Joy's absence (she must return home); the 'second death' scene confirms that the Land of the Dead is not somewhere Miguel should remain for too long (he must return home); and scenes of Remy smiling contentedly at his situation reaffirms that this is exactly where he should be (he should not return home). These scenes are not ostensibly significant, but they function to remind viewers of the current situation ahead of the midpoint reversal of fortune.

In *Inside Out* and *Coco*, the theme also marks the end of the Journey Begins sequence at the stories' respective midpoints (**Thematic Zone E**). The theme accompanies the protagonist as they share an intimate conversation that provides useful information. For the first time, Joy recognises the value of Sadness (and of sadness) as she comforts Bing Bong until he feels better. Joy asks Sadness how she achieved this and is told, 'He was sad, so I listened to what–' before being cut off. The theme then accompanies the transition into Act 2B. In *Coco*, as Miguel irritably leaves Héctor and Dante to set out on his own, he is stopped by Mamá Imelda and it is explained that their shared family history is not what he has previously been told. The theme underscores the conversation between the two before Miguel heads off, alone, into the next sequence. It seems a surprising decision to exclude the principal theme from *Ratatouille*'s midpoint scene, in which Remy defies his father's warning about returning to the humans. Remy stands strong behind his progressive beliefs with an inspirational speech that could have been effectively reinforced by a parting hint of the theme that has come to represent his 'hopes and wishes and dreams'.[219]

None of the other four films in this corpus use melodic themes in Zone E in the same way as these three, though the midpoint conversation in *Up* is scored with the leitharmonie of Russell's theme, which, as remarked, hints at the principal theme.

[219] Adjectives provided by Giacchino in 'Michael Giacchino - Scoring Ratatouille' at https://www.youtube.com/watch?v=0iT-pTNLfZI (Accessed 21st March, 2019)

Of the three films, only *Ratatouille* and *Coco* have principal theme material during the Journey Continues sequence. In **Thematic Zone F**, the theme accompanies the protagonists at the peak of their success, the fulfilment of their original goals, before the downfall that leads to the All is Lost moment. Remy retrieves the papers that, in one fell swoop, make Linguini the owner of the restaurant, get Chef Skinner fired, affords Linguini and Remy a new house, and, in short, allows Remy to live his dream life. These revelations are delivered in a montage, underscored with the principal theme in song form: 'Le Festin' sung by French artist, Camille.

In *Coco*, Miguel has similarly succeeded in his aim of discovering that he is related to the great Ernesto de la Cruz, who is thrilled to discover his great-great-grandson is a budding musician. Rather than underscoring these scenes of triumph, the principal theme accompanies the following scene instead as it is revealed that Ernesto in fact poisoned Héctor.

As Joy's goal of returning to Headquarters in *Inside Out* is not achieved until the end of the film, she does not have a peak moment, but falls into the Memory Dump (where she will spend her All is Lost scene) after a last-ditch attempt at returning home fails. During this initially successful attempt, rather than deploy the principal theme again, Giacchino employs an ostinato figure that will be examined in the following chapter.

Up shows signs of a similar Thematic Zone F to that of *Ratatouille* and *Coco*. Russell and Carl successfully evade Charles Muntz and find Kevin's home. Thrilled and keen to return her to her young, the group rush forwards to the tune of Ellie's theme. Suddenly, Muntz arrives, steals Kevin, and sets fire to Carl's house. As a result, Doug leaves and Russell and Carl fall out. The scene and the theme mark the group's last glimpse of success before the end of the film (statement F of *Up*). The two *Incredibles* films also have iterations of thematic material during the fight scenes that precede the All is Lost moments (the statements at D of *The Incredibles* and F of *Incredibles 2*).

Thematic Zone G covers the All is Lost sequence of all three films as the protagonists work out their true role in life. In *Inside Out*, the principal theme plays as Joy and Bing Bong attempt their escape from Memory Dump. Determined by the new-found understanding that sadness facilitates happiness, the pair commence their escape. In *Ratatouille*, the

theme underscores dialogue as Remy talks through the hopelessness of his situation with his mentor, a hallucination of chef Gusteau. Remy finally realises who he is and what his purpose in life is. He is then broken out of the cage in which he is imprisoned and returns, determined, to the restaurant for the final act. Similarly, *Coco*'s Miguel speaks with his mentor Héctor to learn the truth of his family history at last. The information received in this scene provides him with the motivation to escape and pursue the goal of saving his great-great-grandfather. The All is Lost sequence acts as the catalyst for the Final Push and is a pivotal scene. The protagonist cannot progress from this sequence until they have processed their situation and come to a profound conclusion. Scoring these scenes with the principal theme reminds the viewer of what the protagonist is aiming for: a return. The All is Lost scenes of *Inside Out*, *Coco*, and *Ratatouille* are remarkably alike: the protagonist and mentor characters are trapped in a dark, deep pit (or cage) that represents the hero's lowest moment. **Figure 5.15** shows similarities in the cinematography of all three films.

Inside Out

Coco

Ratatouille

Figure 5.15 Visual similarities in the All is Lost sequence of *Inside Out*, *Coco*, and *Ratatouille*

The *Incredibles* films have such brief All is Lost scenes that there is barely time for any thematic material and, because the principal theme is not yet assigned to Mater, *Cars 2*'s All is Lost scene is also thematically vacant. Giacchino does, however, employ a lengthy

rendition of the principal theme during *Up*'s extended, touching All is Lost sequence. Solo piano takes the melody and is later joined by swelling strings as Carl discovers his wife's photo album, in which is a handwritten message thanking him for the adventure and encouraging him to 'go have a new one!'

5.5.3 Thematic Placement in Act 3

Figure 5.16 provides information on the thematic placement of the films' third acts, which make up 14.55%, 14.47%, and 21.85% of each film. In **Thematic Zone H** of *Inside Out* and *Ratatouille*, the principal theme occupies the last moments of the Final Push sequences. Joy and Sadness work together to allow Riley to process her feelings, create their first compound memory, and help her to connect with her parents in a new and profound way. Remy receives the review of 'nothing less than the finest chef in France' from the once-vitriolic food critic, Anton Ego. The themes that underscore these climactic moments come to a close and the Aftermaths begin, both of which have final iterations of the theme as the film closes (**Thematic Zone I**).

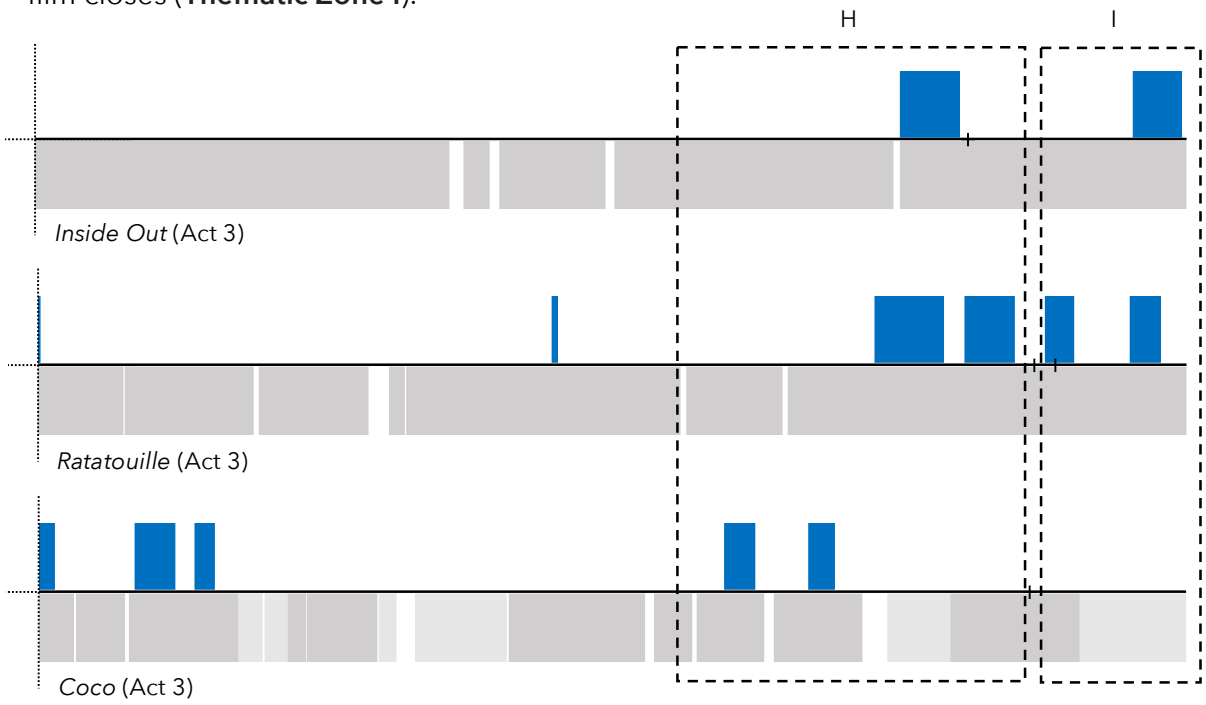


Figure 5.16 Proportionally aligned Act 3 of *Inside Out*, *Ratatouille*, and *Coco*

Coco's climactic scene is scored with an intimate, diegetic version of 'Remember Me', with the principal theme heard moments before as Miguel loses faith that his great-great-grandfather will be saved (H). The Aftermath of *Coco* does not contain the principal theme

as *Ratatouille* and *Inside Out* do, but has instead a previously-unheard, rousing Disney-like diegetic song performed by Miguel.

Unsurprisingly perhaps, the remaining four films in the Pixar–Giacchino collection include the principal theme in abundance in both the final stages of the Final Push and Aftermath sequences. *Coco* is the only film in this set that does not include principal theme in its Aftermath.

5.6 Conclusion: Towards a Theory of Thematic Placement

Based on the observations of *Inside Out*, *Ratatouille*, and *Coco*, one might argue that Giacchino's approach to thematic distribution is somewhat prescribed. **Figure 5.17** depicts the ten regions of a film score in which Giacchino will likely deploy thematic material. **Table 5.2** provides plot descriptions for each event.

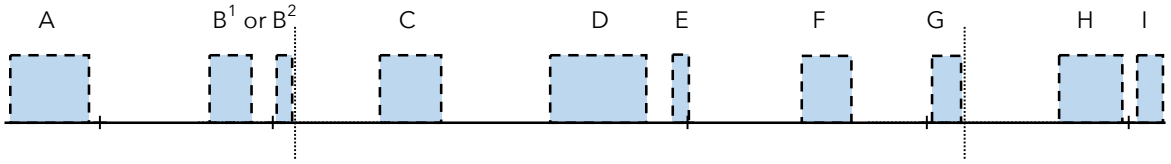


Figure 5.17 Zones of thematic deployment in Pixar–Giacchino feature films

	SEQ	NAME	PLOT DESCRIPTION
A	GD	Introduction	The protagonist is introduced doing what they love.
B^1	T	Reluctance	The protagonist makes a last-ditch effort to hold on to what they love.
B^2	CtT	Commit	The protagonist commits to change, actively crossing into a new situation.
C	JB	Embedded	The protagonist is shown embedded in their new situation/location.
D		Reaffirmation	A scene reaffirming the protagonist's situation.
E		Conversation	The protagonist shares an insightful conversation.
F	JC	Success	The protagonist has achieved their initial goal. This scene happens before a decline towards them losing everything.
G	AiL	Revelation	The protagonist has a revelatory moment.
H	FP	Climax	The protagonist solves the problem, restoring balance to their world.
I	A	Transformed	The protagonist enjoys their renewed life.

Table 5.4 Descriptions of Giacchino's ten zones of thematic deployment

Each film in the Pixar–Giacchino oeuvre fulfils these formula requirements to varying degrees:[220]

Inside Out:	**A**	**B^1**	**C**	**D**	**E**		**G**	**H**	**I**
Ratatouille:	**A**	**B^2**	**C**	**D**		**F**	**G**	**H**	**I**
Coco:	**A**	**B^1**	**C**	**D**	**E**	**F**	**G**	**H**	
Up:	**A**	**$B^{1,2}$**	**C**		**E**	**F**	**G**	**H**	**I**
The Incredibles:	**A**	**$B^{1,2}$**	**C**			**F**		**H**	**I**
Incredibles 2:	**A**	**B^1**				**F**		**H**	**I**
Cars 2:	**A**		**C**	**D**	**E**			**H**	**I**

[220] Underlined letters represent a contestable adherence to the definitions.

Predictably, themes are typically placed at the Introduction (Zone A) and Climax (Zone H). This occurs in all seven films. The introduction of the protagonist and the climax were also thematically accentuated events in each of the Pixar short films. The use of the principal theme during the Aftermath sequence (Zone I: Transformed) is found in all films except for *Coco*, which employs a Disney-like diegetic song in this moment instead. Zone B (Reluctance/Commit) is dependent on the protagonist's willingness for change. The films in which both B^1 and B^2 are fulfilled are the stories in which the protagonist takes the most time to make a decision, weighing up the pros and cons of moving on (B^1) and deciding in favour of the decision and journeying forth (B^2). The deployment of themes is less predictable towards the centre of the film. However, in most, the protagonist retains some semblance of their theme despite being embedded into a new world (Zone C: Embedded) and is thematically tagged moments before their fortunes take a turn for the worse (Zone F: Success). It is likely that, were the *Incredibles* films' All is Lost sequences to have lasted longer, a tender arrangement of one of its themes would appear at the Revelation (Zone G). Themes accompany the All is Lost sequence in four of the films in this corpus as well as in a number films beyond the Pixar–Giacchino oeuvre.

This chapter highlights and provides a provisional formula for Giacchino's consistent coordination of themes and specific scenes. His distribution of melodies borders on the prescribed, with prominent melodies regularly acting as signposts for familiar plot events. However, as discussed, the protagonist's journey is fundamentally prescribed so it follows logically that the principal theme, which primarily functions as the 'protagonist's theme', pursues a similarly recognisable trajectory.

6

CUE ORGANISATION IN PIXAR–GIACCHINO FEATURE FILMS

Well, if we didn't have the music in the picture in the first place we couldn't stop it.
Which is to say that we put music there so we can stop it.
– Alfred Hitchcock

6.1 Introduction

The organisation of cues plays an important role in determining how music supports the architectural form of the film. As discussed in previous chapters, film music's affective potency is typically dependent on setup and context; music cues are relative to and dependent one another for meaning and value. Traditionally, it is during the spotting session that these decisions are discussed and confirmed. However, in recent years, technological advances have led to a more flexible editing workflow, the result of which is composers being forced either to work with footage that is continually being altered, i.e., not 'locked' in place, or to no picture at all. One of the consequences of this changing filmmaking practice is that spotting sessions have become more abstract, focussing less on detailed, technical aspects like in/out timings and sync points and more on broader storytelling considerations. These changes are, in turn, affecting modern film scoring practices and strategies, forcing decisions about the positioning of music to be carried out late in post-production rather than treating it an integral factor in music's ability to communicate meaning.[221]

One of the key findings of the previous chapters is the significance of negative space; passages of film can be defined as readily by the absence of musical themes as by their presence. This chapter focuses on the relationship between music and silence (presence and absence; foreground and background) as well as its interaction with film form. That is, how the composer uses the negative space between composed cues to contribute to the

[221] The numerous ways in which changing filmmaking practices are affecting composers' creative output is discussed in Hexel, V., 'Understanding Contextual Agents and Their Impact on Recent Hollywood Film Music Practice,' PhD thesis (London: Royal College of Music, 2014)

storytelling. Giacchino routinely removes music in accordance with other visual and aural elements as part of a shared strategy. In this chapter, examples of this coordinated approach to storytelling are presented chronologically by sequence, from the Glory Days through to the Aftermath.

The second part of the chapter explores the idea of music saturation, i.e., the quantity of music deployed in each section.[222] For each of the Pixar–Giacchino features, saturation data is provided and reviewed at four levels: 1) the entire film; 2) the three-act form; 3) a four-act reading; and 4) an eight-part assemblage. As the narrative breakdown becomes more detailed, the figures reveal additional information about the shape of the score. There is a uniformity in the total quantity of music in each film and common trend in the volume of music used in each act that suggests a certain homogeneity in the production of these films.[223] Breaking the analysis down further into the eight-sequence 'Pixar narrative' structure outlined in the methodology chapter, the data reveals a more nuanced outline of the music saturation properties at each phase of the film, providing discrete saturation characteristics for each sequence. This analytical approach to film music provides a novel and insightful perspective on the morphology of a score and its relationship to narrative structure that has not previously been considered in the screen-music literature.

6.2 Cue Organisation

6.2.1 Glory Days

The Glory Days can be divided into four parts: the Opening, the Introductions, the Disruption, and the Consequence.[224] This following analysis demonstrates how Giacchino uses the patterning of non-diegetic music, diegetic music, and musical silence, as well as changing orchestrations, to imbue each part with its own perspicuous musical identity.

Generally, the Glory Days is a sequence heavily saturated with music: the average music saturation of this sequence in these seven films is 86.78%. Breaks between cues tend to be reserved for brief hiccups of misfortune. In *Inside Out*, for example, music occupies 98.14% of the total sequence, with 7'54" of the 8'03" passage scored. The first and only beat of

[222] I use the word 'quantity' here to mean the ratio of music to musical silence rather than specific durations, issued as a percentage of the total music in the given section.
[223] The term 'volume' here refers to quantity rather than loudness.
[224] Definitions of these terms can be found in Chapter 3.

musical silence during the entire sequence occurs at the Disruption (marked D on **Figure 6.1**).

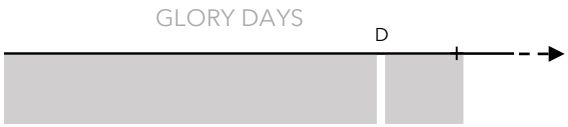


Figure 6.1 *Inside Out* Glory Days cue distribution

After introducing the world and the characters within it, Joy's voiceover tempts fate by asking, '…things couldn't be better […] what could happen?' The underscore stops abruptly as a For Sale sign is planted into the ground. The family packs up and they set off for San Francisco. Music re-enters to accompany the travel montage that makes up the Consequence passage and continues uninterrupted until the end of the sequence. By aligning the only musical silence of the sequence with the sole moment of calamity, Giacchino quickly assigns the presence of music to progress and its absence to hindrance – a connection he continues to exploit throughout the first act.

The correlation between breaks in the music and the protagonist's misfortune can also be found in the Glory Days of *Coco*. The sequence is well saturated – with 5'18" of the 5'40" total scored (93.53%) – and uses a combination of non-diegetic score and diegetic performances. During the Opening, as a voiceover explains the Rivera family history, the first break between cues occurs when we the audience are told that, many years ago, a musical relative betrayed and abandoned the family. The score resolves on a forlorn E-minor chord, then pauses momentarily, highlighting the significance of the event; this event is the reasoning behind the family's banishment of music, which drives the rest of the plot. Uplifting music quickly returns as Miguel explains how the family moved on from this tragic event. Brief pauses in *Coco*'s Glory Days soundtrack thereafter are largely the result of onscreen musicians being told 'no music!' by Miguel's grandmother and, eventually, the death of Miguel's hero, Ernesto de la Cruz. While there is not one singular Disruption as in *Inside Out*, each micro-disruption accumulates to demonstrate that, because a musician betrayed the family, the family disapproves of music, and, because the family disapproves of music, Miguel must keep his passion for it hidden (the Consequence).

Likewise, breaks in the score correspond with setbacks in *Cars 2*. The first occurs when

Finn McMissile is first spotted by the villains, i.e., the Disruption. Consequentially, McMissile is chased from the oil rig upon which the nefarious activities are being contrived. A high-paced score accompanies this entire scene. The two breaks hereafter are functional, allowing large explosions to command the sonic space, the latter of which appears to have killed McMissile. Music remains absent as the car sinks lifelessly, trailing oil. Music returns as the character opens his eyes and stealthily propels himself to safety. The sequence is 91.79% musically saturated with 6'09" of the 6'42" sequence scored.

Up has a Glory Days that is more obviously segmented both visually and musically. The Opening is sonically-defined by a diegetic cue: the antagonist's theme, which underscores a black-and-white documentary film in a dark cinema.[225] A cut to young Carl walking home in bright daylight signals for non-diegetic score to take over as the Introductions passage begins. Contrasting aural information (diegetic to non-diegetic score) and visual information (a low-lit interior with black-and-white film to the vibrancy of a sunny outdoors) helps to create a distinct disconnect between the two parts. The continuous score of the Introductions passage is broken only a handful of times: when Carl hears Ellie for the first time; when the pair come face to face for the first time; when Carl falls, breaking his arm, and Ellie visits his house; and when Ellie leaves – the last time they are apart onscreen until her eventual demise. These events are not all setbacks in the way that was established in the three aforementioned films. Musical pauses during this particular Introductions section follow the flow of Carl's discovery of Ellie, allowing music to flow as he comes to terms with falling in love. The Introductions continue as a montage of the couple getting married and living a life together unfolds. The entire section is scored with a dynamic and richly orchestrated cue that grows and slows in line with the couple's tale. When Ellie falls ill and ultimately passes away (the Disruption),[226] the score drops down to an intimate piano and harp arrangement. The Consequence is Carl returning home alone, seemingly for the first time since he was boy with a broken arm. The heart-wrenching images are scored with only piano chords; the melody, like Ellie, has left him. **Figure 6.2** demonstrates the clarity of form in Giacchino's Glory Days scoring in *Up*, showing how he musically and sonically

[225] The score for this cue was printed to 16mm optical track so that it undulated realistically along with the onscreen film projector.

[226] It is unkind to classify a spouse's passing as a 'disruption'. This label refers solely to the event's function in the narrative.

distinguishes the four key passages of the sequence.

——————————————————— *Up*: GLORY DAYS ———————————————————|- - -

Opening	Introductions	Disruption	Consequence
Diegetic	Non-diegetic orchestra	Piano and harp	No melody

Figure 6.2 *Up* Glory Days cue organisation[227]

Ratatouille opens in a similar way to *Up* with a documentary announcing the as-yet-unknown antagonist. Though the music is not manipulated to be a sonic verisimilitude of the type the single small television speaker would produce, its diegetic status may be inferred. Music cuts out halfway through the Opening as antagonist Anton Ego is introduced and remains absent until Remy's voiceover begins the Introductions. There are a few short breaks in the score throughout this section, mostly to free up scenes of dialogue. The next significant musical silence occurs at the moment of Disruption. An old lady, within whose attic the rats have been residing, shoots several holes in the ceiling, forcing the rats to flee. The musical silence begins with the conclusive gunshot. Music returns as the rats, realising their dilemma, scamper from their home. Remy gets left behind and music, like the colony, leaves him. He journeys into the Today sequence alone, socially and sonically. Despite the atypical proportions of the sequence, Giacchino manages to follow its underlying four-part form with a coordinated patterning of diegetic and non-diegetic cues, and musical silences (as illustrated in **Figure 6.3**).

——————————————————— *Ratatouille*: GLORY DAYS ———————————————————|- - -

Opening		Introductions	Disruption	Consequence	
Diegetic	No score	Non-diegetic	No score	Non-diegetic	No score

Figure 6.3 *Ratatouille* Glory Days cue organisation

The Opening of *The Incredibles* is distinctive not for its diegetic quality, but for its lack of score. The score begins only as the film's logo bursts onto the screen and continues

[227] The proportions of these diagrams are not to scale. They are merely representational.

throughout the Introductions section, breaking only briefly for the exposition or conclusion of each rescue. These moments are typically filled either with an explosion or similar sound effect, or dialogue, making the breaks in the score practical rather than particularly suggestive. Despite the action-packed scenes and bombastic score, only 8'22" of the 11'06" Glory Days is scored (75.38%). Like Joy in *Inside Out*, Bob tempts fate at the end of the Introductions, asking, 'Hey, we're superheroes. What could happen?' The next shot is a newspaper spinning onto the screen announcing the Disruption that he and his fellow Supers are being sued. The Consequence is that all Supers are forced into hiding. These two sections are presented as a documentary, which is scored with verisimilar diegetic music. As illustrated in **Figure 6.4**, Giacchino scores the four distinctive parts of *The Incredibles*' Glory Days with a tripartite score made up of musical silence, non-diegetic underscore, and diegetic underscore. The three distinct sonic qualities of the score provide each passage of the sequence with a unique sonic identity that mirrors the three distinct visual styles.

———————————— *The Incredibles*: GLORY DAYS ————————————| - - -

Opening	Introductions	Disruption	Consequence
No music	Non-diegetic	Diegetic	

Figure 6.4 *The Incredibles* Glory Days cue organisation

Incredibles 2 also opens with no music. The absence of score does not define the entire Opening section in the same way, however. Gentle underscore supports Tony's retelling of the events at the end of the prequel, but the interrogation is left otherwise unscored. An argument could be made that the few short cues heard during this Opening are operating at a metadiegetic level as an integrated part of Tony's tale, i.e., a film (or sorts) embedded within the film. A fuller bombastic score joins with the film's logo and, as with its prequel,

continues throughout the sequence, pausing only for explosions and conclusions to play out. The Disruption, the ill-fated 'success' of the mission, is without music while the Consequence, the family's arrest, is scored. 7'02" of the 8'03" or 87.37% of the Glory Days sequence is scored.

Based on the trends found in the seven sequences, a deductive summary of Giacchino's cue placement in the Glory Days sequence might read:

1. Opening: a cue of diegetic or metadiegetic music to accompany the potentially diegetic visual format. Musical silence or a non-diegetic cue may also be appropriate providing it acts as a contrast (stylistically or otherwise) to the music of the following section.
2. Introductions: non-diegetic underscore throughout, breaking only to allow through single sound effects, significant lines of dialogue, punchlines, or bad news.
3. Disruption: unscored. This important albeit brief moment must stand out sonically. Giacchino typically highlights the Disruption with the ultimate contrast to music: silence.
4. Consequence: non-diegetic or diegetic underscore until the end of the Glory Days.

Regardless of how these moments are treated musically, the simple fact that his scores respond in some way to the core passages of the sequence shows that Giacchino acknowledges and supports the architectural form of this part of the film. Though not compulsory, scores with a discrete formal logic like this can assist audiences – especially Pixar's younger fans – as they attempt to navigate and comprehend a film's story.

6.2.2 The Silences of Today

If the Glory Days sequence can be described by its abundance of music, the Today sequence might best be defined by its paucity. In six of the seven Pixar–Giacchino films, it is the least scored of the eight sequences, with an average of 56.34% music saturation.[228] Like the Glory Days, the Today sequence consists of four main parts: Crestfallen, Getting

[228] The exception is *Ratatouille*, due in part to the brevity of its Today sequence. This is discussed further in Chapter 6.3.

On, the Opportunity, and the Decision.[229]

In Pixar feature films, the transition between the Glory Days and Today is usually edited with a cut as the narrative jumps abruptly forwards in time from a happy yesteryear to a miserable present day. At this precise transitional moment in five of the Pixar–Giacchino features, the score is abruptly removed from the soundtrack, imitating and synchronising with the swift visual edit. The musical silence that occurs here is produced by such a dynamic contrast, i.e., loud music removed to reveal near-inaudible sound design (a *subito pianissimo*, of sorts), that it creates the impression of 'complete soundtrack silence'; the soundtrack appears to be muted entirely even though low-level room ambiences remain. At a local level, the dramatic removal of the musical score shocks with its stark contrast and abrupt change of pace and, at a global level, it informs experienced moviegoers that the story has moved on to its next chapter.

The removal of music at the beginning of the Today sequence is typically corroborated by changing qualities in several production elements, such as a desaturation in the colour palette, a dramatic dynamic shift in sound design, a change in the framing of shots, or a change in weather or time of day. The narrative transition demands contrast and deprivation. Characters, once thrilled to be indulging in their passions, depicted in vibrant hues and underscored with lively music cues, are left bereft, deprived of their *raison d'être*. Just as the story takes from the character, so too do the soundtrack and cinematography. Removing (or dramatically contrasting) music here is a spotting decision intrinsically tied to the particular vicissitude of the story. Just as breaks in the music mark significant moments in the music-rich Glory Days, music cues will surface to highlight certain events in this typically music-deprived sequence.

As mentioned, *Coco*'s Glory Days is heavily saturated with music, be it non-diegetic score or onscreen performances. **Figure 6.5** offers a zoomed-in look at the synchronisation of sequence transition and music placement in the opening of *Coco*. The Glory Days sequence resolves on a tonic chord as Miguel's voiceover says, '…if [De la Cruz] could play music, maybe someday I could too…'. The cue ends and the scene cuts to Miguel shining shoes as he (diegetically) finishes the sentence in musical silence, '…if it wasn't for my

[229] Definitions of these terms can be found in Chapter 3.

family.'[230] A hopeful smile in one scene turns to a dispirited countenance in the next.[231] Audiences are guided across this significant narrative transition with abrupt contrasting features at many levels of filmmaking: the removal of music, which saturated the former sequence; a jump forward in diegetic time; the shift from non-diegetic voiceover to diegetic dialogue; a change of facial expression, from happy to forlorn; a shift from optimistic to pessimistic dialogue; and a change in camera freedom, which steadies from dynamic movement to a static shot. The choreography and coordination of so many contrasting constituents produces the irrefutable sensation of starting a new chapter.

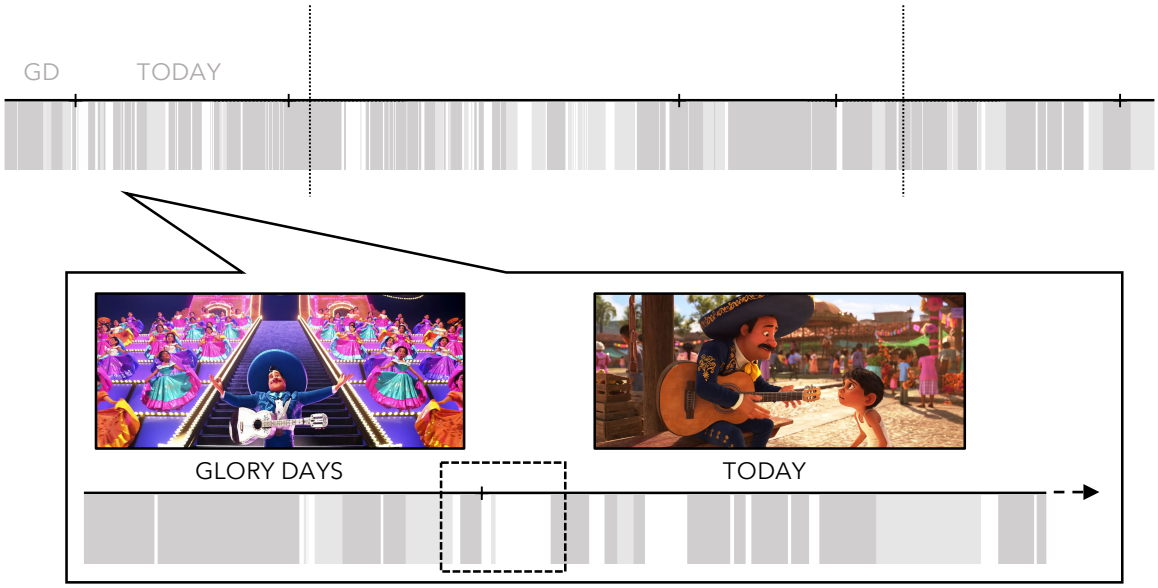


Figure 6.5 *Coco* Silence of Today

Underscore still appears throughout the sequence. In fact, 13'08" of the 16'55" sequence (or 77.64%) is scored with both non-diegetic and diegetic cues. However, the removal of music at the beginning of the sequence, i.e., the initial stages of the Crestfallen section, creates the illusion of reality (as opposed to the fairy tale-like 'Once upon a time…' of the Glory Days). I refer to this spotting decision as the Silence of Today. As mentioned, this decision has been made for five of the seven films in this chapter. The remaining four are so regularly accompanied by the removal of vibrant colour that I refer to them with their own neologism: the 'Greyscale Gap'.

[230] The voiceover is a non-diegetic element. Miguel begins the sentence as a voiceover, i.e., non-diegetically, and finishes it as dialogue, i.e., diegetically.
[231] This edit happens at 6'23".

In several instances, music and vibrant colours flood the Glory Days. As the film cuts to the Today sequence, music and colour are removed, leaving silence and a desaturated, greyscale screen in its wake. The removal of vibrant colour coupled with the removal of music reinforces the idea that the present day is dull and lacklustre by comparison with yesteryear, imitating and highlighting the protagonist's loss and dismay. Changes to other elements such as characters' expressions, movement, and framing provide information here too: a smile turning to a bored or tired expression; frenetic energy turned subdued onscreen movement; off-centre framing to central framing, etc. Alongside the Cue Distribution diagrams, stills from the film have been included to illustrate the coordination of the removal of music, colour desaturation, change of expression, lack of movement (notice the characters go from standing up to sitting, kneeling, or lying down), and move to central framing.

In *The Incredibles*, the Greyscale Gap occurs when the story jumps forward in time from the glory days of superheroes, loaded with high-energy action, vibrant colours, and 1960s-inspired big band music, to present day, with Bob (aka Mr Incredible), visibly defeated, sitting behind a desk in a colourless cubicle with no musical fanfare whatsoever (see **Figure 6.6**). The vibrant colours and lively music of the previous sequence are immediately eliminated as the edit cuts from scene to scene. The cue, left hanging on a dominant chord, is followed by the dull thud of a 'DENIED' rubber stamp, which cleverly substitutes the expected tonic resolution.[232] The next shot shows Bob, previously the young, animated, super-heroic Mr Incredible, sitting in the centre of the frame, surrounded by squares and vertical lines. These visuals are designed to portray the protagonist as trapped and isolated. Like the contrast between music and silence, the dull visual style is particularly semantically potent when presented immediately after its contrasting counterparts: movement, smooth curves, diagonal lines, and off-centre framing.

For the rest of the sequence, very little music is used; only 6'13" of the 23'22" sequence is scored (26.60%). Music only accompanies scenes in which superpowers are being displayed. This association between music and superpowers echoes the relationship between music and magic in the first act of *Harry Potter and the Philosopher's Stone*. By

[232] This edit happens at 11'34".

connecting music with the fantastical, the absence of music quickly becomes shorthand for mundanity. When music returns to underscore the Opportunity scene, though no superpowers are being exhibited, the moment stands out as extraordinary against the previously unscored ordinary. Bob mulls over the proffered mission in musical silence and then, as he accepts the assignment, music returns, highlighting his Decision and easing the segue into the Crossing the Threshold journey.

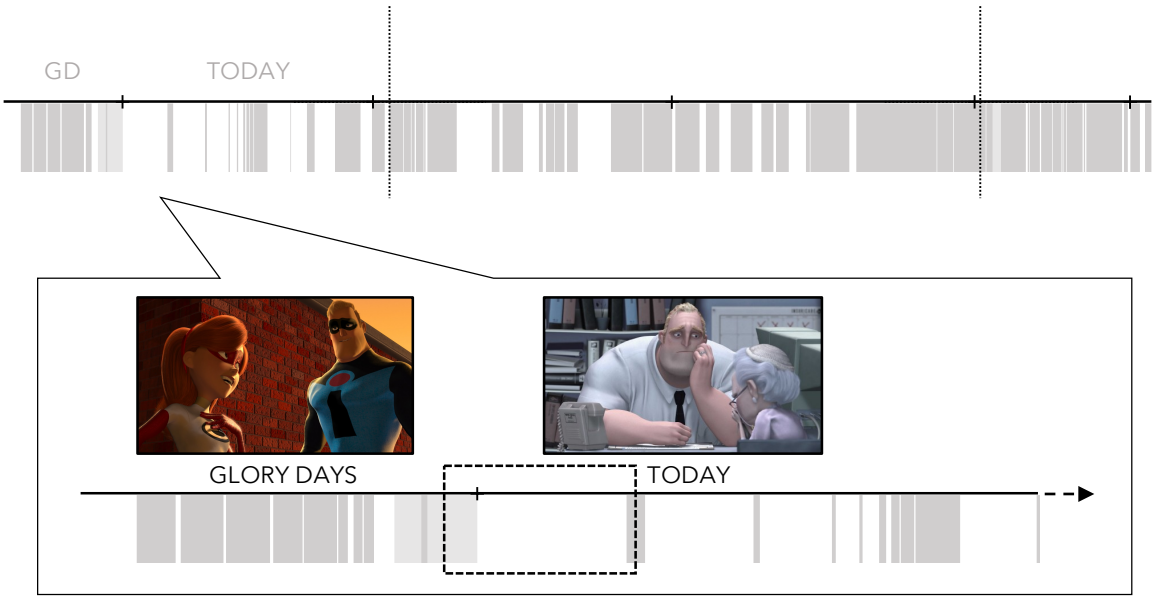


Figure 6.6 *The Incredibles* Greyscale Gap

In *Incredibles 2*, at the end of an action-packed Glory Days, complete with vibrant colours and bombastic underscore, the family are arrested and the story jumps to later that day, where the superhero parents are being reprimanded in a low-lit, grey interrogation room, complete with the vertical lines and central framing shown in **Figure 6.7**. Rather than having the music cut off abruptly, tremolo strings and a mysterious Dm^{maj7} harp arpeggio traverse the edit ever so slightly, but quickly die away to leave the beginning of the Today sequence in musical silence.

This film, like its predecessor, employs music sparingly with only 5'40" of the rest of the 14'34" sequence scored – a mere 38.90%. The first two cues in the Today passage are negligible, supporting the reveal of and farewell to Rick Dicker (the interrogator of the Glory Days' Opening). As with *The Incredibles*, the Opportunity is scored, their contemplation is

unscored, and the Decision is scored, transitioning smoothly into the Crossing the Threshold journey as Helen accepts the job offer.

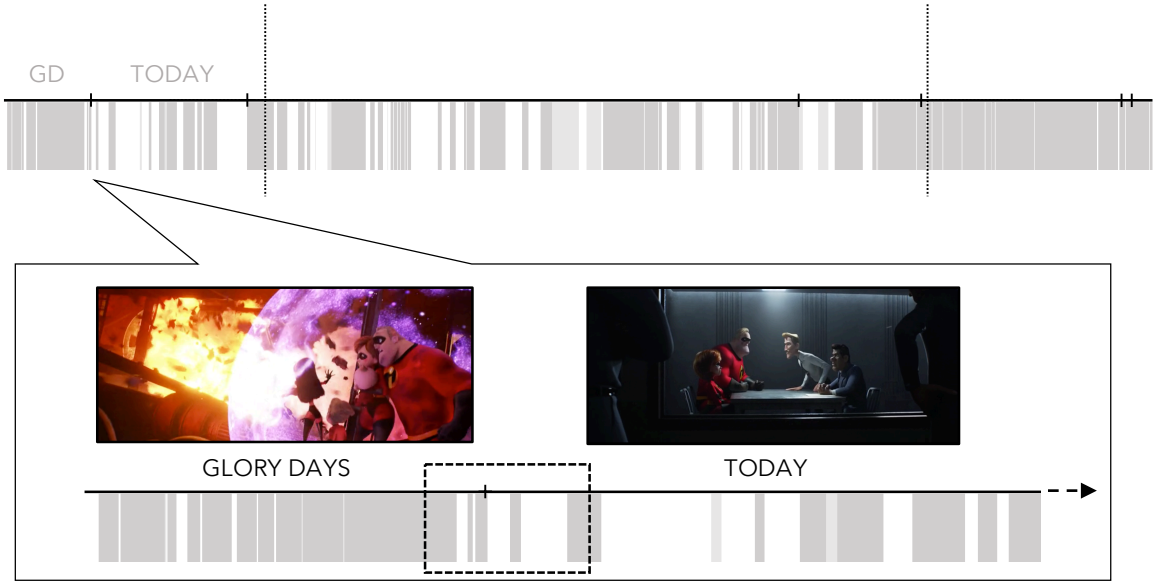


Figure 6.7 *Incredibles 2* Greyscale Gap

Up's Greyscale Gap occurs after the infamous, vibrant 'Married Life' montage.[233] Rather than an abrupt edit, the funeral scene dissolves to a black screen, mirrored by the dying sustain of the piano's pedal-held tonic chord. A cut to the present day reveals Carl sitting in bed, still, grey, and miserable (as shown in **Figure 6.8**). Musical silence coupled with greyscale colouring, vertical lines (Carl is framed inside the prison-like bars of his headboard), and a static camera immediately associates the music of the previous Glory Days scenes, and the use of music in this film more generally, with vibrancy and movement. Aside from a brief cue of Georges Bizet's 'L'amour est un oiseau rebelle' (marked with an asterisk on the FMO diagram below), which accompanies the montage of Carl's morning routine – the piece itself is a musical Easter egg that foreshadows the arrival of a rebellious bird called Kevin[234] – music remains absent until the appearance of Russell, who acts as a reminder to Carl of his former adventurous self. The Opportunity scenes are scored as Carl hits a workman with his walking stick and is sentenced to (the rest of his) life in a retirement home. A brief stint of silence underpins Carl asking aloud, 'What do I do now, Ellie?' and,

[233] 'Married Life' is a title taken from the soundtrack CD. It has all the connotations of the aforementioned 'Glory Days'.
[234] An Easter egg is an intentional inside joke, hidden message or image, or secret feature of a work.

as he makes his Decision, the chords of the principal theme return with the melody joining as memories of Ellie help the decision along. Roughly half of the sequence – 4'32" of the 9'33" (47.47%) – is scored.

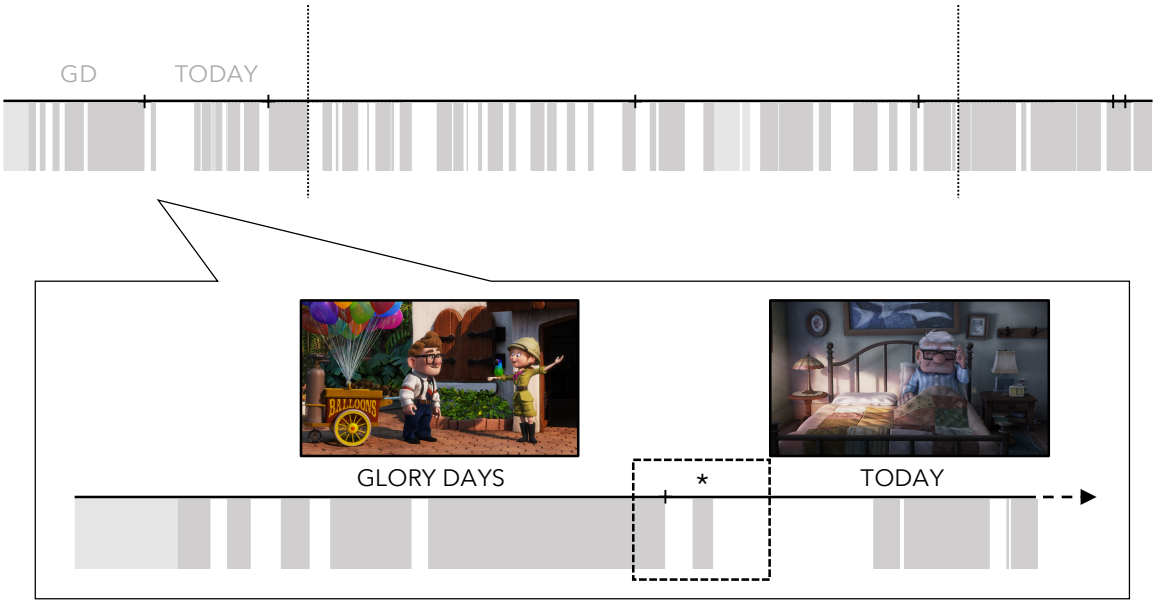


Figure 6.8 *Up* Greyscale Gap

Upon arriving at the new family home in *Inside Out*, audiences are presented with the typical Today trappings: a greyscale image, central character framing, vertical lines, dispirited expressions, and a static camera shot. An agitated ascending woodwind line anticipates the reveal of the new house, but stops abruptly as Riley looks up with disappointment on her face. A single, low cello note sustains and fades away, transitioning viewers into the music-deprived Today sequence (notice the slight overlap at this moment in **Figure 6.9**). Due to the travel sequence into this scene, there is neither a hard cut nor a slow dissolve for the music to imitate as it bows out as it does in other films; the precise timing of the beginning of the Today sequence is therefore in the hands of the composer. Giacchino decides to mark this moment a beat before Riley's expression changes. In fact, Riley's disappointed sigh acts as a visual downbeat, in the same way the rubber stamp provided a conclusive beat in *The Incredibles*. The last note of the ascending woodwind run strikes, Riley's expression changes, and the tonic cello note imitates a slow, disappointed exhale, imitating the wide shot reveal of and pan down the house's dull façade. Hereafter, 8'51" of the 16'32" sequence (53.53%) is scored. Music's start-stopping mirrors Joy's (and Riley's) morale as she tries to keep everybody happy. Music sparks up at

flashes of optimism and is extinguished by moments of disappointment: the disappointment of the new house; the disappointment of her father being called away for work; and the disappointment of broccoli-topped pizza. Associations are continually made between the presence of music and the notion that *things are going well* and the consequent inference that the absence of music means that *things are not going well*.

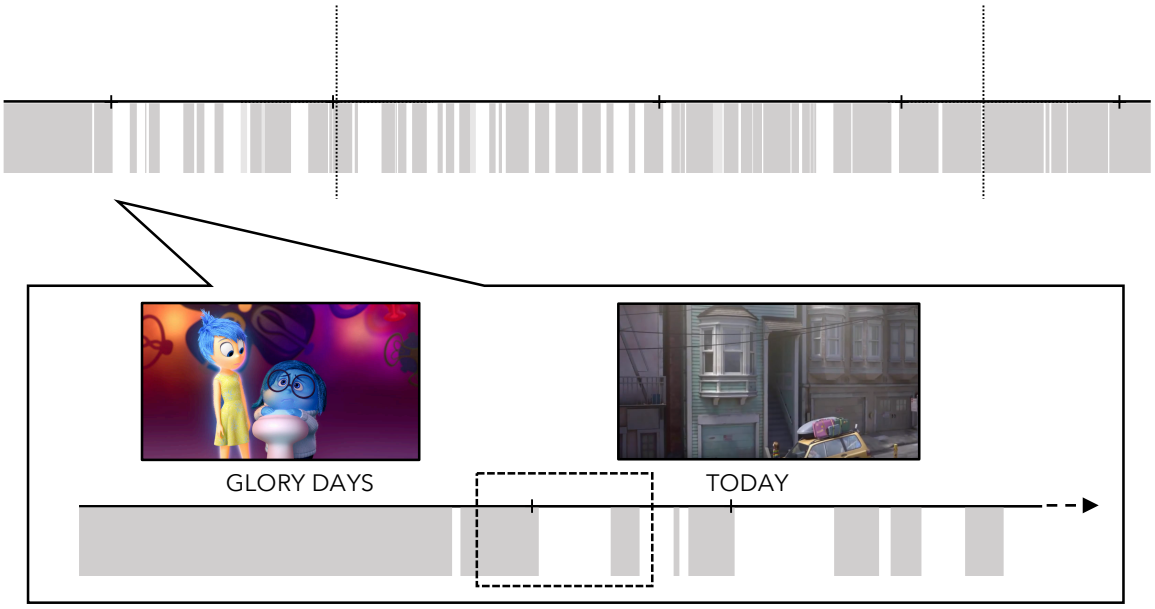


Figure 6.9 *Inside Out* Greyscale Gap

The Today sequence of *Ratatouille* is anomalous in both duration and music saturation; it lasts only 90 seconds and has 97.78% music saturation. However, the sequence shares the desaturated palette, despondent expression, and central framing typical of the visual style of the sequence and manages to journey the four requisite stages – Crestfallen, Getting On, the Opportunity, and the Decision – in quick succession. Giacchino marks the Opportunity (an illustrated Chef Gusteau comes to life to speak with Remy)[235] with an arpeggiated augmented chord chiming over the slow-moving legato strings that underscore the rest of the sequence. The illustrated Gusteau convinces Remy to move forward ('Now go up and look around!'). Remy pauses momentarily and music drops away; the first and only break in the score of this sequence. Music returns as he makes his Decision and dashes forth.

[235] The Chef Gusteau character periodically appears to Remy from an otherwise static 2D image or else in the form of a ghost. During the All is Lost scene, the chef confirms that he is a figment of Remy's imagination.

Each time Giacchino leaves mundane scenes unscored, he creates not only an association between musical silence and mundanity within that specific film, but he draws upon – and adds to – an accumulated (and accumulating) film music lexicon, which says that music accompanies the fantastical and the exciting whereas silence accompanies realism and tedium. The same sentiment can be applied to other spotting/scoring decisions as well as the use of colour, the stylisation of lines and shapes, camera framing, etc. A film's 'language' may draw from a long history of cinematic symbolism, but it must also be explained through the application of contrast and association within the individual film.

In *Cars 2*, contrast between the first two sequences is provided not with music and musical silence, but with contrasting musical styles. The action-packed Glory Days focusses on secret agent Finn McMissile. He is accompanied by *James Bond*-inspired minor-mode electric guitar riffs, raucous drum kit breaks, and supporting orchestra throughout. A short musical silence at the end of the sequence allows space for the transitioning joke: '…who can stop us now?' – cut to Today – 'Mater, Tow Mater! That's who.' (**Figure 6.10**). Once Mater has introduced himself, a folksy acoustic guitar and banjo ditty strikes up: a stark contrast to the cool, jazzy underscore of the previous sequence. The cut also takes viewers from night-time to daytime, from an oil rig in the middle of the sea to the dusty desert of Radiator Springs, from drama to calm, and from the polished, sparkling body of Finn McMissile to the rusty bumper of Mater. The inundation of contrasts not only demonstrates how different the two characters are, but also the difference between the sequences.[236] Though 6'33" of the 9'41" sequence (67.64%) is scored, there are large swathes of musical silence before and while the Opportunity is proposed (Lightning McQueen is offered a place in the World Grand Prix). Music returns as McQueen, and shortly after, Mater, accepts the challenge and the pair jet off to Tokyo.

[236] A similar example of this scoring technique can be found in *Star Wars: The Force Awakens* (J.J. Abrams, 2015), which underscores Kylo Ren's night-time raid with bold brass and heavy percussion before cutting to Rey, alone in the middle of the day, scored with delicate woodwind and piano motifs.

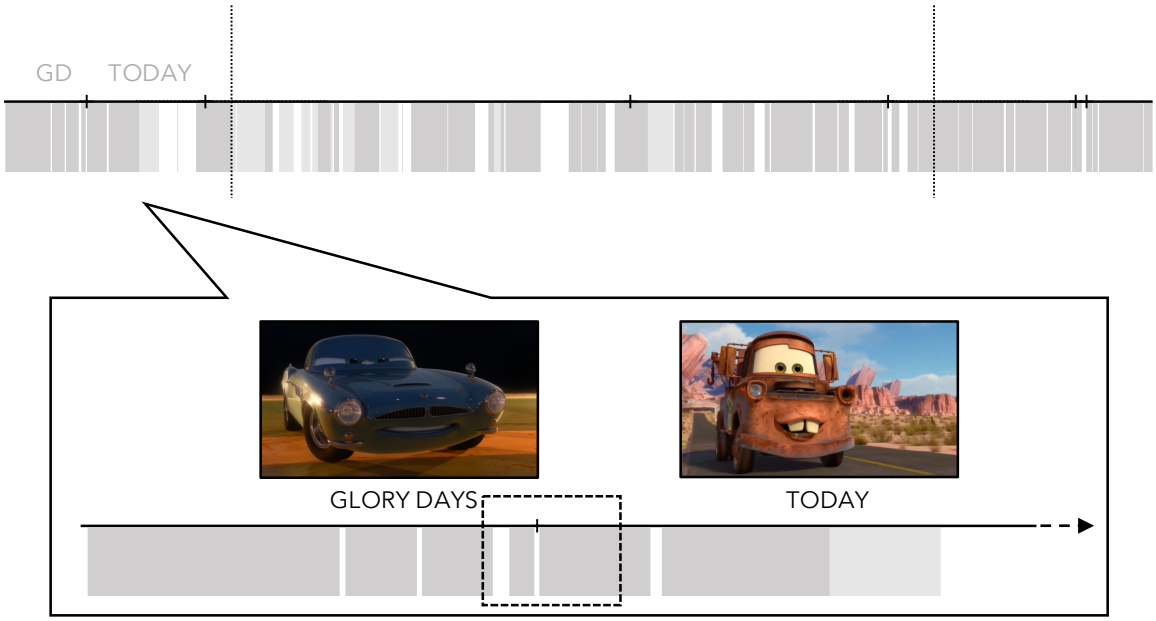


Figure 6.10 *Cars 2* Today Contrast

As Chapter 6.3.4 will reaffirm, these two opening sequences are the most diametrically opposed segments of the film – a statement that holds true at several visual and aural levels. A composer concerned with storytelling will likely echo this opposition musically, whether by the simple expedient of removing music altogether, by a sudden stylistic U-turn, or by some other musical method of contrast.

6.2.3 Crossing the Threshold

The purpose of the Crossing the Threshold sequence is to transport the character(s) from one location or situation to another: from Act 1 to Act 2. It provides a beat of narrative space between a tough decision and the beginning of an adventure. Five of the seven films in this study are fully saturated with music as the characters cross the threshold, due in part to the brevity of the sequence and in part to the general lack of dialogue. Music in these transitions provides continuity to visuals that may have to cover a lot of ground in a short space of time. As such, the Crossing of the Threshold is oftentimes presented as a short montage sequence.

Giacchino has several methods for scoring the transition. *Up* and *Ratatouille* feature beautiful orchestral scores during these remarkably lengthy sequences as, in both cases,

the character ascends literally and figuratively to a new location away from a life they resent. Neither scene has dialogue and there is little in the way of sound design, which allows the music to grow unhampered as the protagonist climbs. For *Up*, Giacchino initially wrote and recorded a bold, triumphant cue to accompany Carl's ascension into the sky. The slower-paced revision that made the final cut was shaped around the idea that this scene represents 'Carl's last dance with Ellie' before he heads off on his own adventure – an appropriate conclusion to the film's romantic opening act.[237]

Cars 2 employs a cover of an 80's song to suture the Crossing the Threshold travel montage.[238] While montage sequences are regularly accompanied by pop songs in Hollywood films, the only justification for this particular song in *Cars 2* appears to be the joke that it is a track originally written and performed by a band named The Cars. The song lyrics make only a tenuous hint at the power imbalance in Mater and McQueen's relationship that becomes a narrative tipping point later in the film: 'Well, you might think I'm crazy to hang around with you. Maybe you think I'm lucky to have something to do.' The use of a song to accompany a Crossing the Threshold montage can be found in other Pixar films. Randy Newman provides 'I Can't Let You Throw Yourself Away' for the Crossing montage in *Toy Story 4* (Josh Cooley, 2019) and James Bay's cover of Tom Petty's 'Kings Highway' accompanies the Crossing montage of *Cars 3* (Brian Fee, 2017).

Coco features a light mariachi cue as an awestruck Miguel crosses the Marigold petal bridge (a rather literal interpretation of 'crossing the threshold')[239] and *Incredibles 2* features a gentle big band jazz track as the Parr family travel to and become acquainted with their new home.

In *Inside Out*, the brief but frantic waterslide-like ride to Long-term Memory is scored with an incessant ostinato that matches the urgency and drama of the journey. Giacchino retains the orchestral palette and compositional techniques of typical Hollywood action scenes. The Crossing the Threshold sequence in *The Incredibles* is efficient as, rather than simply travel, Mr Incredible receives important information about his mission. For this reason, it is

[237] Giacchino screened the alternate score at the D23 Expo 2011. It can be viewed from 27'30" at https://www.youtube.com/watch?v=K5KLRCNcODY&feature=emb_logo (Accessed 25th July, 2020)
[238] The track is a cover by Weezer of The Cars' 1984 hit 'You Might Think'.
[239] The soundtrack title for this cue is 'Crossing the Marigold Bridge'.

scored like a typical dramatic scene, dovetailing carefully around the dialogue and sound design, and synchronising at times with onscreen movements.

The Crossing the Threshold score is not always governed by genre constraints in the way that other sections of the film might be. Its style and feel may be dictated by the ease with and method by which the protagonist travels into the unknown. Giacchino tends to assign lighter musical styles to decisive protagonists that cross leisurely in search of a better life as in *Coco* and *Incredibles 2*, swelling orchestral suites for impassioned ascents as in *Up* and *Ratatouille*, or frantic percussive cues when the protagonist is reluctant to move forward as in *Inside Out*.

6.2.4 Journey Begins

Cue placement in Act 2, like story beats, is less prescribed and more reactive to the individual film's plot. Musical silences tend to be reserved for mundane tasks, conversational dialogue, upsetting losses, and bad moods. While by no means regular, the alternation of music and musical silence generally parallels the ups and downs of fortune and the pacing of the edit.

As discussed in the previous chapter, at the end of the Journey Begins sequence, there is usually an intimate conversation between two characters. The protagonist is given revelatory information during this scene and there is – though not necessarily because of the revelation – a reversal of fortune for the protagonist that typically leads to their capture and imprisonment. In all seven of these films, the dialogue of the scene is underscored with an intimate chamber ensemble playing softly. In four of the seven, the cue cuts out at the midpoint edit, leaving the Journey Continues sequence initially unscored. In the cases of *Coco*, *Cars 2*, and *Ratatouille*, however, Giacchino cuts to a dramatically contrasting musical style – in each case, an upbeat jaunty number that dominates the sonic space (in the case of *Cars 2*, all sound design is removed from the sound track). Both strategies – cutting to a contrasting musical style or removing music altogether – provides a sort of reset, helping viewers to move from the intimacy of the previous scene and into the new sequence.

6.2.5 Journey Continues

A more musically-replete passage with 79.11% saturation rather than the Journey Begins' 65.30%, the Journey Continues sequence generally deploys music in the same way as its predecessor. As tension mounts and the pace of the film quickens, there are generally fewer mundane tasks and relaxed conversations in this part of the film, hence fewer musical silences. As observed in Chapter 4, the tone of the music will often change in Act 2B. With the high-energy fights, flights, and imprisonments intrinsic to this sequence, it is natural that the score will become more boisterous than before.

6.2.6 All is Lost Silence

The All is Lost sequence consists of three main parts: the Realisation, the Revelation, and the Escape.[240] In Chapter 4, we observed many of the Pixar short film composers leaving the All is Lost sequence entirely without music. The inference is that the scene will feel more forlorn because the non-diegetic score, though supposedly in a separate sonic world to the onscreen characters, somehow provides the protagonist with company (if only a perceived company) and so to remove it is to render them truly – sonically and visually – alone.[241] When music accompanies the Glory Days and other moments of good fortune so comprehensively, the composer impresses upon the audience a fundamental connection between music, momentum, and success. In doing so, he consequently connects the omission of music with ideas of stagnation and misfortune.[242]

In some of his feature film scores, Giacchino makes use of what we might call the 'All is Lost Silence'. He often leaves the first portion of the sequence (the Realisation) unscored, allowing the protagonist to acknowledge and accept their own dire situation in peace. He then scores through the Revelation, pauses, and scores the Escape. Examples can be found in the scores of *Up*, *Coco*, and *Cars 2*. In each of these films, music dies away at the end of the Journey Continues sequence and the protagonist is pictured alone. Carl looks around

[240] Definitions of these terms can be found in Chapter 3.

[241] The notion that music might act as a companion to the character raises questions of the metadiegetic nature of film music. See Winters (2010) for a discussion of the concepts and problematic terminologies of film music's diegetic properties.

[242] I use this pronoun because, in the case of Pixar films, every composer to date has been male.

at his empty living room (a metaphor for his life); Miguel, at the bottom of a cenote pit, sighs with his head bowed; and Mater says aloud, 'Oh, this… this is all my fault'.

In *Up*, after 28 seconds of silence (the Realisation: marked R in **Figure 6.11**), Carl begins to look through his late wife's photo album. Music joins. As he arrives at the last page, he sees a handwritten note from her telling him to go and have a new adventure – the Revelation. The music cue comes to a close as Carl realises what he must do. Carl goes to fetch Russell so that the pair can escape. An injection of urgency is added as a disgruntled Russell flies away to save the day on his own; dramatic underscore accompanies his flight. Carl attempts his own unsuccessful escape in silence. Then, upon realising he must empty the house for it to fly again, music returns with more authority and Carl determinedly escapes and sets off into Act 3. The FMO diagram segment below demonstrates the tripartite structure of the scene and score.

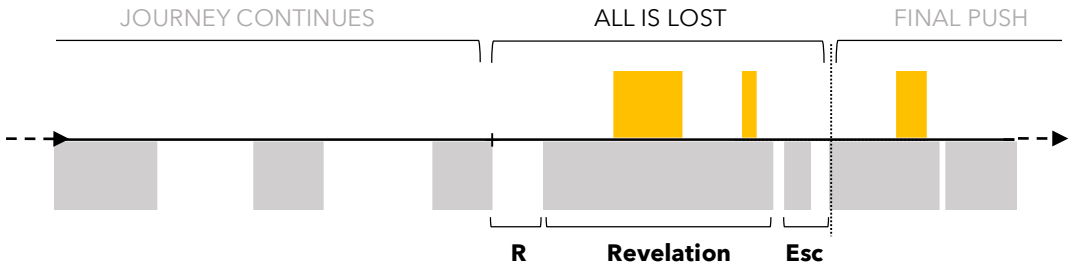


Figure 6.11 *Up* All is Lost Silence

Coco is scored similarly. Miguel's Realisation is vocalised in an outcry to Héctor: 'You were right! I should have gone back to my family […] I told them I didn't care.' Coincidentally, the musically silent scene also lasts for 28 seconds. Music returns as Héctor explains his regrets and his backstory, part of which takes the form of a sepia-hued memory of him performing 'Remember Me' to his daughter (note the coordination of colour palette and diegetic level of the music). Miguel quickly realises that Héctor is his great-great-grandfather and the pair, accompanied by the principal theme, find a new, deeper reason to escape. The FMO diagram segment in **Figure 6.12** demonstrates the tripartite structure of the scene and score.

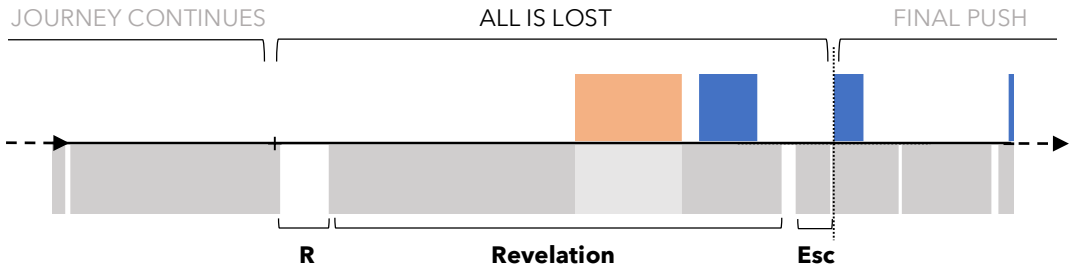


Figure 6.12 *Coco* All is Lost Silence

Cars 2 is slightly more convoluted because it involves a cutaway scene (as depicted in **Figure 6.13**). Initially, 18 seconds of silence make way for Mater's 'This is all my fault!' Realisation. As he expands upon his failures, a string section softly supports his continued reasoning. Two goons arrive and reveal that Lightning McQueen is still alive, giving Mater his first glimpse of hope. The scene cuts to a race track and the music ceases. McQueen frets and then starts the race to a fanfare accompaniment. The camera pans back up to the clock tower in which Mater is bound. The goons reveal the 'back-up plan' that there is a bomb in McQueen's pit and Mater's frustration and determination to avenge his friend reveals a way to escape his bindings. He breaks free and, equipped with the requisite knowledge to save the day, dashes off into Act 3.

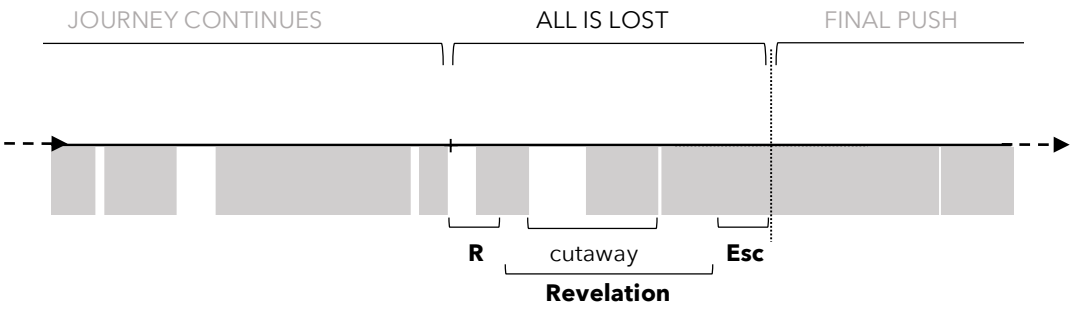


Figure 6.13 *Cars 2* All is Lost Silence

While there is not an All is Lost Silence in *Incredibles 2*, Giacchino gives the impression of one. A lively cue falls away suddenly – mirroring the car's abrupt stop – leaving a low, sustained, single string note. The three Parr children sit silently (but for the low drone), looking defeated. Violet lets out a sigh, signalling a recognition of the magnitude of their loss. A melodic cello line joins the low drone as Violet lists the challenges that lay ahead. If

one were to consider the drone as mere ambient sound, the Realisation segment might appear to have the same structure to that of *Cars 2*: silent at first, then a string underscore joins as problems are vocalised. A small break occurs in the score as Jack-Jack reminds them that he has unknown powers (a fairly unconvincing Revelation) and music returns as the trio buckle up and head into Act 3, determined they can save the day.

Much like the four sections of the Glory Days or those of the Today sequence, Giacchino's discrete music units demonstrate his acute awareness of the tripartite form of an All is Lost scene.

6.2.7 Final Push Ostinato

The Final Push sequence makes up the majority of Act 3 and is the most heavily saturated of the major non-transitional passages of a film.[243] Each of the seven feature films has a Final Push with over 90% music saturation. There are few extended musical silences and pauses in the score rarely last for more than ten seconds; musical silences generally function practically, making way only for punchlines, sound effects, or a significant line of dialogue, and, as we have seen, this is often where the thematic material returns in abundance. A compositional technique that also features heavily in Giacchino's Final Push scores is the ostinato.

In five of the seven Pixar–Giacchino features, the composer marks the beginning of the sequence and act by introducing a previously unheard ostinato figure at the precise moment the protagonist decisively and determinedly dashes off to save the day. In some instances, this ostinato figure continues long into the third act, modulating periodically to increase tension. In the cases of *Inside Out* and *Incredibles 2*, which capitalise on the influx of new, repeatable material, one could argue that, because of the sheer amount of repetition, the respective ostinatos come to characterise the entire sequence. **Figures 6.14**–**6.18** align the Film Music Organisation diagrams of five of the films to demonstrate how

[243] Acts 1 and 2 each divide into two large-scale parts with shorter transitional sequences at the end whereas Act 3 generally consists of one large and one short passage.

similarly the relative locations of these sequences are – each begins roughly 83% into each film.[244]

I call this spotting/scoring technique the Final Push Ostinato (FPO). As well as its coordination with the beginning of Act 3, the ostinato is indicative of the focus and determination required of the protagonist at this crucial narrative moment. During the DVD commentary, Pete Docter shares Giacchino's reasoning for the use of this ostinato figure at this moment in *Inside Out*:

> It's a repeating phrase which drives this whole sequence. And [Giacchino] was saying, 'You know when you're exercising or really focused, […] you kind of get this one piece of music caught in your head and it loops and it loops.'[245]

The musical figures tend to be up-tempo, staccato lines that begin on beat one; they are without an anacrusis, making the starting point of the act and figure bold, clear, and definitive. Those in the following examples appear in a minor mode and are generally constrained to the first five degrees of the scale. These features are typical of Giacchino's FPO, but are not definitive. Variations on this technique can be found outside of this corpus.

Once introduced, *Incredibles 2*'s FPO saturates a large amount of the final act. **Figure 6.14** displays the ostinato in relation to the densely-populated cue distribution of the Final Push sequence to convey how much of Act 3's musical material this figure accounts for. The rhythmic ostinato, notated in **Example 6.1**, is initially attached to the Parr children as they exit the film's All is Lost moment, and later accompanies all action scenes regardless of onscreen characters. Having recognised the impossibility of their situation, the children are reminded by Jack-Jack of their extraordinary abilities and, buoyed, they smile at each other and set off in the direction of their parents with renewed determination. The FPO begins the moment Dash excitedly plugs in his seatbelt, visually and musically indicating to the audience that decisive action is taking place. The figure can then be heard in various guises, instrumental timbres, and keys throughout the final act to signify a sustained determination.

[244] 80.44% into *Incredibles 2*; 82.79% into *Inside Out*; 86.79% into *Up*; 85.11% into *The Incredibles*; and 85.45% into *Ratatouille*.
[245] Pete Docter on the Director's Commentary on Pixar's *Inside Out* DVD.

Ex. 6.1 *Incredibles 2* Final Push Ostinato transcription

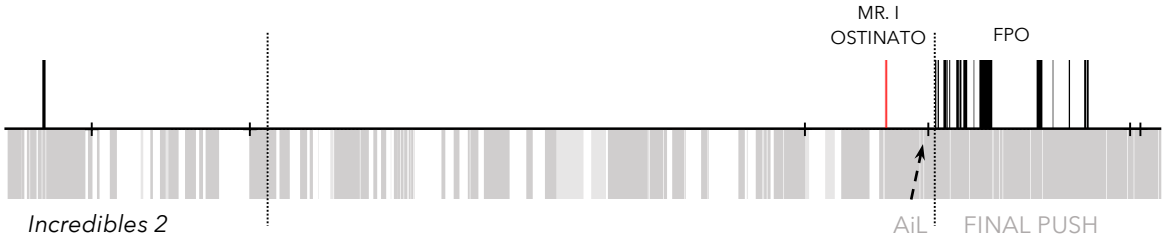


Figure 6.14 *Incredibles 2* Final Push Ostinato distribution

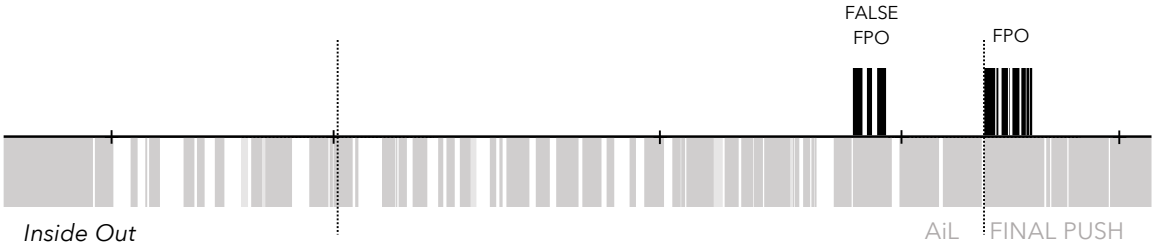


Figure 6.15 *Inside Out* Final Push Ostinato distribution

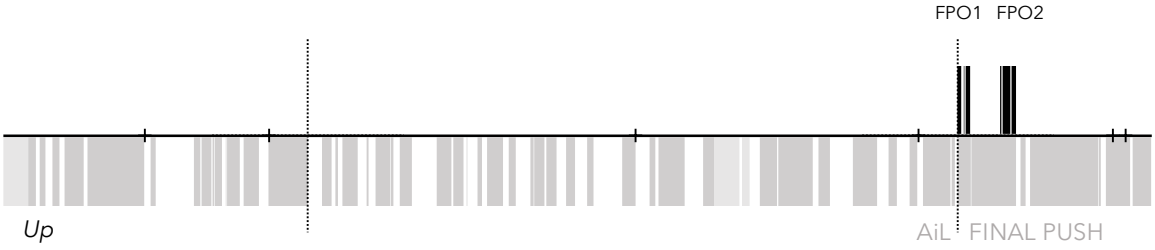


Figure 6.16 *Up* Final Push Ostinato distribution

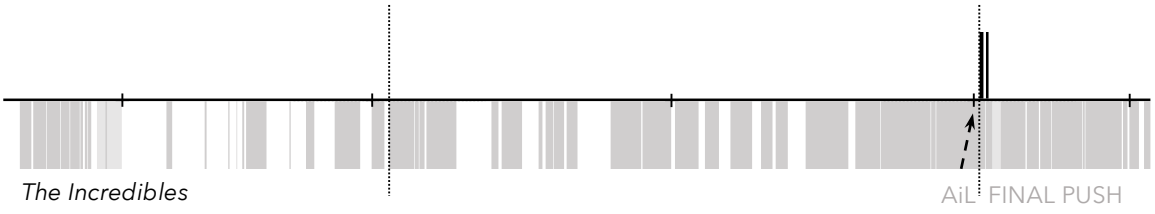


Figure 6.17 *The Incredibles* Final Push Ostinato distribution

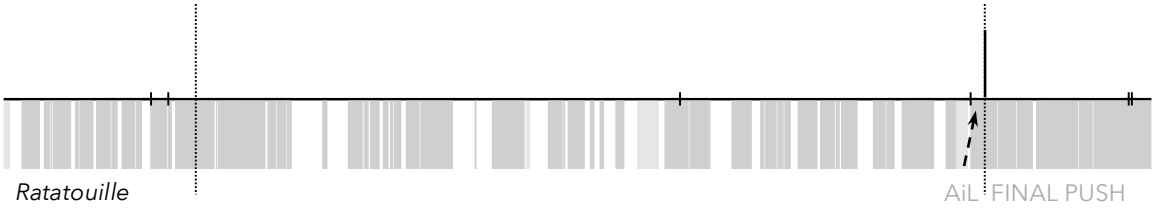
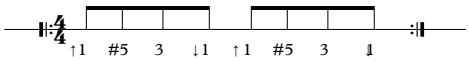


Figure 6.18 *Ratatouille* Final Push Ostinato distribution

Another 'determined ostinato' of sorts appears briefly as Mr Incredible leaves the house to help his wife: a scene that occurs shortly before the All is Lost sequence (marked 'Mr. I Ostinato' and coloured red in **Figure 6.14**). Despite fulfilling many of the same dramatic requirements, the rhythmically uniform repeating figure – the descending augmented arpeggio notated in **Example 6.2** – serves not as a marker for the Final Push, but merely as a signifier for Mr Incredible's focussed determination as he dashes off to rescue his wife. The introduction of the previously unheard ostinato figure coupled with the sudden determination with which Mr Incredible leaves the house may disorient audiences, leading them to (at least unconsciously) believe that the story has bypassed an All is Lost sequence and is prematurely entering Act 3.

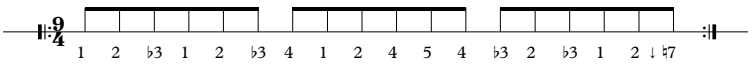


Ex. 6.2 *Incredibles 2* Mr Incredible ostinato transcription

The role of protagonist moves between different members of the superhero family. Though this film is largely a film about the mother (Helen Parr aka Mrs Incredible aka Elastigirl), both parents experience a midpoint reversal of fortune, Bob becomes the focus of the unusually brief Journey Continues, and it falls to the children to suffer the All is Lost moment and find the determination to break into Act 3, which gradually becomes a story about the family unit as a whole. The shifting protagonist role as well as misleading musical cues may make this a more difficult film to navigate than other, clearer narratives. However, retrospective appreciation of the whole clarifies how each of these minor vicissitudes function within the greater story.

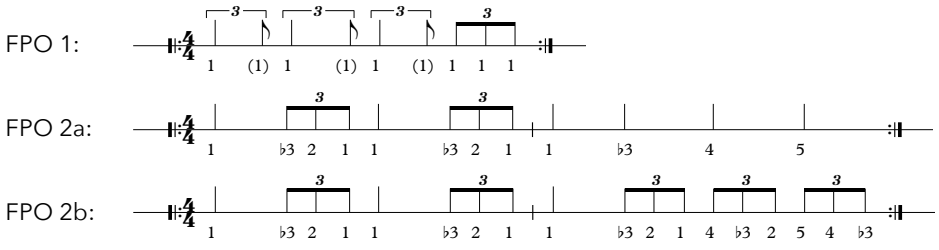
In *Inside Out*, Giacchino also plants a musical 'red herring'. This time, he delivers the ostinato – that will later be used as the actual FPO – ahead of the All is Lost sequence, attaching it to the actions of the only protagonist of the film. As Joy determinedly begins what she believes is a last-ditch effort towards the climax of the film (i.e., what is to her a 'final push' towards her goal), the ostinato begins and repeats for a considerable time. It is interrupted when Joy is sent falling down into Memory Dump where she stays for the All is Lost scene. Again, those familiar with Giacchino's ostinato-and-plot event coupling may be misled here into believing that Joy is further on in her narrative journey than she actually is,

making her failure and fall all the more dramatic and unexpected. Like Mr Incredible's ostinato, the 'premature' use of the repeating figure creates what we might call a False Final Push Ostinato. The misleading feature can be located on **Figure 6.15**. When Joy sets off again, having escaped the All is Lost sequence more determined than ever, the figure returns, functioning to indicate the beginning of Act 3 at the moment of renewed action. The FPO accompanies Joy almost ceaselessly hereafter until her eventual return to Headquarters. While the *Incredibles 2* FPO priorities rhythmic interest over melodic, the *Inside Out* FPO transcribed in **Example 6.3** maintains a uniformed rhythm of quavers with a disorienting patterning of notes from the harmonic minor scale that rises and falls in unexpected places. The 9/4 time signature increases the sensation of irregularity created by the asymmetric figure. Despite the constant repetition, this line does not become predictable or boring as it journeys through a number of modulations and orchestrations throughout the act.



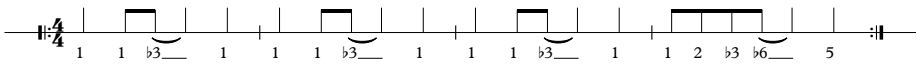
Ex. 6.3 *Inside Out* Final Push Ostinato transcription

There are two related FPO figures in *Up*. The first, a one-note, one-bar rhythm is deployed at the beginning of the Final Push sequence as Carl, renewed by Ellie's message, clears his floating house of furniture and flies off to save Russell, Kevin, and Dug (**Figure 6.16** and **Example 6.4**; FPO 1). It is then expanded, keeping the same rhythmic pattern, to include the first five notes of a minor scale. This new figure (FPO 2a) marks Carl's renewed determination upon hearing Russell's cries for help. This ostinato, as well as its variation (FPO 2b), continues as Carl breaks his way into Muntz's zeppelin for the final battle.



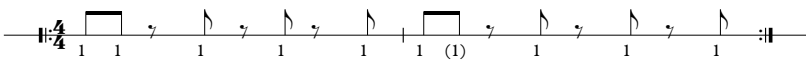
Ex. 6.4 *Up* Final Push Ostinato transcriptions

In *The Incredibles*, as the Parr family break out of their electrified cuffs and run through the compound in search of an aircraft to return them to the city, a new repeating riff supports one of the film's principal themes. The FPO (below) supports only two short scenes as the family escape the compound and return to the mainland.



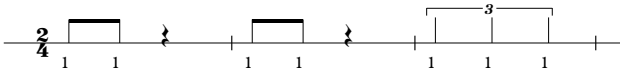
Ex. 6.5 *The Incredibles* Final Push Ostinato transcription

The FPO of *Ratatouille* resembles the one in *Up*. It is a one-note rhythmic figure. Repeated only a handful of times as Remy dashes off towards the restaurant after being broken out of his All is Lost cage, the ostinato lasts a total of 13 seconds. While the ostinato is not repeated frequently enough to be considered emblematic of the final act, it functions as a brief musical marker to orient the viewer in the story and express the rat's renewed determination and energy for the final showdown.



Ex. 6.6 *Ratatouille* Final Push Ostinato transcription

Cars 2 does not have a repeating figure to begin the Final Push sequence, per se. Instead, the one-off, one-note rhythmic figure transcribed in **Example 6.7** marks the beginning of the sequence as Mater races off to save the day. It sonically indicates to audiences that this is the beginning of Act 3 and that Mater is filled with renewed determined.



Ex. 6.7 *Cars 2* Final Push Ostinato transcription

Rather than an ostinato or a riff, Giacchino marks *Coco*'s Final Push sequence – Miguel and Héctor flying away from their All is Lost pit – with an uplifting and powerful rendition of the film's primary theme. The theme in this moments implies a kind of pre-emptive win; it celebrates the escape rather than expressing determination. It is likely that Giacchino uses the theme here to reference the family unit as they move into Act 3 together. Miguel is not alone in his determined pursuit as many of the protagonists are at this stage.

The Final Push Ostinato is a spotting/scoring technique that can be heard in Giacchino scores outside of his Pixar collaborations. Though he does not always include one, an FPO appears in many of his scores, including those of *Star Trek* (J.J. Abrams, 2009), *John Carter* (Andrew Stanton, 2012), *Doctor Strange* (Scott Derrickson, 2016), and *Rogue One: A Star Wars Story* (Gareth Edwards, 2016). The technique is not exclusive to the work of Giacchino and can be found in the scores of many Pixar films scored by other composers. Randy Newman places a Final Push Ostinato at the beginning of Act 3 in his scores for *Toy Story*, *A Bug's Life* (John Lasseter, 1998), *Toy Story 2* (John Lasseter, 1999), *Cars* (John Lasseter, 2006), and *Cars 3* (Brian Fee, 2017); Mychael and Jeff Danna showcase two FPOs in *The Good Dinosaur* (Peter Sohn, 2015) – one at the beginning of the sequence and a simplified version that continues thereafter; Thomas Newman employs the technique in his scores for *WALL•E* (Andrew Stanton, 2008), *Finding Nemo* (Andrew Stanton, 2003), and *Finding Dory* (Andrew Stanton, 2016); and Patrick Doyle includes a rousing staccato ostinato as Merida breaks free and sets forth in *Brave* (Mark Andrews and Brenda Chapman, 2012).

Evidently, the Final Push Ostinato functions as an effective shorthand for the beginning of Act 3 outside of the limited Pixar–Giacchino corpus upon which this chapter concentrates. The ostinato's success relies on the contrast between the soft, typically legato, sedate musical characteristics of the preceding All is Lost sequence and its own bold, staccato, up-tempo qualities. A confident FPO not only reflects the new-found assertion of the protagonist in this moment, but indicates that the story has entered its final chapter, navigating audiences promptly away from the poignancy of the All is Lost scene and into the adventure of the Final Push.

6.2.8 Aftermath

As demonstrated in the previous chapter, the concluding Aftermaths are passages in which thematic material customarily resides. Naturally, they are brief passages, tying up loose ends and providing audiences with a glimpse into how the events of the story have allowed the protagonists to prosper upon their return home. Of the seven feature films in this corpus, three have Aftermaths fully sated with music. The rest include only negligible pauses that function simply to create sonic space for punchlines and character entrances.

6.3 Film Music Saturation

Throughout this chapter, I have dispersed statistics about the music saturation of each sequence, indicating the percentage of the passage that contains music. By qualifying acts and sequences in terms of the amount of music found in each, it is possible to map out a film's saturation profile, i.e., the shape of the film based on the ratio of music to musical silence in each section.

Though many may lament the alleged overuse of music in modern Hollywood blockbuster films, there is, as far as I am aware, no published empirical data to attest the change in practice over the years. The following approach may be adopted to pursue the aforementioned line of enquiry. It investigates the statistics on music saturation at four levels: 1) the entire film; 2) a three-act breakdown; 3) a four-part breakdown; and 4) an eight-sequence breakdown. As the level at which music saturation is assessed becomes more refined, the outline of the film and score's saturation profile becomes clearer.

6.3.1 Entire Film Saturation

Table 6.1 shows that the Pixar-Giacchino films employ a total of roughly one hour's worth of non-diegetic underscore in a film that lasts, on average, an hour and a half.[246]

Film	Non-diegetic	Diegetic	Total Music	Total Film	Saturation %
The Incredibles	1:07:26	0:02:54	1:10:20	1:47:06	65.67
Ratatouille	1:12:50	0:03:46	1:16:36	1:42:31	74.72
Up	0:54:36	0:04:29	0:59:05	1:28:18	66.91
Inside Out	1:02:15	0:02:09	1:04:24	1:25:33	75.28
Cars 2	1:05:26	0:11:54	1:17:20	1:33:34	82.65
Incredibles 2	1:06:47	0:06:41	1:13:28	1:46:40	68.88
Coco	0:58:27	0:19:31	1:17:58	1:31:27	85.26
AVERAGE	**1:03:58**	**0:07:21**	**1:11:19**	**1:36:27**	**74.20**

Table 6.1 Quantities of music in the seven Pixar–Giacchino films

Naturally, *Coco*, with its story centred around music performance, has a greater portion of diegetic music than the other films. Diegetic cues are generally foregrounded and functional within this particular story. Unexpectedly, *Cars 2* has almost twelve additional minutes of diegetic underscore. This duration can be largely attributed to background music in various venues (namely, the Wheel Well Motel bar and the World Grand Prix promotional event). Diegetic music in these situations typically functions more like sound design or Muzak, offering little in terms of a narrating voice, but merely providing a degree of realism to the locations.[247] Though it is often difficult to separate functional and non-functional diegetic music, the value imbalance between the two must be a consideration when interpreting these figures. Discounting *Cars 2* and *Coco*, the two outliers, the average Pixar-Giacchino feature contains 70.29% music saturation, with a range of 9.61% between the most and least saturated.[248] The relatively small range of music saturation indicates a

[246] The exact averages are 63'58" of non-diegetic underscore in a 96'27" film.

[247] Muzak was a brand of background music piped into retail outlets, hotel lobbies, and similar environments. The word is now a catch-all term for any background music.

[248] Including all seven films gives an average of 74.20% with a range of 19.56%.

uniformity between the films that suggests this quantity of music may be a trope of Pixar content or possibly family films more generally. A film like *Cast Away*, for example, with a music saturation of only 14.83%, would seem incongruous and inconsistent within this body of work. The saturation data of entire films is, at best, a vague and arguably unreliable indicator of the type of film or the target audience and it does not provide any clues as to the shape of the story.

6.3.2 Three-act Saturation

Table 6.2 presents the music saturation data for each of the Pixar–Giacchino features. They are ordered chronologically by release date with the figures for a hypothetical average of the seven films provided below. Conditional formatting colours the cells to show clearly the acts with the greatest music saturation (represented in red) and those that are least saturated (represented in cream). Though it does not reveal the subtleties of the data, this colour-coding method highlights the ranking system for each individual film in a more obvious way than the later graphs.

The data reveals that the amount of music heard in each act, for the most part, increases incrementally throughout the film. Two films are anomalies to the progressive upward trend: *Up* and *Ratatouille*, each of which have more music in Act 1 than Act 2. A reason for this may be that both films have inordinately lengthy Glory Days (making up 12.29% and 12.89% of the total films respectively) and Crossing the Threshold sequences (3.42% and 2.43%) – each of which are typically sated with music – as well as relatively short Today sequences.[249] A trend that unites all seven films is the fact that Act 3 is consistently the most musically dense with over 90% saturation in every film.

[249] Extremely short in the case of *Ratatouille*.

	Act 1 %	Act 2 %	Act 3 %
The Incredibles	43.64	72.94	90.28
Ratatouille	79.48	68.95	96.63
Up	71.96	57.59	90.18
Inside Out	68.50	73.26	96.65
Cars 2	80.11	80.15	93.35
Incredibles 2	59.13	63.26	96.73
Coco	82.90	83.09	93.24
AVERAGE	**69.39**	**71.32**	**93.87**

Table 6.2 Three-act saturation in the Pixar–Giacchino films

Figure 6.19 offers graphic representations of these saturation figures. The graphs highlight not only the difference between the amount of music in each act, but also the differences in proportional duration of the acts across films. Though the graphs for *Cars 2* and *Coco* appear to show exactly the same music saturation in acts 1 and 2, there are slight increases (each less than 0.2%) – a realisation easily made with the colour-coded table. The differences between the Act 1 and Act 2 figures are so minute that the fidelity of the graphs, reduced to be aligned on the pages of this thesis, is unable to show them. On the whole, there is an upward trend, with music being deployed more liberally as the film progresses.[250]

An interesting observation is that, with each progressive act, the range of music saturation decreases. Act 1 saturations vary between 43.64% (*The Incredibles*) and 82.90% (*Coco*): a range of 39.26%. The music saturation of Act 2 ranges from 57.59% (*Up*) to 83.09% (*Coco*); a range of 26.31%. The music saturation of Act 3 has the smallest range, from 90.18% (*Up*) to 96.73% (*Incredibles 2*): a range of only 6.55%. This trend stays true even if the data of *Coco* and *Cars 2*, the two obvious outliers with disproportionately more music in the first two acts, is disregarded.[251] The trend implies that the volume of music deployed

[250] *Liberally* meaning 'in larger quantities' rather than 'with less precision'.
[251] The ranges become 35.84%, 15.67%, and 6.55% respectively.

becomes more predictable as the film progresses, i.e., one should expect with increasing certainty a denser deployment of music cues with each passing act.

The two *Incredibles* films show by far the most dynamic uses of music saturation. Bird and Giacchino deploy cues sparingly in the opening act (43.64% in *The Incredibles* and 59.13% in *Incredibles 2*) and copiously in the final act (90.28% and 96.73%): a range of 46.64% and 37.60% respectively. This data corroborates director Brad Bird's remark that he tries hard 'not to have one consistent level of sound, but to have, you know, lots of sound and then moments where your ears really rest and also have to "look" for sound a little bit' and that he is looking for 'a nice range right the way through the film.'[252]

[252] 'Director Brad Bird - The usage and importance of Music and Sound FX' at http://soundworkscollection.com/soundlab/director-brad-bird-the-usage-and-importance-of-music-and-sound-fx (Accessed 12th December, 2016)

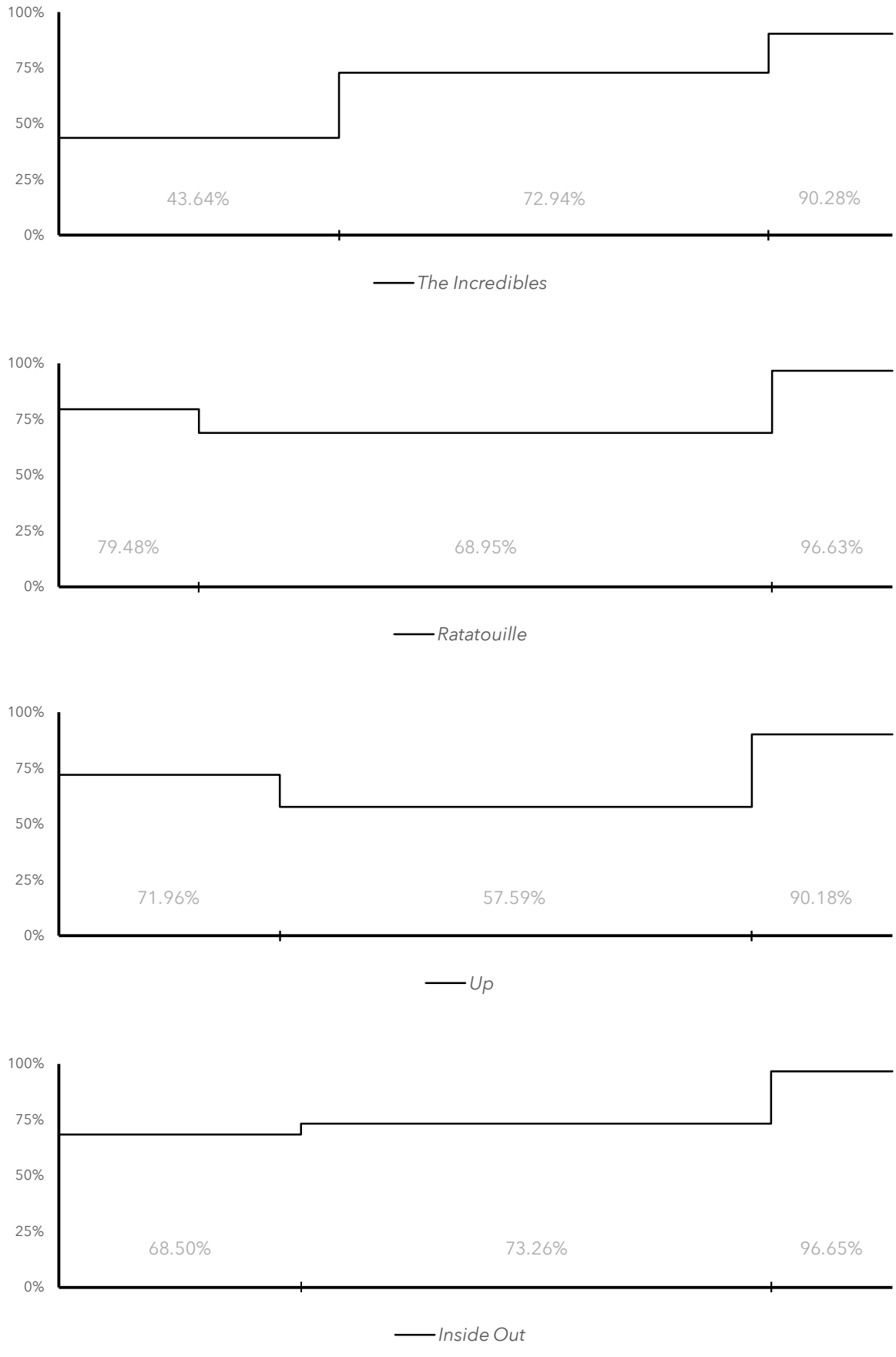


Figure 6.19 Three-act saturation profiles

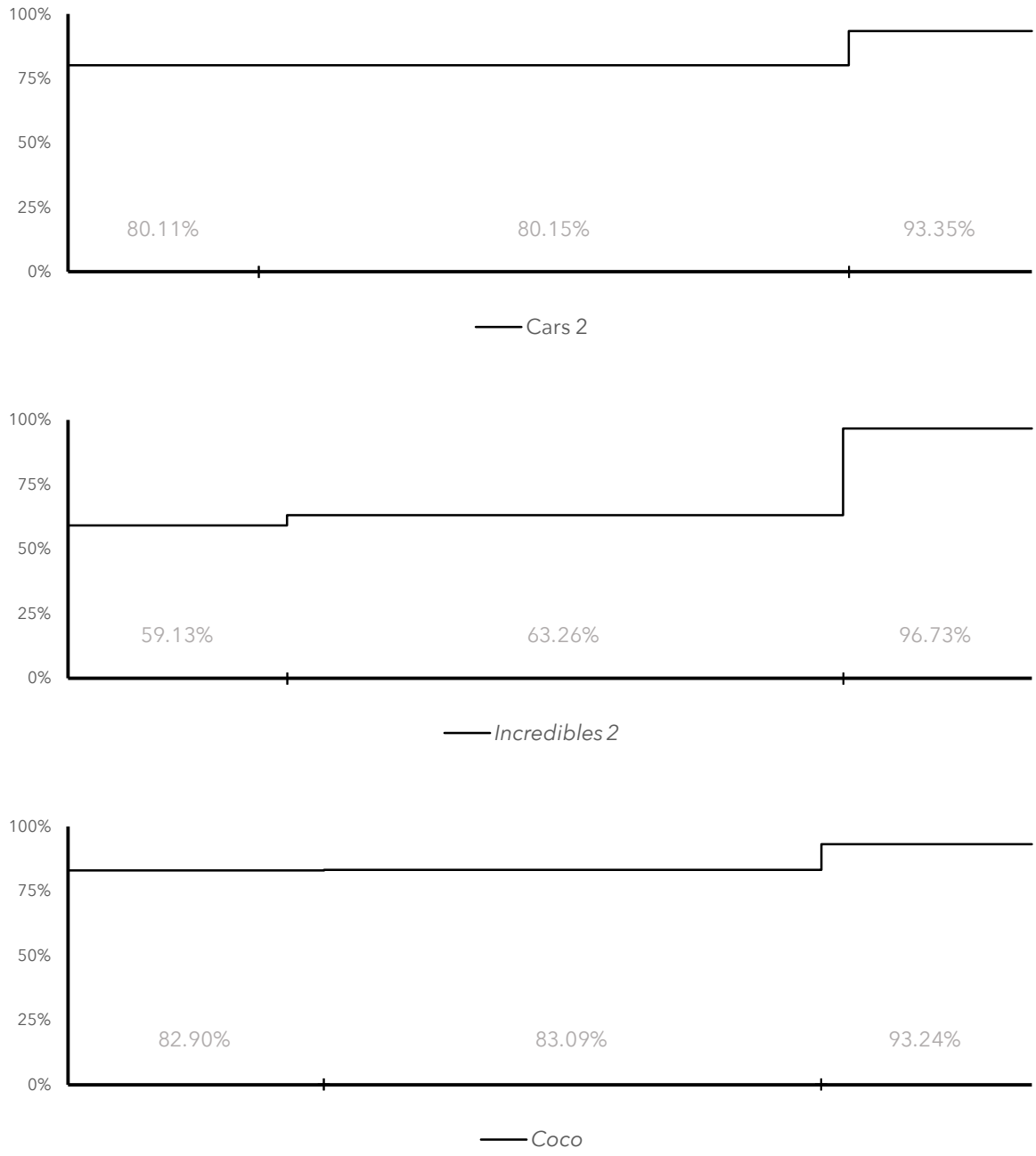


Figure 6.19 *cont*. Three-act saturation profiles

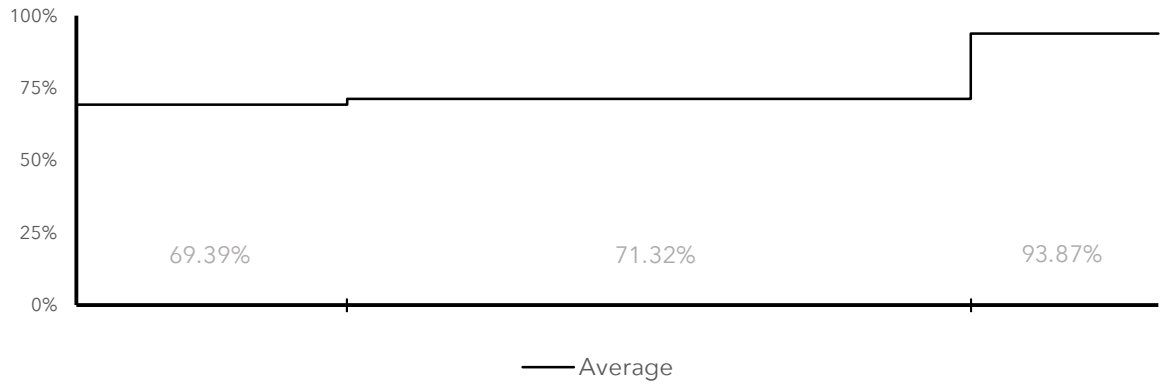


Figure 6.20 Average three-act saturation profile

6.3.3 Four-act Saturation

Dividing Act 2 into two parts provides a more accurate impression of the profile of music saturation in these films. **Table 6.3** provides the data for the four-act distribution. The conditional formatting here and hereafter grades the values from light for the lowest music saturation of the individual film to dark for the greatest saturation. **Figure 6.21** presents the data as graphs that show the saturation profiles for each film. Five of the seven films exhibit the same shape, with a reduction in the amount of music used between Act 1 and Act 2A followed by incremental saturation of each successive part thereafter. Conversely, the two *Incredibles* films build incrementally throughout, with a greater percentage of music used in each successive part.

	Act 1 %	Act 2A %	Act 2B %	Act 3 %
The Incredibles	43.64	64.60	80.59	90.28
Ratatouille	79.48	65.72	74.07	96.63
Up	71.96	49.77	65.52	90.18
Inside Out	68.50	62.90	83.54	96.65
Cars 2	80.11	77.54	83.58	93.35
Incredibles 2	59.13	60.51	74.55	96.73
Coco	82.90	76.09	94.66	93.24
AVERAGE	**69.39**	**65.30**	**79.50**	**93.87**

Table 6.3 Four-act saturation in the Pixar–Giacchino films

A four-act breakdown reveals that *Coco* actually contains more music in Act 2B than in Act 3. This anomaly might have been explained away by the vast amounts of diegetic music performed throughout the film, but there are only two significant diegetic cues in Act 2B, both of which make up only a fraction of the total diegetic cues used elsewhere. The figures may instead be attributed to a more continuous Act 2B score.

The average saturation profile is shown in **Figure 6.22**. Act 1, as before, averages 69.39% saturation; this figure drops slightly to 65.30% in Act 2A; raises to 79.50% in Act 2B; and once more into Act 3, as before, with 93.87%.[253] A four-part breakdown of these films provides further evidence of a bipartite Act 2. Acts 2A and 2B demonstrate considerable differences in the sheer amount of music deployed. If it is fair to assume that film music saturation is not a conscious consideration of filmmakers or composers, this data proves that each half of Act 2 is, unconsciously, treated differently with regards to music placement, confirming the need for four-act interpretations of film music.

[253] Again, the contour remains even without the data of *Cars 2* and *Coco*.

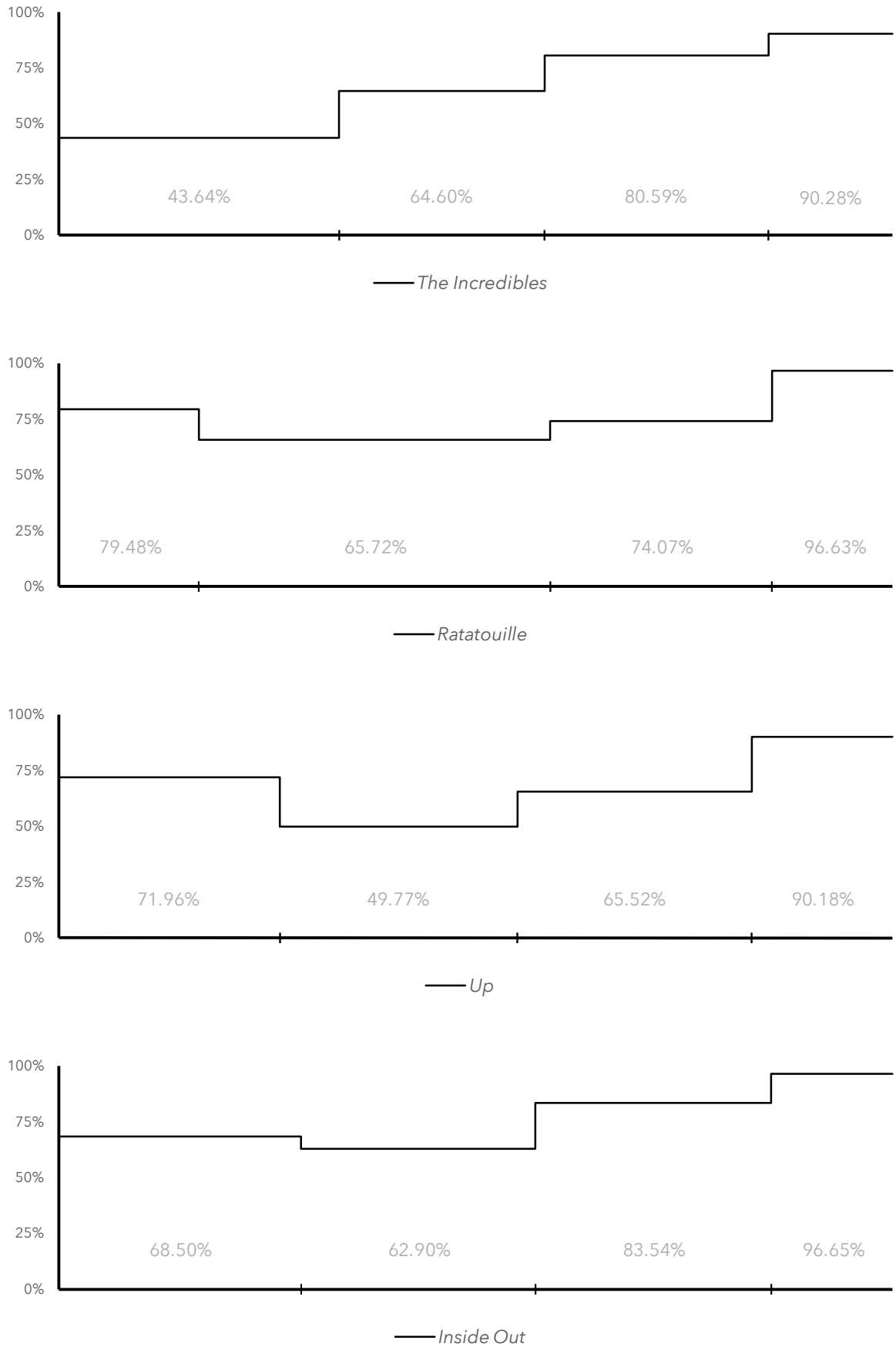


Figure 6.21 Four-act saturation profiles

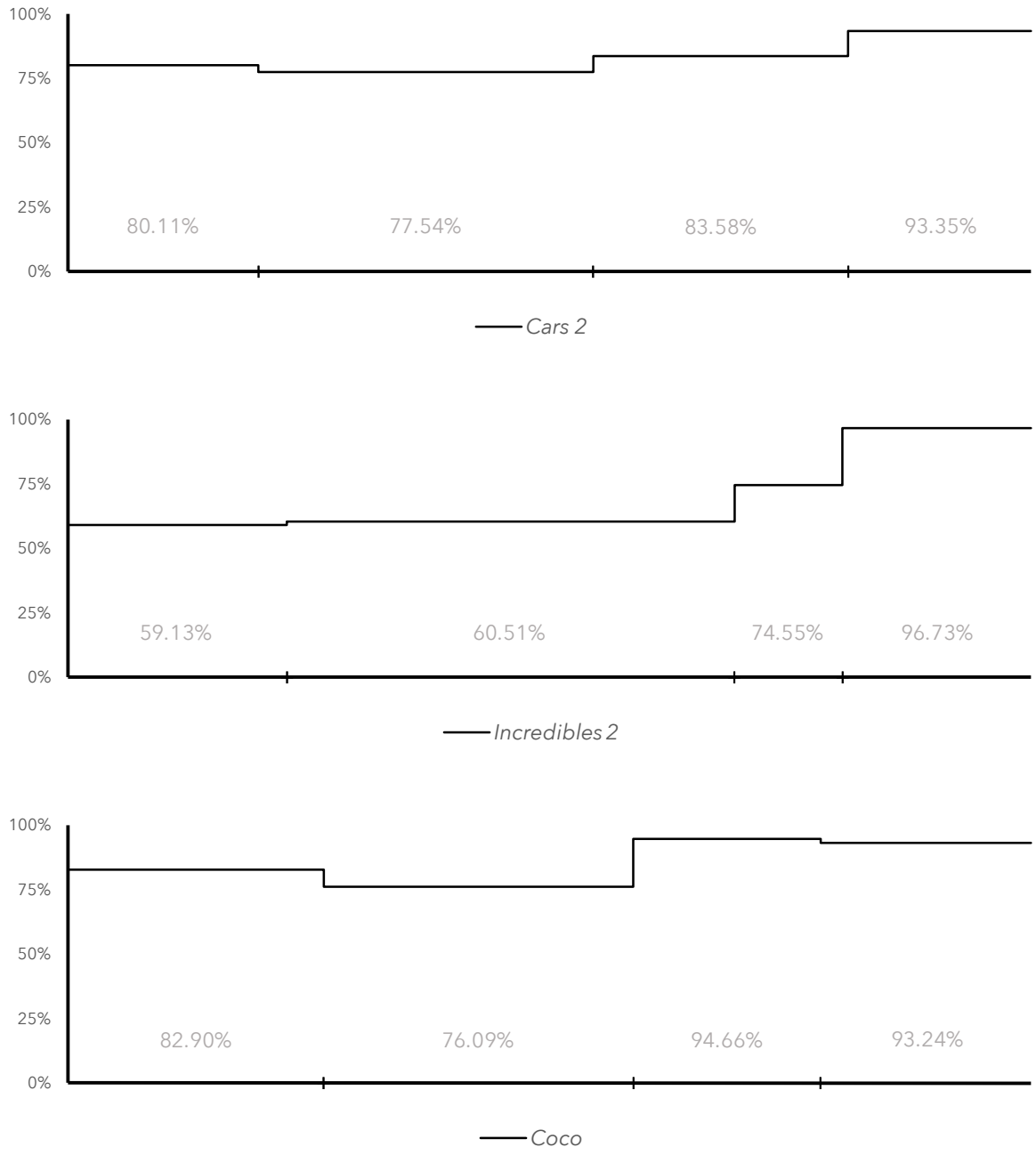


Figure 6.21 *cont.* Four-act saturation profiles

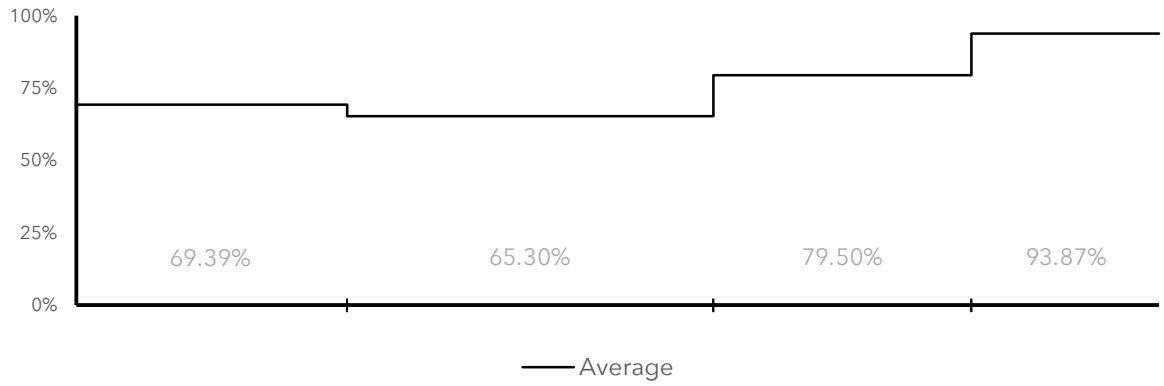


Figure 6.22 Average four-act saturation profile

6.3.4 Sequence Saturation

Breaking the film into eight sequences provides further insight into how music saturation shapes a film. **Table 6.4** provides this data and **Figure 6.23** depicts the individual films' contours.

	GD %	T %	CtT %	JB %	JC %	AiL %	FP %	A %
The Incredibles	75.38	26.60	73.12	64.60	80.22	100	92.51	74.14
Ratatouille	75.54	97.78	89.33	65.72	72.9	97.44	96.11	100
Up	85.71	47.47	100	49.77	63.66	79.01	89.65	92.27
Inside Out	98.14	53.53	100	62.90	80.52	92.41	95.87	100
Cars 2	91.79	67.64	100	77.54	85.41	73.33	94.81	90.64
Incredibles 2	87.37	38.90	100	60.51	73.75	91.67	96.85	95.93
Coco	93.53	77.64	100	76.09	97.32	88.44	92.18	100
AVERAGE	**86.78**	**58.51**	**94.64**	**65.30**	**79.11**	**88.90**	**94.00**	**93.28**

Table 6.4 Sequence saturation in the Pixar–Giacchino films

As expected, the Glory Days sequences contain considerably more music than the Today. The exception to this observation is the anomalous *Ratatouille* which, due to its atypical Act 1 form, has a 90-second Today sequence that is scored almost wall-to-wall. Because of this, we must accept its opening act an outlier at several levels and not factor it into speculative conclusions. The vast difference between music saturation in the two opening sequences

raises questions about the validity of the previous Act 1 readings, which misleadingly offers a muted average to sequences that are contrasting and undeniably discrete. Unsurprisingly perhaps, the Brad Bird directed *Incredibles* films have the greatest dynamic difference between the Glory Days and Today with 48.78% (*The Incredibles*) and 48.47% (*Incredibles 2*) differences, followed closely by Pete Docter directed *Inside Out* and *Up* with 44.61% and 38.24% respectively. The eight-sequence film music saturation graphs for Docter's films exhibit such remarkably similar profiles that one might assume it is by design.

The musically sated Crossing the Threshold sequences would not have influenced the previous Act 1 figures too considerably, brief as they are within the act. However, from a music saturation perspective, it is clear that this sequence, transitional though it is, is necessarily considered a sequence of its own rather than being lumped together with the Today passage. It is musically distinct and acts as an exclamation mark at the end of Act 1 – an *intermezzo* passage of sorts. Hereafter, the sequences generally become incrementally fuller with the average music saturation rising from 65.30% in the Journey Begins sequence to 79.11% in the Journey Continues, to 88.90% in the All is Lost passage, and 94% in the Final Push (see **Figure 6.24**).

The eight-sequence saturation profiles of these films offer a more nuanced picture of the musical characteristics of each sequence and confirm a formal likeness and (largely) predictable formula in the application of Giacchino's music and construction of the Pixar score.

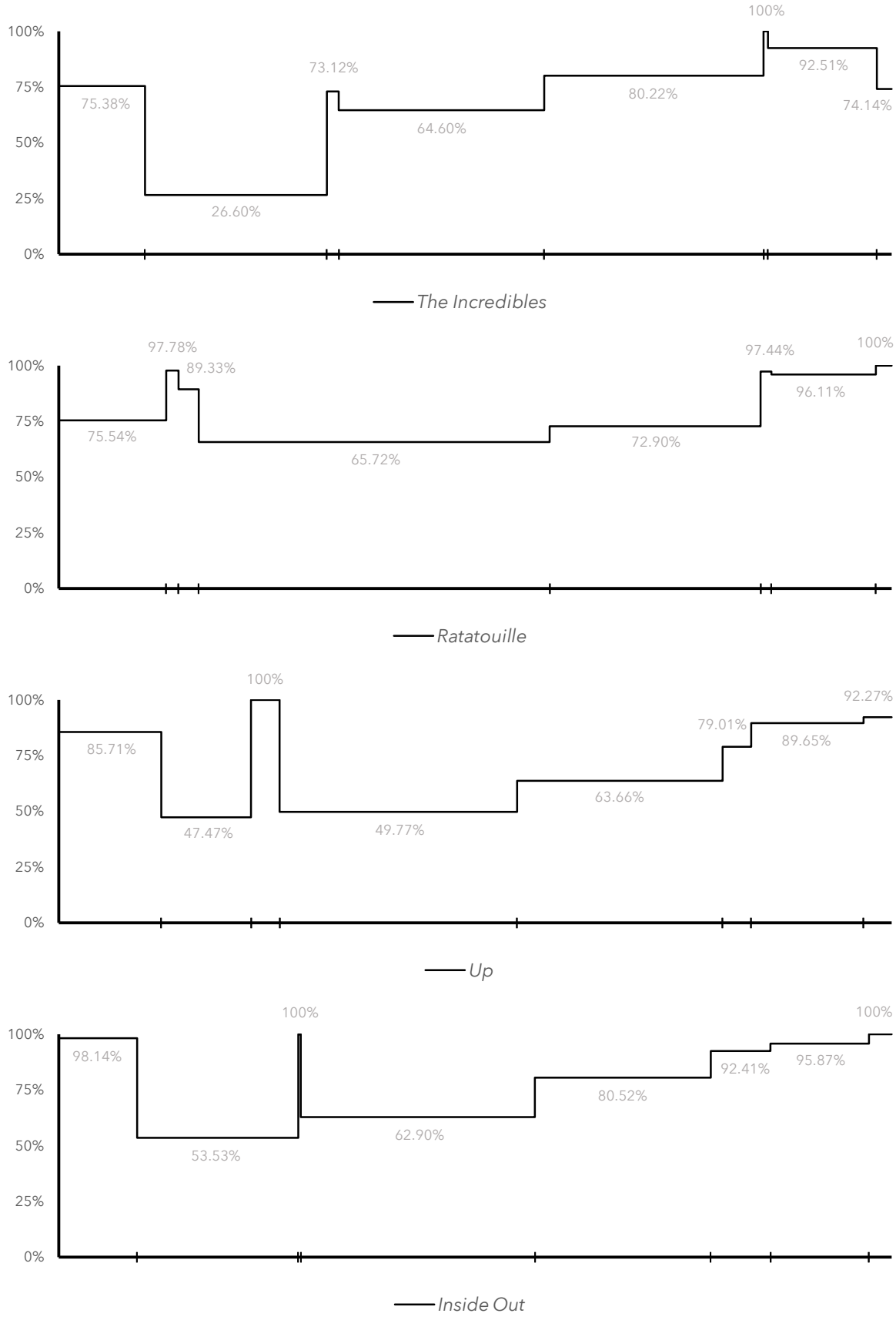


Figure 6.23 Eight-sequence saturation profiles

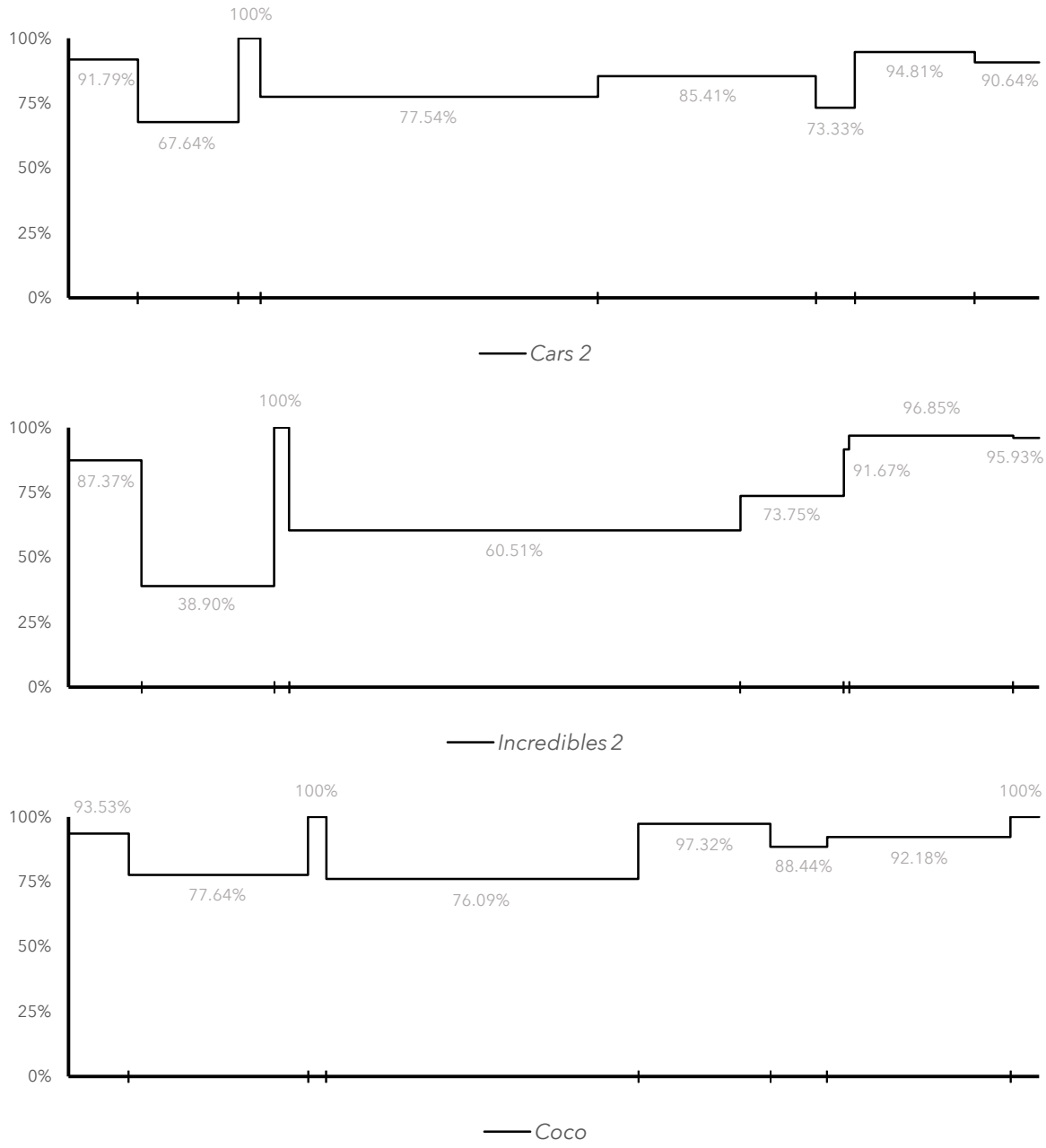


Figure 6.23 *cont.* Eight-sequence saturation profiles

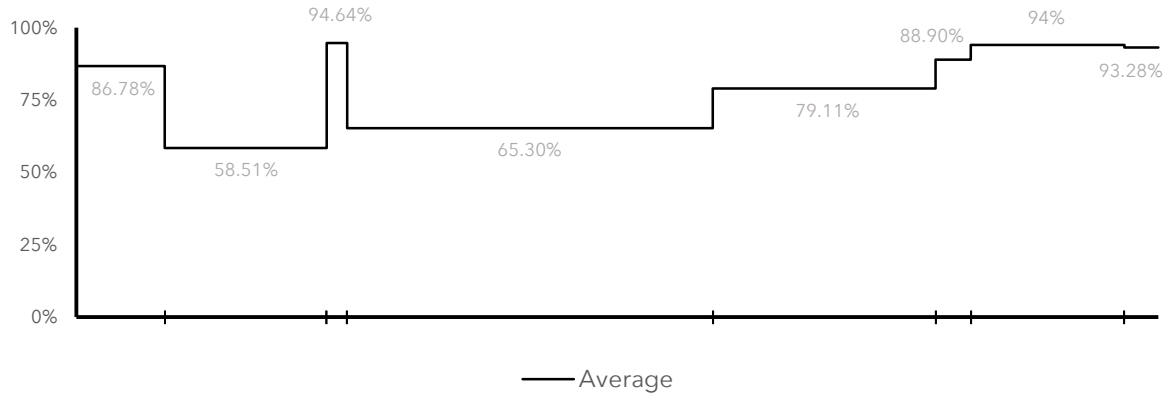


Figure 6.24 Average eight-sequence saturation profile

6.3.5 Film Music Saturation of *Onward* and *Super 8*

The following examples demonstrate the saturation profiles of 1) a Pixar film not scored by Giacchino and 2) a Giacchino score for a non-Pixar film. The film music saturation profiles of *Onward*, a Pixar film scored by Mychael and Jeff Danna, reveal similar shapes to those of the Pixar–Giacchino films. The film has an entire film saturation of 73.56%, almost equal to the 74.20% average of the Giacchino scores. A closer look at the three-act saturation figures of *Onward* (see **Figure 6.25**) show that they are remarkably similar to the Pixar–Giacchino averages of 69.39%, 71.32%, 93.87% (represented below by a dashed grey line).

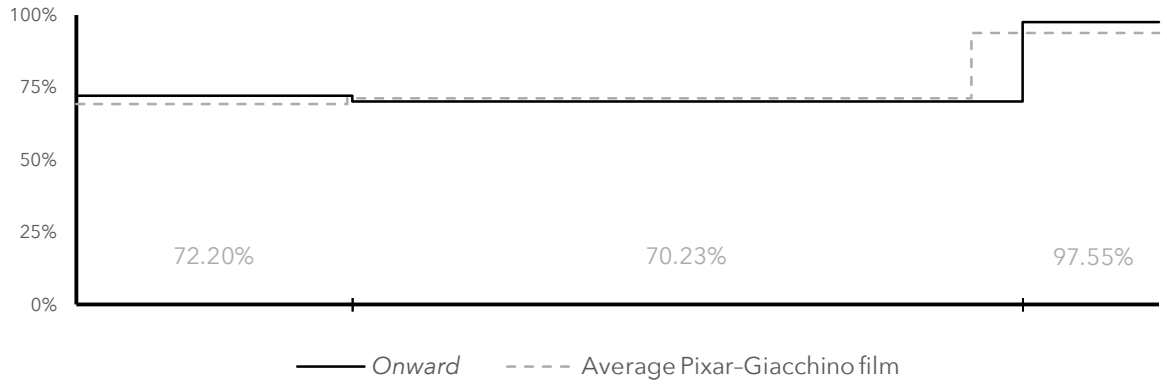


Figure 6.25 *Onward* three-act saturation profile

A four-act breakdown of *Onward* reveals an even closer likeness to the average Pixar–Giacchino film (69.39%, 65.30%, 79.50%, 93.87%) (**Figure 6.26**). These uncanny likenesses

indicate a standardisation in way that music is deployed in Pixar films that is almost certainly not measured or considered during the production of the score.

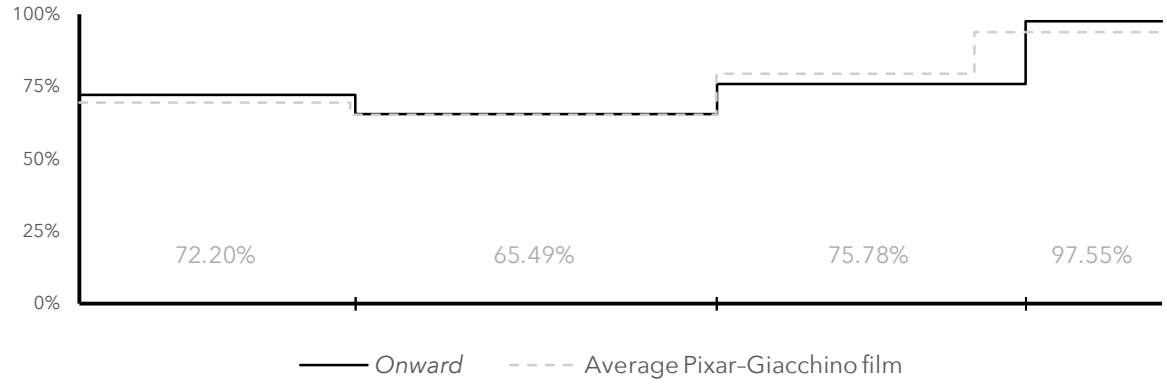


Figure 6.26 *Onward* four-act saturation profile

Figure 6.27 compares the eight-sequence saturation profiles of the Dannas' score and the hypothetical Giacchino one. Though the figures for *Onward* exhibit some differences compared to those of the Pixar–Giacchino average (86.78%, 58.51%, 94.64%, 65.30%, 79.11%, 88.90%, 94.00%, 93.28%), the general shape – the peaks and troughs – remains the same.

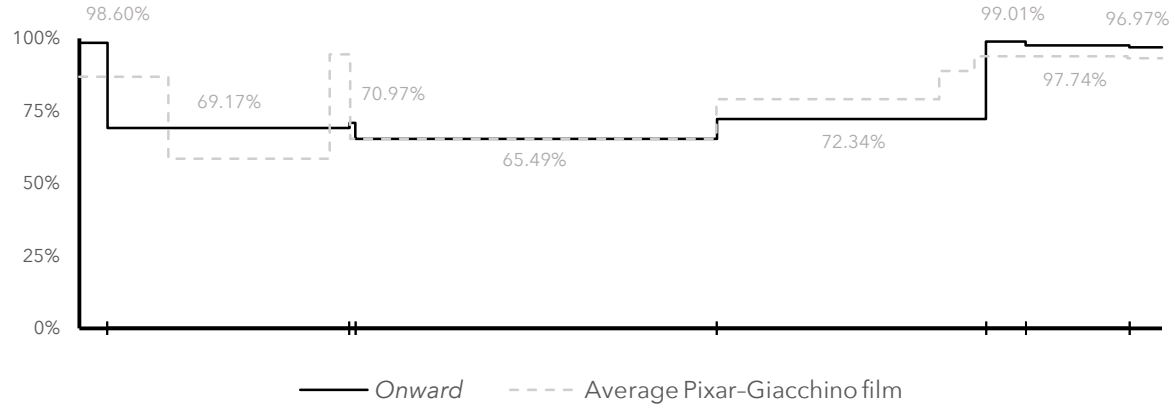


Figure 6.27 *Onward* sequence saturation profile

Figures 6.28, **6.29**, and **6.30** show the film music saturation data of *Super 8*, a live-action film scored by Michael Giacchino. At each stage, I compare it with Giacchino's *The Incredibles* score, which, at three- and four-act levels, are remarkably similar considering

how different the films are in style and story.[254] **Figure 6.28** provides the saturation figures and profile of *Super 8*'s three acts alongside the comparable profile of *The Incredibles* (43.64%, 72.94%, 90.28%).

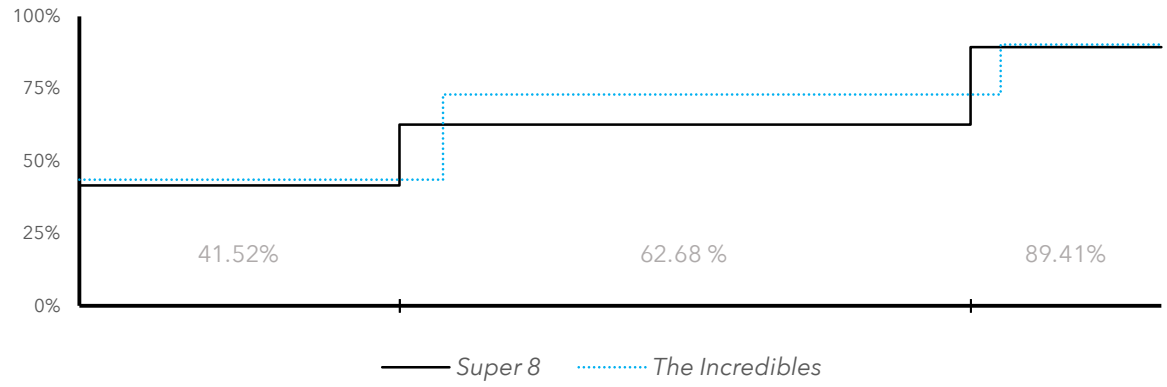


Figure 6.28 *Super 8* three-act saturation profile

Figure 6.29 shows the figures for each film at a four-act level. *The Incredibles*' step-like second act figures of 64.60% (2A) and 80.59% (2B) have the same 16% difference between them as *Super 8*'s corresponding 2A and 2B.

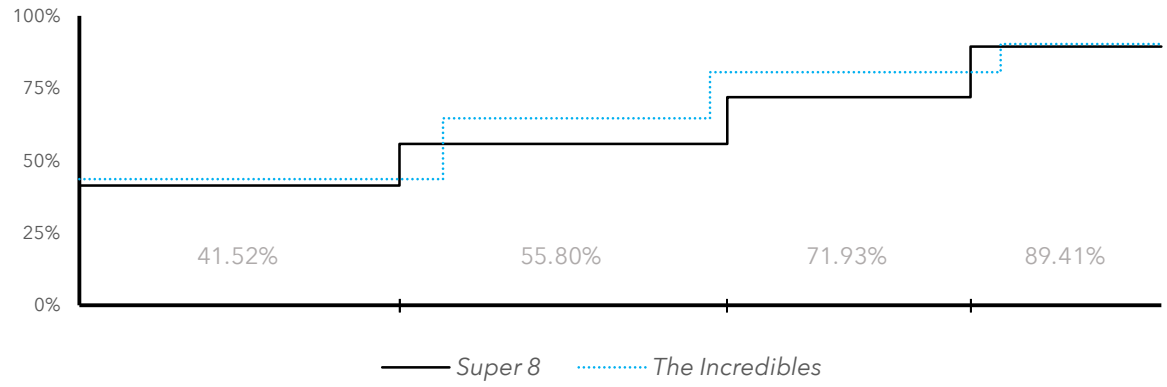


Figure 6.29 *Super 8* four-act saturation profile

Arriving at an eight-sequence comparison of the saturation of *Super 8* and *The Incredibles*, disparities begin to reveal themselves. Structurally, *Super 8* differs from the other films in this chapter because it includes neither a Crossing the Threshold nor an Aftermath

[254] Note that *The Incredibles* carries a PG age rating while *Super 8* is recommended PG-13.

sequence. This does not affect the shape too dramatically as these are typically short sequences. The film's music saturation profile in **Figure 6.30** reveals a consistent upward trend in the volume of music deployed, dropping down only once for a fractionally 'quieter' All is Lost sequence.

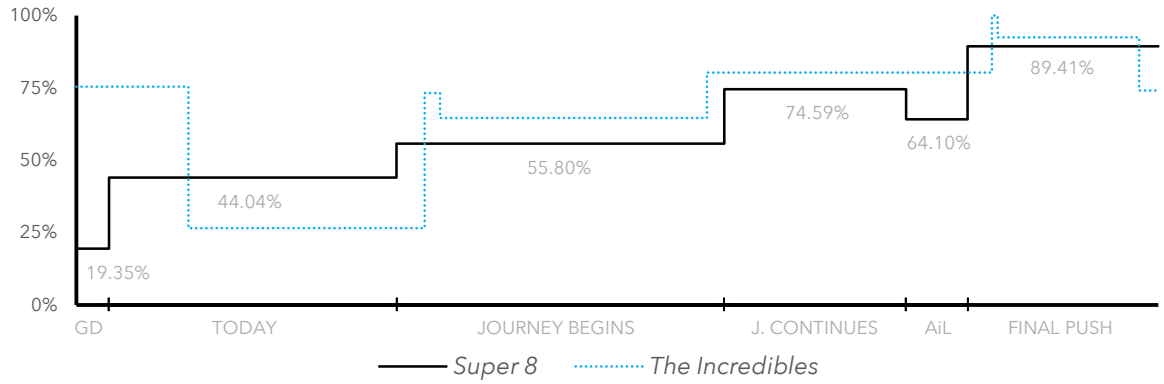


Figure 6.30 *Super 8* sequence saturation profile

Figure 6.30 highlights significant disparities between the duration and musical saturation of the Glory Days and All is Lost sequences. In both instances, Giacchino deploys a far greater density of music in *The Incredibles* than in *Super 8*. Another significant difference between the two films can be found move from Glory Days to Today. *Super 8*'s Today sequence contains significantly more music than its Glory Days, whereas *The Incredibles* score demonstrates the reverse. One can only speculate as to the reasoning behind and relevance of these opposing approaches to music distribution, but at the heart of it is a compulsion to create contrast within Act 1.

A more extensive study on the music saturation in a large body of films has the potential to generate compelling data that could develop the current understanding of film genres and scoring conventions. This type of study is futile for the analysis of individual films, but fascinating and productive when applied to a corpus in this way.

6.4 Conclusion

As mentioned at the beginning of this thesis, Michael Giacchino asserts that the role of the film composer is 'not to write music' but to 'tell a story'.[255] Oftentimes, as evidenced in this chapter, the most effective way for a composer to tell a story (or parts of a story) is quite literally by *not* writing music. Giacchino strategically deprives the film of music during moments in which the story deprives the protagonist of hope. This is not to say that the composer does not write mournful cues but that he recognises that, at times, characters and audiences need sonic space to, in his words, 'have enough time to sit and experience […] sadness'.[256] As Randy Thom explains, some sequences are made 'more lonely […] and certainly more "real" by the absence of music.'[257]

At times, silence provides a background upon which to foreground music and at other times, the reverse. While some of these silences are of course informed by superficial onscreen stimuli, others transcend the individual film, reacting to and communicating on a deeper level narrative organisation.

Though an unorthodox approach to film music analysis, the investigation into music saturation in the latter part of this chapter reveals several trends in the way that music populates Pixar films. The saturation profiles created by mapping the ratio of music to musical silence in each section displays the 'shape' of an entire film score in ways previously unseen. Saturation 'profiles' may then be compared with one another to uncover trends in film music usage. These novel findings corroborate contested methods of narrative segmentation by revealing distinct differences in the way that filmmakers treat each passage of a film.

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[255] Burlingame, J., 'Michael Giacchino: Driven by Stories,' at http://variety.com/2010/digital/news/michael-giacchino-driven-by-stories-1118025204/ (October, 2010) (Accessed 28th October, 2015)

[256] 'Academy Conversations: Inside Out,' (2015) at https://www.youtube.com/watch?v=nv15xrVTDpc (Accessed 22nd September, 2020)

[257] Thom, R., 'On Sound Designing: *Cast Away*,' in *The Soundtrack*, Vol. 2: No. 1 (Intellect Ltd, 2009), pp.19–20.

7

CONCLUSION

Making a film, you have all these different departments,
and what you're trying to do is find a way to get them to put forth
their creativity in a harmonious way. Otherwise, it's like you have an
orchestra where everybody's playing their own music.
– Brad Bird

The key research question addressed in this thesis is: 'How does the organisation of film music relate to that of a filmic narrative?' In answering this question, the thesis had two aims: 1) to better understand the relationship between the organisation of film music and that of the filmic narrative in order to validate practitioners' claims that their music 'tells a story' and 2) to discover trends in the organisation of film music in order to debunk unhelpful assumptions that each musical score is formally unique.

7.1 The Film Music Organisation Method

At the beginning of this thesis, I indicated that, while film composers often assert that their music tells or reflects a story, their claims are rarely qualified or empirically verified. In fact, during a video interview whose title promises to answer '[…] How Music Tells the Story', Hans Zimmer offers little more than the fatuous response, 'Story. Stick to the story like glue. Know the story. Story, story, story, story.'[258] While Zimmer's advice offers little insight into how music might practically 'stick to the story', he hints at how analysts might best interpret film music: by its relationship with a film's underlying story. In this thesis, I have provided an analytical method that depicts the position and duration of film music components as they relate to a film's timeline so that music may be discussed at the level of the entire film without abstracting it from its narrative context. This method facilitates large-scale film music analysis and helps to demonstrate how the placement of musical cues and themes

[258] '"Interstellar" Composer Hans Zimmer on How Music Tells the Story' at https://www.youtube.com/watch?v=5yOk9BNYzMc&feature=share (Accessed 3rd January 2019)

– traditionally part of the spotting process – interacts with film form and the protagonist's journey.

Unlike other approaches, this study treats durations as proportional data. By doing so, the Film Music Organisation method proposed in Chapter 3 encourages a corpus analysis and reveals trends in the coordination of music and narrative across multiple films. As such, I have demonstrated that many Pixar films and film scores are organised by a common narrative framework, contradicting claims made by Robynn Stilwell that film music is 'the only predominantly instrumental musical genre which comes with no formal expectations'[259] and calls into question suggestions made by Adorno and Eisler that good film music is 'fundamentally anti-formalistic'.[260] Empirical evidence shows that, in a narrow selection of Pixar films at least, film music form can be highly predictable when recognised for its contribution to a cinematic discourse rather than as an independent voice.

The eight-sequence segmentation of the Pixar narrative proposed in this thesis has been designed based on the observations of over twenty Pixar films (both short and feature-length). It can also be applied with little or no adaptation to films beyond the Pixar canon. The definitions and titles given to each of the film's main chapters – as well as their internal subdivisions – have been elected to provide the clearest impression of the protagonist's journey throughout the film. Based on empirical observations, it offers a neat framework for understanding and analysing a broad range of film forms. However, due to the flexibility of the Film Music Organisation method, this framework may be substituted in favour of other narrative theories.

A limitation to the Film Music Organisation barcode diagrams was discovered during application. Notably, there are issues with the level of detail available with a 6" diameter barcode diagram – a size chosen so that diagrams can be easily embedded into book chapters. When musical details make up an infinitesimal amount of the total duration (e.g., two seconds of music in a two-hour film), the marker on the diagram gets lost in the pixels.

[259] Stilwell, R., 'Sense & Sensibility: Form, Genre, and Function in the Film Score,' in *Acta Musicologica*, Vol. 72: No 2. (2000), p.222.
[260] Adorno, T. W. and Eisler, H., *Composing for the Films* (2nd edn.) (New York: Oxford University Press, 2007), p.65.

This is not an issue that affects the clock diagram, which naturally produces a longer timeline upon which to display data. A solution to the barcode fidelity issue would be to produce a longer graph and position it landscape on the page, however, this solution limits the amount of films that can be aligned and compared in any one space. It is my hope that future scholars will be able to use, refine, and expand upon this fledgling methodology to develop a more robust model for the comparative and narratively contextualised analyses of film scores.

7.2 Composer as Storyteller: A Structural Scoring Strategy

This thesis concludes that the most important aspect of a narratively informed film score is its structure. I have shown that it is a coordinated approach to the arrangement of musical themes and cues that most effectively relates music and story. Michael Giacchino's approach to structure demonstrates a deep understanding of and connection with story form. Through his patterning of musical contrasts – music and musical silence (and the limitless dynamic levels in between); the diegetic levels at which the music is perceived (a seemingly simple binary, but theoretically vast in scope); the organisation and transformation of musical themes and tonal designs of cues; and the use of contrasting musical styles and timbres – his scores typically mark, characterise, and connect individual passages of the film. While Giacchino claims not to follow a long-range plan consciously, instead working chronologically through the film using instinct to allow the music to 'grow proportionate [*sic*] to the storytelling', the fascinating formal designs revealed in his Pixar scores cannot be dismissed as merely coincidental or adventitious, as similar organisational schemas can be found in other Pixar scores.[261]

This thesis demonstrates that there are Pixar film score paradigms at three-act, four-act, and eight-sequence levels. Three-act film music scores demonstrate a ternary form, whether through tonality (e.g., **tonic » modulation » tonic**), meter (e.g., **simple » compound » simple**), diegetic level (e.g., **diegetic » non-diegetic » diegetic**), thematic presence (e.g., **presence » absence » presence**), or a combination of these contrasts and others (e.g., **diegetic » absence » non-diegetic**). I refer to these scores as examples of ternary-act form.

[261] Spoken at a masterclass at the Royal Albert Hall in London on 18th October, 2017.

This term describes the A-B-A organisation of the music and, at the same time, the music's coordination with the film's three-act structure. Often embedded within these tripartite structures is a bipartite Act 2 (or B-section), expressed by any of the aforementioned contrasts and more. I refer to this A-B^1-B^2-A formal design as quadripartite ternary-act form. In Chapter 5, I extract a formula for thematic distribution in the feature film scores of Michael Giacchino, describing ten zones in which he will likely include salient melodic details. Each of these zones aligns with a plot event that transcends the individual film, e.g., 'protagonist makes a decision' rather than 'Mr Incredible accepts his mission'.

Based on my observations of Pixar's typical formal organisation, I suspect that the score for upcoming Pixar film *Soul* will have a ternary-act form made up of contrasting musical styles. Three composers have been hired for the score: the composing team of Trent Reznor and Atticus Ross, and jazz musician Jon Baptiste. I predict that the 'human world' of Act 1, in which aspiring jazz pianist Joe Gardner lives, will be largely accompanied by Baptiste's jazz stylings and the so-called The Great Before where Gardner's soul winds up in Act 2 will be largely underscored by the electronic soundscapes of Reznor and Ross. Assuming the predictable 'happy ever after' ending, Gardner's soul will return to his body during Act 3 and the film will close with the return of jazz tunes. If this prediction turns out to be correct, it will make for a fascinating variation on the ternary-act musical forms uncovered in this thesis.

7.3 Further Research and Final Thoughts

By offering new approaches to the portrayal and discussion of narrative film music, this study opens up a number of significant opportunities for further research in the areas of screen music studies, film studies, genre studies, and narratology.

Firstly and most obviously, this thesis concentrates on a fairly narrow selection of film scores. However, to date, Michael Giacchino has 47 feature film scores to his name as well as soundtracks for a number of short films, television series, and video games.[262] Pixar Animation Studios are due to release their 23rd feature film in December 2020 and also

[262] Giacchino's name is attached to three feature film projects scheduled for a 2021 release.

recently established a short film initiative called SparkShorts with a plan to release short films on a more regular basis. A deeper dive into either of these prodigious back catalogues would surely enrich and diversify the analytical method and nascent theories put forth in this study. Expanding the repertoire to include the works of other filmmakers, composers, and filmmaker–composer teams may require an evolution of the analytical tools but it is my hope that the approach laid out in this thesis provides a flexible enough starting point. As the enquiry into film music organisation extends beyond the scope of this thesis, it is likely that the research will feed into genre studies, demonstrating repeated formal conventions within certain collections of films. The Film Music Organisation method provides a framework for interpreting the consistency and evolution of particular genres and franchises.

An extensive study on the concision and production of narrative short films could provide film studies with novel insights into narrative essentialism and efficient filmmaking practices that will otherwise be overlooked. The comparisons between features and shorts made in this thesis demonstrate several commonalities that could provide the basis for further theoretical refinements.

In practice, film scores are often assembled late in production by dubbing engineers and directors long after the composer has signed off on the project. As a result, the musical 'story' put forward by the composer may be subject to imprudent reordering. Music editor Stephen Davis tells me that there have been occasions where 'the changes to the score were so numerous during dubbing that the composer's story was nowhere to be found.'[263] He likens the experience to a publisher rearranging the pages of a book without the author's approval. 'While it might be possible to do,' Davis says, 'sometimes it does not make the story better.'[264] I hope that this thesis is not the last to provide evidence that the organisation of film music has the potential to contribute to filmic storytelling in meaningful ways. Film music cues cannot be assumed to be interchangeable. To do so is to run the risk of compromising the long-range narrative plans of the composer.

[263] Stephen M. Davis in correspondence with the author on 10th May, 2016.
[264] Ibid.

This study set out to develop an understanding of how film composers put music to picture in a way that supports a film's story. By examining how the organisation of the music relates to the plot in numerous films, I have discovered that scoring decisions oftentimes transcend the individual film, influenced instead by a common narrative template. By recognising the collaborative relationship between ubiquitous narrative frameworks and the organisation of film music scores, one soon realises that, while diverse and innovative in many respects, narrative film music is remarkably prescribed.

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A Bug's Life (1998, dir. J. Lasseter, score by Randy Newman)
Alexander Nevsky (1938, dir. S. Eisenstein and D. Vasilyev, score by Sergei Prokofiev)
Atlantis: The Lost Empire (2001, dir. G. Trousdale and K. Wise, score by James Newton Howard)
Avatar (2009, dir. J. Cameron, score by James Horner)
Back to the Future (1985, dir. R. Zemeckis, score by Alan Silvestri)
Bao (short) (2018, dir. D. Shi, score by Toby Chu)
Barton Fink (1991, dir. J. Coen, E. Coen [uncredited], score by C. Burwell)
Blue is the Warmest Colour (2013, dir. A. Kechiche, additional music by Jean-Paul Hurier)
Brave (2012, dir. M. Andrews and B. Chapman, score by Patrick Doyle).
Butch Cassidy and the Sundance Kid (1969, dir. G. R. Hill, score by Burt Bacharach)
Cars (2006, dir. J. Lasseter, score by Randy Newman)
Cars 2 (2011, dir. J. Lasseter, score by Michael Giacchino)
Cars 3 (2017, B. Fee, score by Randy Newman)
Cast Away (2000, dir. R. Zemekis, score by Alan Silvestri)
Close Encounters of the Third Kind (1977, dir. S. Spielberg, score by John Williams)
Coco (2017, dir. L. Unkrich, score by Michael Giacchino)
Day & Night (short) (2010, dir. T. Newton, score by Michael Giacchino)
Doctor Strange (2016, dir. S. Derrickson, score by Michael Giacchino)
E.T.: The Extra-Terrestrial (1982, dir. S. Spielberg, score by John Williams)
Fargo (1996, dir. J. Coen and E. Coen [uncredited], score by Carter Burwell)
Finding Dory (2016, dir. A. Stanton, score by Thomas Newman)
Finding Nemo (2003, dir. A. Stanton, score by Thomas Newman)
Gravity (2013, dir. A. Cuarón, score by Steven Price)
Harry Potter and the Philosopher's Stone (2001, dir. C. Columbus, score by John Williams)
Incredibles 2 (2018, dir. B. Bird, score by Michael Giacchino)
Inside Out (2010, dir. P. Docter, score by Michael Giacchino)
Interstellar (2014, dir. C. Nolan, score by Hans Zimmer)
Jaws (1975, dir. S. Spielberg, score by John Williams)
John Carter (2012, dir. A. Stanton, score by Michael Giacchino)
Jupiter Ascending (2015, dir. L. Wachowski and L. Wachowski, score by Michael Giacchino)

Jurassic Park (1993, dir. S. Spielberg, score by John Williams)
King Kong (1933, dir. M. Cooper and E. Schoedsack, score by Max Steiner)
La Luna (short) (2011, dir. E. Casarosa, score by Michael Giacchino)
Lava (short) (2014, dir. J. Ford Murphy, score by James Ford Murphy)
Le ciel est à vous (1944, dir. J. Grémillon, score by Roland Manuel)
Lifted (short) (2007, dir. G. Rydstrom, score by Michael Giacchino)
Lou (short) (2017, dir. D. Mullins, score by Christophe Beck)
Luxo Jnr. (short) (1986, dir. J. Lasseter, score by Brian Bennett [uncredited])
Miller's Crossing (1990, dir. J. Coen, E. Coen [uncredited], score by C. Burwell)
Monster Challenge (short) (2018, dir. M. Giacchino, score by Michael Giacchino)
One Man Band (short) (2005, dir. M. Andrews and A. Jimenez, score by Michael Giacchino)
Onward (2020, dir. D. Scanlon, score by Mychael Danna and Jeff Danna)
Partly Cloudy (short) (2009, dir. P. Sohn, score by Michael Giacchino)
Piper (short) (2016, dir. A. Barillaro, score by Adrian Belew)
Presto (short) (2008, dir. D. Sweetland, score by Scot Stafford)
Ratatouille (2007, dir. B. Bird and J. Pinkava, score by Michael Giacchino)
Rogue One: A Star Wars Story (2016, dir. G. Edwards, score by Michael Giacchino)
Sanjay's Super Team (short) (2015, dir. S. Patel, score by Mychael Danna)
Sausage Party (2016, dir. G. Tiernan and C. Vernon, score by Alan Menken and Christopher Lennertz)
Soul (2020, dir. P. Docter, score by Trent Reznor and Atticus Ross. Additional music by Jon Baptiste)
Star Trek (2009, dir. J. Abrams, score by Michael Giacchino)
Star Trek: Short Treks 'Ephraim and Dot' (Season 2, Episode 4) (2019, dir. M. Giacchino, score by Michael Giacchino)
Super 8 (2010, dir. J. Abrams, score by Michael Giacchino)
The Blue Umbrella (short) (2013, dir. S. Unseld, score by Jon Brion)
The Good Dinosaur (2015, dir. P. Sohn, score by Mychael and Jeff Danna)
The Grand Budapest Hotel (2014, dir. W. Anderson, score by Alexandre Desplat)
The Incredibles (2004, dir. B. Bird, score by Michael Giacchino)
The Last Emperor (1987, dir. B. Bertolucci, score by David Byrne, Ryuichi Sakamoto and Cong Su)
The Matrix (1999, dir. the Wachowskis, score by Don Davis)

The Rifleman 'Outlaw's Inheritance' (Season 1, Episode 38) (1966, dir. D. Taylor, score by Herschel Burke Gilbert)

Toy Story (1995, dir. J. Lasseter, score by Randy Newman)

Toy Story 2 (1999, dir. J. Lasseter, score by Randy Newman)

Toy Story 4 (2014, dir. J. Cooley, score by Randy Newman)

Up (2009, dir. P. Docter, score by Michael Giacchino)

Vertigo (1958, dir. A. Hitchcock, score by Bernard Herrmann)

WALL•E (2008, dir. A. Stanton, score by Thomas Newman)

Wrath of the Titans (2012, dir. J. Liebesman, score by Javier Navarrete)

APPENDIX I: Short Film Timing Data[265]

Partly Cloudy (2009)
Directed by Peter Sohn
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:10	0	00:05:01	100	00:04:51	100

THEME IN	%	THEME OUT	%	DURATION	%
00:00:11	0.34	00:01:02	17.87	00:00:51	17.53
00:01:15	22.34	00:01:44	32.30	00:00:29	9.97
00:01:51	34.71	00:01:54	35.74	00:00:03	1.03
00:02:10	41.24	00:02:17	43.64	00:00:07	2.41
00:02:19	44.33	00:02:38	50.86	00:00:19	6.53
00:02:50	54.98	00:03:00	58.52	00:00:10	3.44
00:03:05	60.14	00:03:21	65.64	00:00:16	5.50
00:03:23	66.32	00:03:38	71.48	00:00:15	5.15
00:04:41	93.13	00:04:58	98.97	00:00:17	5.84

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:10	0	00:01:26	26.12	00:01:16	26.12
T	00:01:26	26.12	00:02:14	42.61	00:00:48	16.49
CtT	00:02:14	42.61	00:02:18	43.99	00:00:04	1.37
JB	00:02:18	43.99	00:03:00	58.42	00:00:42	14.43
JC	00:03:00	58.42	00:03:58	78.35	00:00:58	19.93
AiL	00:04:15	84.19	00:04:28	88.66	00:00:30	10.31
FP	00:04:28	88.66	00:05:01	100	00:00:33	11.34
A: S	-	-	-	-	-	-

The Blue Umbrella (2013)
Directed by Saschka Unseld
Music by Jon Brion

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:43	9.72	00:02:27	38.61	00:01:44	28.89
00:02:30	39.44	00:04:07	66.39	00:01:37	26.94
00:05:29	89.17	00:06:08	100	00:00:39	10.83

THEME IN	%	THEME OUT	%	DURATION	%
00:01:19	19.72	00:01:40	25.56	00:00:21	5.83
00:01:55	29.72	00:02:08	33.33	00:00:13	3.61
00:02:32	40.00	00:02:43	43.06	00:00:11	3.06
00:02:52	45.56	00:03:09	50.28	00:00:17	4.72
00:04:02	65.00	00:04:07	66.39	00:00:05	1.39
00:05:32	90.00	00:06:07	99.72	00:00:35	9.72

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:08	0	00:01:19	19.72	00:01:11	19.72
T	00:01:19	19.72	00:03:09	50.28	00:01:50	30.56
CtT	00:03:09	50.28	00:03:16	52.22	00:00:07	1.94
JB	00:03:16	52.22	00:04:07	66.39	00:00:51	14.17
JC	00:04:07	66.39	00:04:41	75.83	00:00:34	9.44
AiL	00:04:41	75.83	00:05:25	88.06	00:00:44	12.22
FP	00:05:25	88.06	00:05:52	95.56	00:00:27	7.50
A: S	00:05:52	95.56	00:06:08	100	00:00:16	4.44

[265] All timings were collected from DVDs or iTunes streams.

Piper (2016)
Directed by Alan Barillaro
Music by Adrian Belew

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:15	1.27	00:01:19	21.66	00:01:04	20.38
00:01:23	22.93	00:01:30	25.16	00:00:07	2.23
00:01:31	25.48	00:02:07	36.94	00:00:36	11.46
00:02:14	39.17	00:02:25	42.68	00:00:11	3.50
00:02:27	43.31	00:02:34	45.54	00:00:07	2.23
00:02:37	46.50	00:03:02	54.46	00:00:25	7.96
00:03:05	55.41	00:03:25	61.78	00:00:20	6.37
00:03:28	62.74	00:03:36	65.29	00:00:08	2.55
00:03:38	65.92	00:03:40	66.56	00:00:02	0.64
00:03:42	67.20	00:05:25	100	00:01:43	32.80

THEME IN	%	THEME OUT	%	DURATION	%
00:00:18	2.23	00:00:25	4.46	00:00:07	2.23
00:00:34	7.32	00:00:40	9.24	00:00:06	1.91
00:00:45	10.83	00:00:49	12.10	00:00:04	1.27
00:01:00	15.61	00:01:03	16.56	00:00:03	0.96
00:01:35	26.75	00:01:42	28.98	00:00:07	2.23
00:02:03	35.67	00:02:06	36.62	00:00:03	0.96
00:02:16	39.81	00:02:24	42.36	00:00:08	2.55
00:02:44	48.73	00:02:46	49.36	00:00:02	0.64
00:02:47	49.68	00:02:49	50.32	00:00:02	0.64
00:04:30	82.48	00:04:32	83.12	00:00:02	0.64
00:04:47	87.90	00:04:52	89.49	00:00:05	1.59

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:11	0	00:00:54	13.69	00:00:43	13.69
T	00:00:54	13.69	00:01:34	26.43	00:00:40	12.74
CtT	00:01:34	26.43	00:01:46	30.25	00:00:36	3.82
JB	00:01:46	30.25	00:03:04	55.10	00:00:54	24.84
JC	00:03:04	55.10	00:04:05	74.52	00:01:01	19.43
AiL	00:04:05	74.52	00:04:33	83.44	00:00:28	8.92
FP	00:04:33	83.44	00:05:07	94.27	00:00:34	10.83
A: S	00:05:07	94.27	00:05:25	100	00:00:18	5.73

Lou (2017)
Directed by Dave Mullins
Music by Christophe Beck

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:29	4.27	00:00:56	11.97	00:00:27	7.69
00:00:58	12.54	00:02:05	31.62	00:01:07	19.09
00:02:07	32.19	00:02:14	34.19	00:00:07	1.99
00:02:17	35.04	00:02:28	38.18	00:00:11	3.13
00:02:41	41.88	00:02:45	43.02	00:00:04	1.14
00:02:46	43.30	00:02:55	45.87	00:00:09	2.56
00:02:57	46.44	00:03:54	62.68	00:00:57	16.24
00:03:58	63.82	00:06:05	100	00:02:07	36.18

THEME IN	%	THEME OUT	%	DURATION	%
00:01:06	14.81	00:01:18	18.23	00:00:12	3.42
00:04:56	80.34	00:05:17	86.32	00:00:21	5.98
00:05:24	88.32	00:05:36	91.74	00:00:12	3.42
00:05:40	92.88	00:05:46	94.59	00:00:06	1.71
00:05:51	96.01	00:05:55	97.15	00:00:04	1.14

BULLY THEME IN	%	BULLY THEME OUT	%	DURATION	%
00:01:24	19.94	00:01:31	21.94	00:00:07	1.99
00:01:31	21.94	00:01:38	23.93	00:00:07	1.99
00:04:24	71.23	00:04:36	74.64	00:00:12	3.42

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:14	0	00:01:06	14.81	00:00:52	14.81
T	00:01:06	14.81	00:01:53	28.21	00:00:47	13.39
CtT	00:01:53	28.21	00:01:55	28.77	00:00:02	0.57
JB	00:01:55	28.77	00:02:46	43.30	00:00:51	14.53
JC	00:02:46	43.30	00:04:03	65.24	00:01:17	21.94
AiL	00:04:03	65.24	00:04:22	70.66	00:00:19	5.41
FP	00:04:22	70.66	00:05:50	95.73	00:01:28	25.07
A: S	00:05:50	95.73	00:06:05	100	00:00:15	4.27

Sanjay's Super Team (2015)
Directed by Sanjay Patel
Music by Mychael Danna

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:16	1.08	00:00:35	6.20	00:00:19	5.12
00:00:36	6.47	00:01:01	13.21	00:00:25	6.74
00:02:25	35.85	00:03:18	50.13	00:00:53	14.29
00:03:22	51.21	00:04:04	62.53	00:00:42	11.32
00:04:32	70.08	00:04:45	73.58	00:00:13	3.50
00:05:02	78.17	00:05:24	84.10	00:00:22	5.93
00:05:38	87.87	00:06:23	100	00:00:45	12.13

THEME IN	%	THEME OUT	%	DURATION	%
00:00:24	3.23	00:00:26	3.77	00:00:02	0.54
00:00:29	4.58	00:00:32	5.39	00:00:03	0.81
00:00:39	7.28	00:00:41	7.82	00:00:02	0.54
00:00:44	8.63	00:00:46	9.16	00:00:02	0.54
00:04:40	72.24	00:04:42	72.78	00:00:02	0.54
00:05:03	78.44	00:05:11	80.59	00:00:08	2.16
00:05:47	90.30	00:05:53	91.91	00:00:06	1.62
00:06:02	94.34	00:06:08	95.96	00:00:06	1.62
00:06:17	98.38	00:06:22	99.73	00:00:05	1.35

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:12	0	00:01:02	13.48	00:00:50	13.48
T	00:01:02	13.48	00:02:02	29.65	00:01:00	16.17
CtT	00:02:02	29.65	00:02:04	30.19	00:00:02	0.54
JB	00:02:04	30.19	00:03:20	50.67	00:01:16	20.49
JC	00:03:20	50.67	00:04:31	69.81	00:01:11	19.14
AiL	00:04:31	69.81	00:04:40	72.24	00:00:09	2.43
FP	00:04:40	72.24	00:06:23	100	00:01:43	27.76
A: S	-	-	-	-	-	-

Bao (2018)
Directed by Domee Shi
Music by Toby Chu

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:12	0	00:00:48	8.61	00:00:36	8.61
00:01:18	8.61	00:05:07	70.57	00:03:49	54.78
00:05:44	79.43	00:05:59	83.01	00:00:15	3.59
00:06:08	85.17	00:07:10	100	00:01:02	14.83

THEME IN	%	THEME OUT	%	DURATION	%
00:00:17	1.20	00:00:37	5.98	00:00:20	4.78
00:01:52	23.92	00:02:07	27.51	00:00:15	3.59
00:02:08	27.75	00:02:14	29.19	00:00:06	1.44
00:02:19	30.38	00:02:34	33.97	00:00:15	3.59
00:02:35	34.21	00:02:38	34.93	00:00:03	0.72
00:02:43	36.12	00:02:51	38.04	00:00:08	1.91
00:02:53	38.52	00:03:00	40.19	00:00:07	1.67
00:03:16	44.02	00:03:36	48.80	00:00:20	4.78
00:03:39	49.52	00:04:01	54.78	00:00:22	5.26
00:04:25	60.53	00:04:40	64.11	00:00:15	3.59
00:04:42	64.59	00:04:50	66.51	00:00:08	1.91
00:04:53	67.22	00:04:59	68.66	00:00:06	1.44
00:05:44	79.43	00:05:49	80.62	00:00:05	1.20
00:06:09	85.41	00:06:13	86.36	00:00:04	0.96
00:06:52	95.69	00:07:02	98.09	00:00:10	2.39

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:12	0	00:00:43	7.42	00:00:31	7.42
T	00:00:43	7.42	00:01:39	20.81	00:00:56	13.40
CtT	00:01:39	20.81	00:01:42	21.53	00:00:03	0.72
JB	00:01:42	21.53	00:03:17	44.26	00:01:35	22.73
JC	00:03:17	44.26	00:05:05	70.10	00:01:48	25.84
AiL	00:05:05	70.10	00:05:36	77.51	00:00:31	7.42
FP	00:05:36	77.51	00:06:48	94.74	00:01:12	17.22
A: S	00:06:48	94.74	00:07:10	100	00:00:22	5.26

Lava (2014)
Directed by James Ford Murphy
Music by James Ford Murphy

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:41	8.05	00:03:36	53.51	00:02:55	45.45
00:03:54	58.18	00:05:08	77.40	00:01:14	19.22
00:05:21	80.78	00:06:32	99.22	00:01:11	18.44

CHORUS IN	%	CHORUS OUT	%	DURATION	%
00:01:36	22.34	00:02:00	28.57	00:00:24	6.23
00:03:09	46.49	00:03:36	53,51	00:00:27	7.01
00:04:45	71.43	00:05:08	77.40	00:00:23	5.97
00:05:53	89.09	00:06:32	99.22	00:00:39	10.13

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:10	0	00:01:00	12.99	00:00:50	12.99%
T	00:01:00	12.99	00:02:00	28.57	00:01:00	15.58%
CtT	00:02:00	28.57	00:02:17	32.99	00:00:17	4.42%
JB	00:02:17	32.99	00:03:46	56.10	00:01:29	23.12%
JC	00:03:46	56.10	00:04:34	68.57	00:00:48	12.47%
AiL	00:04:34	68.57	00:05:11	78.18	00:00:37	9.61%
FP	00:05:11	78.18	00:06:35	100	00:01:24	21.82%
A: S	-	-	-	-	-	-

One Man Band (2005)
Directed by Andrew Jimenez and Mark Andrews
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:28	4.07	00:00:43	10.86	00:00:15	6.79
00:00:50	14.03	00:01:05	20.81	00:00:15	6.79
00:01:08	22.17	00:01:10	23.08	00:00:02	0.90
00:01:13	24.43	00:01:43	38.01	00:00:30	13.57
00:01:46	39.37	00:01:58	44.80	00:00:12	5.43

00:02:01	46.15	00:02:41	64.25	00:00:40	18.10
00:03:30	86.43	00:03:39	90.50	00:00:09	4.07

THEME IN	%	THEME OUT	%	DURATION	%
00:00:54	15.84	00:01:01	19.00	00:00:07	3.17
00:01:19	27.15	00:01:30	32.13	00:00:11	4.98
00:01:36	34.84	00:01:41	37.10	00:00:05	2.26
00:01:47	39.82	00:01:51	41.63	00:00:04	1.81
00:02:23	56.11	00:02:31	59.73	00:00:08	3.62

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:19	0	00:00:43	10.86	00:00:24	10.86%
T	00:00:43	10.86	00:01:08	22.17	00:00:25	11.31%
CtT	00:01:08	22.17	00:01:32	33.03	00:00:24	10.86%
JB	00:01:32	33.03	00:01:34	33.94	00:00:02	0.90%
JC	00:01:34	33.94	00:02:08	49.32	00:00:34	15.38%
AiL	00:02:08	49.32	00:02:53	69.68	00:00:45	20.36%
FP	00:02:53	69.68	00:04:00	100	00:00:14	6.33%
A: S	-	-	-	-	-	-

Lifted (2006)
Directed by Gary Rydstrom
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:38	9.62	00:00:55	16.15	00:00:17	6.54
00:01:22	26.54	00:01:29	29.23	00:00:07	2.69
00:01:52	38.08	00:01:53	38.46	00:00:01	0.38
00:02:18	48.08	00:02:25	50.77	00:00:07	2.69
00:02:36	55.00	00:02:38	55.77	00:00:02	0.77
00:02:46	58.85	00:03:08	67.31	00:00:22	8.46
00:03:30	75.77	00:03:45	81.54	00:00:15	5.77
00:04:00	87.31	00:04:16	93.46	00:00:16	6.15

THEME IN	%	THEME OUT	%	DURATION	%
00:02:22	49.62	00:02:25	50.77	00:00:03	1.15
00:02:50	60.38	00:02:53	61.54	00:00:03	1.15
00:02:55	62.31	00:02:58	63.46	00:00:03	1.15
00:04:01	87.69	00:04:03	88.46	00:00:02	0.77

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:13	0	00:01:02	18.85	00:00:49	18.85
T	00:01:02	18.85	00:01:07	20.77	00:00:05	1.92
CtT	00:01:07	20.77	00:01:12	22.69	00:00:05	1.92
JB	00:01:12	22.69	00:01:13	23.08	00:00:01	0.38
JC	00:01:13	23.08	00:02:16	47.31	00:01:03	24.23
AiL	00:02:16	47.31	00:03:47	82.31	00:01:31	35.00
FP	00:03:47	82.31	00:04:33	100	00:00:14	5.38
A: S	-	-	-	-	-	-

Day & Night (2010)
Directed by Teddy Newton
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:10	0.64	00:00:23	4.81	00:00:13	4.17
00:00:27	6.09	00:00:42	10.90	00:00:15	4.81
00:00:48	12.82	00:01:03	17.63	00:00:15	4.81
00:01:44	30.77	00:01:46	31.41	00:00:02	0.64
00:02:38	48.08	00:02:51	52.24	00:00:13	4.17
00:02:56	53.85	00:03:01	55.45	00:00:05	1.60

00:03:01	55.45	00:03:09	58.01	00:00:08	2.56
00:03:37	66.99	00:04:11	77.88	00:00:34	10.90
00:04:12	78.21	00:04:18	80.13	00:00:06	1.92
00:04:21	81.09	00:04:22	81.41	00:00:01	0.32
00:04:49	90.06	00:05:09	96.47	00:00:20	6.41
00:05:11	97.12	00:05:14	98.08	00:00:03	0.96
00:05:14	98.08	00:05:20	100	00:00:06	1.92

THEME IN	%	THEME OUT	%	DURATION	%
00:00:10	0.64	00:00:23	4.81	00:00:13	4.17
00:00:27	6.09	00:00:42	10.90	00:00:15	4.81
00:00:48	12.82	00:01:02	17.31	00:00:14	4.49
00:01:44	30.77	00:01:46	31.41	00:00:02	0.64

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:08	0	00:00:16	2.56	00:00:08	2.56
T	00:00:16	2.56	00:01:50	32.69	00:01:34	30.13
CtT	00:01:50	32.69	00:02:02	36.54	00:00:12	3.85
JB	00:02:02	36.54	00:03:37	66.99	00:01:35	30.45
JC	00:03:37	66.99	00:04:25	82.37	00:00:48	15.38
AiL	00:04:25	82.37	00:04:48	89.74	00:00:23	7.37
FP	00:04:48	89.74	00:05:20	100	00:00:32	10.26
A: S	-	-	-	-	-	-

La Luna (2011)
Directed by Enrico Casarosa
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:18	2.16	00:01:06	15.09	00:00:48	12.94
00:01:29	21.29	00:03:28	53.37	00:01:59	32.08
00:03:29	53.64	00:04:17	66.58	00:00:48	12.94
00:04:38	72.24	00:04:54	76.55	00:00:16	4.31
00:04:56	77.09	00:06:21	100	00:01:25	22.91

MOTIF #	MOTIF IN	%	MOTIF OUT	%	DURATION	%
1	00:00:18	2.16	00:00:44	9.16	00:00:26	7.01
2	00:00:45	9.43	00:01:03	14.29	00:00:18	4.85
3	00:01:41	24.53	00:01:51	27.22	00:00:10	2.70
3	00:02:38	39.89	00:02:55	44.47	00:00:17	4.58
2	00:03:37	55.80	00:04:17	66.58	00:00:40	10.78
3	00:05:21	83.83	00:05:29	85.98	00:00:08	2.16
3	00:05:37	88.14	00:05:44	90.03	00:00:07	1.89
1	00:05:59	94.07	00:06:15	98.38	00:00:16	4.31

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:49	0	00:08:52	7.55	00:08:03	7.55
T	00:08:52	7.55	00:23:26	21.20	00:14:34	13.66
CtT	00:23:26	21.20	00:25:05	22.75	00:01:39	1.55
JB	00:25:05	22.75	01:14:38	69.20	00:49:33	46.45
JC	01:14:38	69.20	01:26:00	79.86	00:11:22	10.66
AiL	01:26:00	79.86	01:26:36	80.42	00:00:36	0.56
FP	01:26:36	80.42	01:44:37	97.31	00:18:01	16.89
A: S	01:44:37	97.31	01:45:35	98.22	00:00:58	0.91
A: L	01:45:35	98.22	01:47:29	100	00:01:54	1.78

APPENDIX II: Feature Film Timing Data

Inside Out (2015)
Directed by Pete Docter
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:45	0	00:07:23	7.75	00:06:38	7.75
00:07:32	7.93	00:08:55	9.55	00:01:23	1.62
00:10:12	11.05	00:10:43	11.65	00:00:31	0.60
00:11:19	12.35	00:11:25	12.47	00:00:06	0.12
00:11:35	12.66	00:12:24	13.62	00:00:49	0.95
00:14:10	15.68	00:14:58	16.62	00:00:48	0.94
00:15:10	16.85	00:15:43	17.49	00:00:33	0.64
00:16:30	18.41	00:17:11	19.21	00:00:41	0.80
00:18:26	20.67	00:18:56	21.25	00:00:30	0.58
00:19:10	21.53	00:20:01	22.52	00:00:51	0.99
00:20:01	22.52	00:20:14	22.77	00:00:13	0.25
00:20:14	22.77	00:22:13	25.09	00:01:59	2.32
00:23:30	26.59	00:24:57	28.29	00:01:27	1.69
00:25:02	28.38	00:25:18	28.70	00:00:16	0.31
00:25:20	28.74	00:26:45	30.39	00:01:25	1.66
00:26:56	30.61	00:27:11	30.90	00:00:15	0.29
00:28:56	32.94	00:29:56	34.11	00:01:00	1.17
00:30:00	34.19	00:30:06	34.31	00:00:06	0.12
00:30:10	34.39	00:30:49	35.15	00:00:39	0.76
00:31:14	35.63	00:32:19	36.90	00:01:05	1.27
00:33:09	37.87	00:33:31	38.30	00:00:22	0.43
00:33:46	38.59	00:34:22	39.29	00:00:36	0.70
00:34:45	39.74	00:35:32	40.66	00:00:47	0.92
00:35:32	40.66	00:35:58	41.17	00:00:26	0.51
00:36:59	42.35	00:37:28	42.92	00:00:29	0.56
00:37:41	43.17	00:37:56	43.46	00:00:15	0.29
00:38:13	43.80	00:39:55	45.78	00:01:42	1.99
00:40:25	46.37	00:41:26	47.56	00:01:01	1.19
00:41:55	48.12	00:43:36	50.09	00:01:41	1.97
00:43:54	50.44	00:45:19	52.09	00:01:25	1.66
00:45:42	52.54	00:46:16	53.20	00:00:34	0.66
00:47:24	54.53	00:47:52	55.08	00:00:28	0.55
00:48:31	55.83	00:49:57	57.51	00:01:26	1.68
00:50:34	58.23	00:51:12	58.97	00:00:38	0.74
00:51:12	58.97	00:51:16	59.05	00:00:04	0.08
00:51:16	59.05	00:51:33	59.38	00:00:17	0.33
00:51:39	59.50	00:53:40	61.85	00:02:01	2.36
00:53:40	61.85	00:54:22	62.67	00:00:42	0.82
00:54:29	62.81	00:55:33	64.06	00:01:04	1.25
00:55:45	64.29	00:56:37	65.30	00:00:52	1.01
00:56:40	65.36	00:57:20	66.14	00:00:40	0.78
00:57:25	66.24	00:59:24	68.56	00:01:59	2.32
00:59:24	68.56	00:59:34	68.75	00:00:10	0.19
00:59:34	68.75	00:59:41	68.89	00:00:07	0.14
00:59:42	68.91	01:00:03	69.32	00:00:21	0.41
01:00:20	69.65	01:00:52	70.27	00:00:32	0.62
01:00:57	70.37	01:01:09	70.60	00:00:12	0.23
01:01:09	70.60	01:01:13	70.68	00:00:04	0.08
01:01:13	70.68	01:01:20	70.82	00:00:07	0.14
01:02:38	72.34	01:03:57	73.87	00:01:19	1.54
01:04:03	73.99	01:06:57	77.38	00:02:54	3.39
01:07:31	78.04	01:10:28	81.49	00:02:57	3.45
01:10:46	81.84	01:13:41	85.25	00:02:55	3.41
01:13:51	85.45	01:18:20	90.69	00:04:29	5.24
01:18:29	90.86	01:18:46	91.19	00:00:17	0.33
01:18:52	91.31	01:20:01	92.66	00:01:09	1.34
01:20:07	92.77	01:23:08	96.30	00:03:01	3.53
01:23:12	96.38	01:26:18	100	00:03:06	3.62

THEME IN	%	THEME OUT	%	DURATION	%
00:02:13	1.71	00:02:41	2.26	00:00:28	0.55
00:02:59	2.61	00:03:21	3.04	00:00:22	0.43
00:19:22	21.76	00:19:56	22.42	00:00:34	0.66
00:20:14	22.77	00:20:38	23.24	00:00:24	0.47
00:21:28	24.22	00:21:41	24.47	00:00:13	0.25
00:21:53	24.70	00:22:07	24.98	00:00:14	0.27
00:34:05	38.96	00:34:20	39.26	00:00:15	0.29
00:45:45	52.60	00:46:07	53.03	00:00:22	0.43
00:49:46	57.30	00:49:50	57.37	00:00:04	0.08
01:11:02	82.15	01:11:16	82.43	00:00:14	0.27
01:11:22	82.54	01:11:34	82.78	00:00:12	0.23
01:11:50	83.09	01:11:54	83.17	00:00:04	0.08
01:23:12	96.38	01:23:51	97.14	00:00:39	0.76
01:25:43	99.32	01:26:15	99.94	00:00:32	0.62

HARMONY IN	%	HARMONY OUT	%	DURATION	%
00:00:47	0.04	00:00:58	0.25	00:00:11	0.21
00:01:02	0.33	00:01:58	1.42	00:00:56	1.09
00:02:00	1.46	00:02:41	2.26	00:00:41	0.80
00:03:21	3.04	00:04:03	3.86	00:00:42	0.82
00:19:10	21.53	00:19:22	21.76	00:00:12	0.23
00:19:56	22.42	00:21:08	23.83	00:01:12	1.40
00:21:41	24.47	00:22:07	24.98	00:00:36	0.70
00:33:46	38.59	00:34:05	38.96	00:00:19	0.37
00:34:20	39.26	00:34:22	39.29	00:00:02	0.04
01:10:59	82.10	01:11:02	82.15	00:00:03	0.06
01:23:51	97.14	01:23:56	97.23	00:00:05	0.10
01:25:40	99.26	01:25:43	99.32	00:00:03	0.06
01:26:15	99.94	01:26:18	100	00:00:03	0.06

SECONDARY THEME IN	%	SECONDARY THEME OUT	%	DURATION	%
00:04:42	4.62	00:07:23	7.75	00:02:41	3.14
00:07:32	7.93	00:08:55	9.55	00:01:23	1.62
00:10:12	11.05	00:10:43	11.65	00:00:31	0.60
00:11:19	12.35	00:11:25	12.47	00:00:06	0.12
00:11:35	12.66	00:12:20	13.54	00:00:45	0.88
01:08:11	78.82	01:09:11	79.99	00:01:00	1.17
01:09:44	80.64	01:10:09	81.12	00:00:25	0.49
01:23:56	97.23	01:25:35	99.16	00:01:39	1.93

SADNESS THEME IN	%	SADNESS THEME OUT	%	DURATION	%
00:02:43	2.30	00:02:58	2.59	00:00:15	0.29
00:04:18	4.15	00:04:37	4.52	00:00:19	0.37
00:14:20	15.88	00:14:42	16.31	00:00:22	0.43
00:15:38	17.40	00:15:42	17.48	00:00:04	0.08
00:21:14	23.94	00:21:28	24.22	00:00:14	0.27

SADNESS HARMONY IN	%	SADNESS HARMONY OUT	%	DURATION	%
00:15:10	16.85	00:15:43	17.49	00:00:33	0.64
00:16:30	18.41	00:16:47	18.74	00:00:17	0.33
00:16:50	18.80	00:17:11	19.21	00:00:21	0.41
00:21:08	23.83	00:21:28	24.22	00:00:20	0.39
00:31:48	36.29	00:32:17	36.86	00:00:29	0.56
00:48:47	56.15	00:49:35	57.08	00:00:48	0.94
00:49:39	57.16	00:49:50	57.37	00:00:11	0.21
01:13:05	84.55	01:13:28	85.00	00:00:23	0.45
01:20:20	93.03	01:20:50	93.61	00:00:30	0.58
01:20:54	93.69	01:21:29	94.37	00:00:35	0.68
01:21:33	94.45	01:22:43	95.81	00:01:10	1.36

FPO IN	%	FPO OUT	%	DURATION	%
01:04:03	73.99	01:04:46	74.83	00:00:43	0.84
01:05:05	75.20	01:05:29	75.67	00:00:24	0.47
01:05:52	76.12	01:06:31	76.88	00:00:39	0.76
01:13:51	85.45	01:14:40	86.40	00:00:49	0.95
01:14:45	86.50	01:14:53	86.65	00:00:08	0.16
01:15:08	86.95	01:15:38	87.53	00:00:30	0.58
01:15:41	87.59	01:15:45	87.67	00:00:04	0.08
01:15:58	87.92	01:16:27	88.49	00:00:29	0.56
01:16:36	88.66	01:16:57	89.07	00:00:21	0.41
01:16:59	89.11	01:17:10	89.32	00:00:11	0.21
01:17:15	89.42	01:17:25	89.62	00:00:10	0.19

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:45	0	00:08:48	9.41	00:08:03	9.41
T	00:08:48	9.41	00:25:20	28.74	00:16:32	19.33
CtT	00:25:20	28.74	00:25:37	29.07	00:00:17	0.33
JB	00:25:37	29.07	00:49:39	57.16	00:24:02	28.09
JC	00:49:39	57.16	01:07:42	78.26	00:18:03	21.10
AiL	01:07:42	78.26	01:13:51	85.45	00:06:09	7.19
FP	01:13:51	85.45	01:23:56	97.23	00:10:05	11.79
A: S	-	-	-	-	-	-
A: L	01:23:56	97.23	01:26:18	100	00:02:22	2.77

Cars 2 (2011)
Directed by John Lasseter
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:49	0.11	00:04:31	4.06	00:03:42	3.95
00:04:36	4.15	00:05:39	5.27	00:01:03	1.12
00:05:44	5.36	00:06:46	6.47	00:01:02	1.10
00:07:01	6.73	00:07:23	7.13	00:00:22	0.39
00:07:27	7.20	00:09:05	8.94	00:01:38	1.75
00:09:15	9.12	00:11:43	11.76	00:02:28	2.64
00:11:43	11.76	00:13:21	13.50	00:01:38	1.75
00:14:48	15.05	00:14:53	15.14	00:00:05	0.09
00:16:22	16.73	00:17:06	17.51	00:00:44	0.78
00:17:06	17.51	00:19:14	19.79	00:02:08	2.28
00:19:14	19.79	00:19:39	20.24	00:00:25	0.45
00:19:41	20.27	00:21:59	22.73	00:02:18	2.46
00:21:59	22.73	00:22:36	23.39	00:00:37	0.66
00:23:06	23.92	00:24:19	25.22	00:01:13	1.30
00:24:57	25.90	00:25:39	26.65	00:00:42	0.75
00:25:49	26.83	00:26:16	27.31	00:00:27	0.48
00:26:16	27.31	00:27:21	28.46	00:01:05	1.16
00:27:21	28.46	00:27:28	28.59	00:00:07	0.12
00:27:37	28.75	00:28:01	29.18	00:00:24	0.43
00:28:20	29.52	00:29:16	30.51	00:00:56	1.00
00:29:16	30.51	00:31:18	32.69	00:02:02	2.17
00:31:22	32.76	00:32:50	34.32	00:01:28	1.57
00:33:10	34.68	00:33:14	34.75	00:00:04	0.07
00:33:53	35.45	00:36:50	38.60	00:02:57	3.15
00:36:53	38.65	00:39:05	41.00	00:02:12	2.35
00:40:12	42.20	00:40:39	42.68	00:00:27	0.48
00:40:39	42.68	00:41:09	43.21	00:00:30	0.53
00:41:09	43.21	00:41:29	43.57	00:00:20	0.36
00:41:35	43.68	00:44:07	46.38	00:02:32	2.71
00:44:09	46.42	00:44:25	46.70	00:00:16	0.29
00:46:45	49.20	00:47:44	50.25	00:00:59	1.05
00:47:46	50.29	00:49:00	51.60	00:01:14	1.32
00:49:04	51.67	00:49:13	51.83	00:00:09	0.16
00:49:14	51.85	00:49:45	52.40	00:00:31	0.55
00:50:27	53.15	00:53:10	56.06	00:02:43	2.90
00:53:10	56.06	00:55:15	58.28	00:02:05	2.23

00:55:22	58.41	00:56:04	59.16	00:00:42	0.75
00:56:09	59.24	00:56:58	60.12	00:00:49	0.87
00:57:05	60.24	00:58:24	61.65	00:01:19	1.41
00:59:16	62.58	01:00:56	64.36	00:01:40	1.78
01:01:00	64.43	01:01:52	65.35	00:00:52	0.93
01:02:41	66.23	01:03:08	66.71	00:00:27	0.48
01:03:14	66.82	01:06:36	70.41	00:03:22	3.60
01:06:49	70.64	01:08:36	72.55	00:01:47	1.91
01:08:42	72.66	01:09:33	73.57	00:00:51	0.91
01:10:00	74.05	01:12:17	76.49	00:02:17	2.44
01:12:23	76.59	01:12:43	76.95	00:00:20	0.36
01:13:03	77.31	01:13:40	77.97	00:00:37	0.66
01:14:20	78.68	01:15:11	79.59	00:00:51	0.91
01:15:13	79.62	01:18:28	83.10	00:03:15	3.47
01:18:29	83.11	01:19:36	84.31	00:01:07	1.19
01:19:39	84.36	01:21:46	86.62	00:02:07	2.26
01:21:48	86.66	01:22:10	87.05	00:00:22	0.39
01:22:20	87.23	01:23:01	87.96	00:00:41	0.73
01:23:07	88.07	01:25:42	90.83	00:02:35	2.76
01:25:48	90.93	01:27:38	92.89	00:01:50	1.96
01:27:46	93.04	01:28:31	93.84	00:00:45	0.80
01:28:54	94.25	01:29:22	94.75	00:00:28	0.50
01:29:24	94.78	01:29:50	95.24	00:00:26	0.46
01:29:57	95.37	01:33:33	99.22	00:03:36	3.85
01:33:36	99.27	01:34:17	100	00:00:41	0.73

THEME IN	%	THEME OUT	%	DURATION	%
00:01:12	0.52	00:01:26	0.77	00:00:14	0.25
00:01:51	1.21	00:01:53	1.25	00:00:02	0.04
00:04:53	4.45	00:05:04	4.65	00:00:11	0.20
00:05:06	4.68	00:05:08	4.72	00:00:02	0.04
00:05:18	4.90	00:05:30	5.11	00:00:12	0.21
00:05:44	5.36	00:05:48	5.43	00:00:04	0.07
00:05:54	5.54	00:05:56	5.58	00:00:02	0.04
00:06:10	5.82	00:06:21	6.02	00:00:11	0.20
00:07:12	6.93	00:07:15	6.98	00:00:03	0.05
00:21:59	22.73	00:22:13	22.98	00:00:14	0.25
00:22:15	23.01	00:22:32	23.32	00:00:17	0.30
00:26:32	27.59	00:26:35	27.65	00:00:03	0.05
00:33:53	35.45	00:34:07	35.70	00:00:14	0.25
00:34:47	36.41	00:35:00	36.64	00:00:13	0.23
00:38:14	40.10	00:38:19	40.19	00:00:05	0.09
00:38:22	40.24	00:38:35	40.47	00:00:13	0.23
00:39:00	40.92	00:39:03	40.97	00:00:03	0.05
00:41:51	43.96	00:42:13	44.35	00:00:22	0.39
00:42:38	44.80	00:42:43	44.89	00:00:05	0.09
00:42:44	44.91	00:42:49	44.99	00:00:05	0.09
00:44:14	46.51	00:44:19	46.60	00:00:05	0.09
00:46:46	49.22	00:46:48	49.25	00:00:02	0.04
00:46:52	49.32	00:46:57	49.41	00:00:05	0.09
00:46:58	49.43	00:47:32	50.04	00:00:34	0.61
00:47:38	50.14	00:47:41	50.20	00:00:03	0.05
00:52:31	55.36	00:52:33	55.40	00:00:02	0.04
01:20:16	85.02	01:20:26	85.20	00:00:10	0.18
01:20:41	85.46	01:20:51	85.64	00:00:10	0.18
01:20:55	85.71	01:21:15	86.07	00:00:20	0.36
01:23:29	88.46	01:23:50	88.83	00:00:21	0.37
01:24:58	90.04	01:25:07	90.20	00:00:09	0.16
01:25:10	90.26	01:25:14	90.33	00:00:04	0.07
01:25:15	90.35	01:25:20	90.43	00:00:05	0.09
01:25:21	90.45	01:25:28	90.58	00:00:07	0.12
01:25:30	90.61	01:25:34	90.68	00:00:04	0.07
01:29:27	94.83	01:29:47	95.19	00:00:20	0.36
01:30:20	95.78	01:30:35	96.05	00:00:15	0.27
01:30:42	96.17	01:30:44	96.21	00:00:02	0.04
01:30:47	96.26	01:30:49	96.29	00:00:02	0.04
01:32:47	98.40	01:33:05	98.72	00:00:18	0.32
01:33:37	99.29	01:33:47	99.47	00:00:10	0.18

01:33:49	99.50	01:33:59	99.68	00:00:10	0.18
01:34:04	99.77	01:34:09	99.86	00:00:05	0.09
01:34:11	99.89	01:34:15	99.96	00:00:04	0.07

FPO IN	%	FPO OUT	%	DURATION	%
01:16:31	81.01	01:16:33	81.05	00:00:02	0.04

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:43	0	00:07:25	7.16	00:06:42	7.16
T	00:07:25	7.16	00:17:06	17.51	00:09:41	10.35
CtT	00:17:06	17.51	00:19:14	19.79	00:02:08	2.28
JB	00:19:14	19.79	00:47:47	50.30	00:28:33	30.51
JC	00:47:47	50.30	01:12:45	76.99	00:24:58	26.68
AiL	01:12:45	76.99	01:16:30	80.99	00:03:45	4.01
FP	01:16:30	80.99	01:28:03	93.34	00:11:33	12.34
A: S	01:28:03	93.34	01:28:54	94.25	00:00:51	0.91
A: L	01:28:54	94.25	01:34:17	100	00:05:23	5.75

Up (2009)
Directed by Pete Docter
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:45	0	00:02:39	2.15	00:01:54	2.15
00:02:39	2.15	00:03:15	2.83	00:00:36	0.68
00:03:33	3.17	00:03:59	3.66	00:00:26	0.49
00:04:32	4.28	00:05:04	4.89	00:00:32	0.60
00:05:27	5.32	00:06:56	7.00	00:01:29	1.68
00:07:15	7.36	00:11:36	12.29	00:04:21	4.93
00:12:06	12.85	00:12:29	13.29	00:00:23	0.43
00:15:25	16.61	00:15:54	17.16	00:00:29	0.55
00:15:59	17.25	00:16:45	18.12	00:00:46	0.87
00:16:46	18.14	00:16:51	18.23	00:00:05	0.09
00:16:54	18.29	00:16:59	18.38	00:00:05	0.09
00:17:01	18.42	00:17:34	19.04	00:00:33	0.62
00:17:52	19.38	00:17:55	19.44	00:00:03	0.06
00:17:57	19.48	00:18:56	20.59	00:00:59	1.11
00:19:15	20.95	00:20:24	22.25	00:01:09	1.30
00:21:09	23.10	00:24:10	26.52	00:03:01	3.42
00:25:16	27.77	00:26:00	28.60	00:00:44	0.83
00:26:17	28.92	00:26:30	29.16	00:00:13	0.25
00:26:49	29.52	00:28:01	30.88	00:01:12	1.36
00:28:42	31.65	00:28:51	31.82	00:00:09	0.17
00:29:22	32.41	00:30:30	33.69	00:01:08	1.28
00:30:34	33.77	00:30:46	33.99	00:00:12	0.23
00:31:13	34.50	00:32:09	35.56	00:00:56	1.06
00:34:04	37.73	00:35:13	39.03	00:01:09	1.30
00:35:21	39.18	00:36:07	40.05	00:00:46	0.87
00:36:22	40.34	00:36:26	40.41	00:00:04	0.08
00:37:14	41.32	00:37:32	41.66	00:00:18	0.34
00:37:58	42.15	00:39:09	43.49	00:01:11	1.34
00:39:36	44.00	00:40:09	44.62	00:00:33	0.62
00:41:16	45.89	00:41:32	46.19	00:00:16	0.30
00:41:34	46.22	00:42:21	47.11	00:00:47	0.89
00:42:31	47.30	00:43:17	48.17	00:00:46	0.87
00:44:02	49.02	00:44:42	49.77	00:00:40	0.76
00:45:39	50.85	00:46:07	51.38	00:00:28	0.53
00:48:20	53.89	00:49:22	55.06	00:01:02	1.17
00:50:27	56.29	00:50:54	56.80	00:00:27	0.51
00:51:07	57.04	00:53:07	59.31	00:02:00	2.27
00:54:34	60.95	00:55:24	61.89	00:00:50	0.94
00:55:24	61.89	00:57:22	64.12	00:01:58	2.23
00:57:32	64.31	00:58:09	65.01	00:00:37	0.70
00:58:56	65.89	01:00:16	67.40	00:01:20	1.51
01:00:21	67.50	01:03:00	70.50	00:02:39	3.00

01:03:26	70.99	01:04:20	72.01	00:00:54	1.02
01:06:03	73.95	01:07:55	76.07	00:01:52	2.11
01:08:48	77.07	01:09:27	77.80	00:00:39	0.74
01:10:27	78.94	01:11:00	79.56	00:00:33	0.62
01:11:28	80.09	01:13:35	82.48	00:02:07	2.40
01:13:41	82.60	01:13:56	82.88	00:00:15	0.28
01:14:06	83.07	01:15:07	84.22	00:01:01	1.15
01:15:10	84.28	01:18:36	88.17	00:03:26	3.89
01:18:57	88.56	01:19:21	89.01	00:00:24	0.45
01:19:43	89.43	01:23:12	93.37	00:03:29	3.94
01:23:13	93.39	01:24:56	95.34	00:01:43	1.94
01:24:58	95.38	01:25:07	95.55	00:00:09	0.17
01:25:32	96.02	01:27:24	98.13	00:01:52	2.11
01:27:35	98.34	01:29:00	99.94	00:01:25	1.60

THEME IN	%	THEME OUT	%	DURATION	%
00:04:42	4.47	00:05:04	4.89	00:00:22	0.42
00:06:13	6.19	00:06:14	6.21	00:00:01	0.02
00:06:43	6.76	00:06:47	6.83	00:00:04	0.08
00:07:30	7.64	00:08:00	8.21	00:00:30	0.57
00:08:15	8.49	00:08:35	8.87	00:00:20	0.38
00:08:39	8.95	00:08:42	9.00	00:00:03	0.06
00:08:47	9.10	00:09:13	9.59	00:00:26	0.49
00:09:14	9.61	00:09:29	9.89	00:00:15	0.28
00:09:51	10.31	00:10:08	10.63	00:00:17	0.32
00:10:26	10.97	00:10:35	11.14	00:00:09	0.17
00:10:44	11.31	00:11:21	12.00	00:00:37	0.70
00:19:32	21.27	00:20:06	21.91	00:00:34	0.64
00:21:55	23.97	00:22:53	25.07	00:00:58	1.09
00:23:39	25.93	00:24:06	26.44	00:00:27	0.51
00:39:36	44.00	00:39:49	44.24	00:00:13	0.25
01:00:54	68.12	01:00:58	68.20	00:00:04	0.08
01:06:09	74.07	01:06:13	74.14	00:00:04	0.08
01:06:15	74.18	01:06:18	74.24	00:00:03	0.06
01:06:20	74.27	01:06:28	74.42	00:00:08	0.15
01:12:07	80.82	01:12:45	81.54	00:00:38	0.72
01:13:18	82.16	01:13:26	82.31	00:00:08	0.15
01:14:43	83.77	01:15:00	84.09	00:00:17	0.32
01:17:09	86.52	01:17:15	86.64	00:00:06	0.11
01:23:38	93.87	01:23:55	94.19	00:00:17	0.32
01:24:21	94.68	01:24:24	94.73	00:00:03	0.06
01:26:41	97.32	01:27:00	97.68	00:00:19	0.36
01:27:43	98.49	01:28:46	99.68	00:01:03	1.19

FPO IN	%	FPO OUT	%	DURATION	%
01:14:07	83.09	01:14:24	83.41	00:00:17	0.32
01:14:36	83.64	01:14:40	83.71	00:00:04	0.08
01:14:44	83.79	01:15:04	84.16	00:00:20	0.38
01:17:23	86.79	01:17:28	86.88	00:00:05	0.09
01:17:36	87.03	01:18:12	87.71	00:00:36	0.68
01:18:16	87.79	01:18:28	88.01	00:00:12	0.23
01:18:29	88.03	01:18:36	88.17	00:00:07	0.13

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:45	0	00:11:36	12.29	00:10:51	12.29
T	00:11:36	12.29	00:21:09	23.10	00:09:33	10.82
CtT	00:21:09	23.10	00:24:10	26.52	00:03:01	3.42
JB	00:24:10	26.52	00:49:19	55.00	00:25:09	28.48
JC	00:49:19	55.00	01:11:06	79.67	00:21:47	24.67
AiL	01:11:06	79.67	01:14:07	83.09	00:03:01	3.42
FP	01:14:07	83.09	01:26:02	96.58	00:11:55	13.50
A: S	01:26:02	96.58	01:27:00	97.68	00:00:58	1.09
A: L	01:27:00	97.68	01:29:03	100	00:02:03	2.32

The Incredibles (2004)
Directed by Brad Bird
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:02:03	1.48	00:03:08	2.49	00:01:05	1.01
00:03:16	2.61	00:04:28	3.73	00:01:12	1.12
00:04:33	3.81	00:05:46	4.95	00:01:13	1.14
00:05:52	5.04	00:06:41	5.80	00:00:49	0.76
00:06:43	5.84	00:07:39	6.71	00:00:56	0.87
00:07:41	6.74	00:07:57	6.99	00:00:16	0.25
00:08:07	7.14	00:08:22	7.38	00:00:15	0.23
00:08:24	7.41	00:08:41	7.67	00:00:17	0.26
00:09:15	8.20	00:10:00	8.90	00:00:45	0.70
00:10:00	8.90	00:10:11	9.07	00:00:11	0.17
00:10:11	9.07	00:11:34	10.36	00:01:23	1.29
00:15:45	14.27	00:16:16	14.75	00:00:31	0.48
00:19:17	17.57	00:19:28	17.74	00:00:11	0.17
00:21:29	19.62	00:21:35	19.72	00:00:06	0.09
00:22:15	20.34	00:22:20	20.42	00:00:05	0.08
00:22:48	20.85	00:23:00	21.04	00:00:12	0.19
00:23:09	21.18	00:23:22	21.38	00:00:13	0.20
00:23:25	21.43	00:23:47	21.77	00:00:22	0.34
00:23:49	21.80	00:25:04	22.97	00:01:15	1.17
00:27:13	24.98	00:27:19	25.07	00:00:06	0.09
00:28:46	26.42	00:29:31	27.12	00:00:45	0.70
00:31:25	28.90	00:33:47	31.11	00:02:22	2.21
00:34:51	32.10	00:36:03	33.22	00:01:12	1.12
00:36:28	33.61	00:37:47	34.84	00:01:19	1.23
00:37:49	34.87	00:38:29	35.50	00:00:40	0.62
00:38:31	35.53	00:38:50	35.82	00:00:19	0.30
00:38:56	35.92	00:39:17	36.24	00:00:21	0.33
00:39:20	36.29	00:39:40	36.60	00:00:20	0.31
00:39:43	36.65	00:39:49	36.74	00:00:06	0.09
00:40:01	36.93	00:42:47	39.51	00:02:46	2.58
00:46:03	42.56	00:46:44	43.20	00:00:41	0.64
00:47:01	43.46	00:48:56	45.25	00:01:55	1.79
00:50:27	46.67	00:50:49	47.01	00:00:22	0.34
00:51:06	47.28	00:51:50	47.96	00:00:44	0.68
00:51:55	48.04	00:52:50	48.90	00:00:55	0.86
00:53:03	49.10	00:54:04	50.05	00:01:01	0.95
00:57:10	52.94	01:00:04	55.65	00:02:54	2.71
01:00:10	55.74	01:02:50	58.23	00:02:40	2.49
01:03:11	58.56	01:05:25	60.64	00:02:14	2.09
01:06:00	61.19	01:07:17	62.39	00:01:17	1.20
01:08:21	63.38	01:10:23	65.28	00:02:02	1.90
01:11:13	66.06	01:12:19	67.09	00:01:06	1.03
01:12:34	67.32	01:13:45	68.43	00:01:11	1.10
01:15:22	69.93	01:15:44	70.28	00:00:22	0.34
01:15:45	70.29	01:19:23	73.69	00:03:38	3.39
01:20:03	74.31	01:22:21	76.46	00:02:18	2.15
01:22:24	76.50	01:27:03	80.84	00:04:39	4.34
01:27:06	80.89	01:27:32	81.29	00:00:26	0.40
01:27:36	81.36	01:29:06	82.76	00:01:30	1.40
01:29:09	82.80	01:32:08	85.59	00:02:59	2.79
01:32:12	85.65	01:32:48	86.21	00:00:36	0.56
01:32:48	86.21	01:33:34	86.93	00:00:46	0.72
01:33:34	86.93	01:35:53	89.09	00:02:19	2.16
01:36:02	89.23	01:36:12	89.39	00:00:10	0.16
01:36:14	89.42	01:37:11	90.31	00:00:57	0.89
01:37:18	90.41	01:38:19	91.36	00:01:01	0.95
01:38:21	91.39	01:39:14	92.22	00:00:53	0.82
01:39:16	92.25	01:39:21	92.33	00:00:05	0.08
01:39:22	92.34	01:39:38	92.59	00:00:16	0.25
01:39:41	92.64	01:41:12	94.06	00:01:31	1.42
01:41:16	94.12	01:41:25	94.26	00:00:09	0.14
01:41:30	94.34	01:44:52	97.48	00:03:22	3.14
01:45:02	97.63	01:45:24	97.98	00:00:22	0.34

01:45:38	98.19	01:46:30	99.00	00:00:52	0.81
01:47:00	99.47	01:47:34	100	00:00:34	0.53

MOTIF #	MOTIF IN	%	MOTIF OUT	%	DURATION	%
1	00:02:04	1.49	00:02:09	1.57	00:00:05	0.08
2	00:02:09	1.57	00:02:10	1.59	00:00:01	0.02
3	00:02:21	1.76	00:02:32	1.93	00:00:11	0.17
1	00:02:45	2.13	00:02:49	2.19	00:00:04	0.06
1	00:02:52	2.24	00:02:55	2.29	00:00:03	0.05
1	00:03:22	2.71	00:03:26	2.77	00:00:04	0.06
3	00:03:48	3.11	00:04:01	3.31	00:00:13	0.20
3	00:04:44	3.98	00:04:46	4.01	00:00:02	0.03
3	00:05:58	5.14	00:06:02	5.20	00:00:04	0.06
3	00:06:04	5.23	00:06:10	5.32	00:00:06	0.09
1	00:08:07	7.14	00:08:12	7.22	00:00:05	0.08
1	00:08:15	7.27	00:08:20	7.35	00:00:05	0.08
1	00:10:01	8.92	00:10:07	9.01	00:00:06	0.09
1	00:24:18	22.25	00:24:24	22.35	00:00:06	0.09
1	00:24:26	22.38	00:24:30	22.44	00:00:04	0.06
1	00:24:35	22.52	00:24:39	22.58	00:00:04	0.06
3	00:24:40	22.60	00:24:43	22.64	00:00:03	0.05
3	00:24:45	22.67	00:24:48	22.72	00:00:03	0.05
3	00:24:51	22.77	00:24:53	22.80	00:00:02	0.03
1	00:29:03	26.69	00:29:06	26.74	00:00:03	0.05
1	00:33:16	30.63	00:33:26	30.78	00:00:10	0.16
1	00:33:29	30.83	00:33:35	30.92	00:00:06	0.09
1	00:35:32	32.74	00:35:39	32.85	00:00:07	0.11
1	00:35:47	32.98	00:35:51	33.04	00:00:04	0.06
2	01:04:01	59.34	01:04:03	59.37	00:00:02	0.03
1	01:13:27	68.15	01:13:36	68.29	00:00:09	0.14
1	01:15:31	70.07	01:15:39	70.20	00:00:08	0.12
2	01:28:26	82.14	01:28:30	82.20	00:00:04	0.06
1	01:28:31	82.21	01:28:35	82.28	00:00:04	0.06
1	01:28:39	82.34	01:28:44	82.42	00:00:05	0.08
2	01:28:54	82.57	01:28:55	82.59	00:00:01	0.02
2	01:28:57	82.62	01:28:59	82.65	00:00:02	0.03
1	01:28:59	82.65	01:29:01	82.68	00:00:02	0.03
2	01:29:02	82.70	01:29:04	82.73	00:00:02	0.03
2	01:31:37	85.11	01:31:40	85.15	00:00:03	0.05
1	01:31:40	85.15	01:31:43	85.20	00:00:03	0.05
1	01:32:29	85.92	01:32:35	86.01	00:00:06	0.09
1	01:32:37	86.04	01:32:40	86.09	00:00:03	0.05
1	01:36:15	89.43	01:36:24	89.57	00:00:09	0.14
1	01:36:27	89.62	01:36:36	89.76	00:00:09	0.14
1	01:36:44	89.88	01:36:52	90.01	00:00:08	0.12
1	01:36:54	90.04	01:36:59	90.12	00:00:05	0.08
4	01:37:26	90.54	01:37:31	90.62	00:00:05	0.08
4	01:37:35	90.68	01:37:38	90.73	00:00:03	0.05
4	01:37:41	90.77	01:37:43	90.80	00:00:02	0.03
3	01:37:46	90.85	01:37:48	90.88	00:00:02	0.03
4	01:37:51	90.93	01:38:09	91.21	00:00:18	0.28
3	01:38:14	91.29	01:38:17	91.33	00:00:03	0.05
2	01:38:34	91.60	01:38:36	91.63	00:00:02	0.03
1	01:38:41	91.71	01:38:45	91.77	00:00:04	0.06
1	01:38:56	91.94	01:38:59	91.99	00:00:03	0.05
1	01:39:01	92.02	01:39:04	92.06	00:00:03	0.05
2	01:40:48	93.68	01:40:51	93.73	00:00:03	0.05
1	01:42:55	95.66	01:43:00	95.74	00:00:05	0.08
1	01:43:03	95.78	01:43:08	95.86	00:00:05	0.08
1	01:43:11	95.91	01:43:16	95.99	00:00:05	0.08
3	01:44:01	96.69	01:44:21	97.00	00:00:20	0.31
3	01:44:22	97.01	01:44:27	97.09	00:00:05	0.08
2	01:44:34	97.20	01:44:36	97.23	00:00:02	0.03
1	01:44:36	97.23	01:44:39	97.28	00:00:03	0.05
4	01:44:44	97.35	01:44:48	97.42	00:00:04	0.06
2	01:45:03	97.65	01:45:05	97.68	00:00:02	0.03
2	01:45:07	97.71	01:45:09	97.74	00:00:02	0.03

1	01:45:10	97.76	01:45:12	97.79	00:00:02	0.03
1	01:45:38	98.19	01:45:47	98.33	00:00:09	0.14
1	01:45:50	98.38	01:45:59	98.52	00:00:09	0.14
1	01:46:02	98.57	01:46:12	98.72	00:00:10	0.16
1	01:46:15	98.77	01:46:21	98.86	00:00:06	0.09
2	01:47:26	99.88	01:47:29	99.92	00:00:03	0.05
1	01:47:29	99.92	01:47:32	99.97	00:00:03	0.05

FPO IN	%	FPO OUT	%	DURATION	%
01:31:37	85.11	01:31:58	85.43	00:00:21	0.33
01:32:15	85.70	01:32:29	85.92	00:00:14	0.22

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:28	0	00:11:34	10.36	00:11:06	10.36
T	00:11:34	10.36	00:34:56	32.18	00:23:22	21.82
CtT	00:34:56	32.18	00:36:29	33.63	00:01:33	1.45
JB	00:36:29	33.63	01:02:51	58.25	00:26:22	24.62
JC	01:02:51	58.25	01:31:05	84.61	00:28:14	26.36
AiL	01:31:05	84.61	01:31:37	85.11	00:00:32	0.50
FP	01:31:37	85.11	01:45:38	98.19	00:14:01	13.09
A: S	-	-	-	-	-	-
A: L	01:45:38	98.19	01:47:34	100	00:01:56	1.81

Incredibles 2 (2018)
Directed by Brad Bird
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:01:06	0.27	00:01:30	0.64	00:00:24	0.38
00:01:33	0.69	00:02:26	1.52	00:00:53	0.83
00:02:27	1.53	00:02:28	1.55	00:00:01	0.02
00:02:29	1.56	00:02:40	1.73	00:00:11	0.17
00:02:53	1.94	00:03:09	2.19	00:00:16	0.25
00:03:11	2.22	00:03:47	2.78	00:00:36	0.56
00:03:53	2.88	00:04:17	3.25	00:00:24	0.38
00:04:18	3.27	00:04:38	3.58	00:00:20	0.31
00:04:40	3.61	00:05:11	4.09	00:00:31	0.48
00:05:12	4.11	00:06:01	4.88	00:00:49	0.77
00:06:02	4.89	00:08:18	7.02	00:02:16	2.13
00:08:31	7.22	00:08:37	7.31	00:00:06	0.09
00:08:40	7.36	00:08:55	7.59	00:00:15	0.23
00:09:22	8.02	00:09:35	8.22	00:00:13	0.20
00:10:31	9.09	00:11:12	9.73	00:00:41	0.64
00:13:24	11.80	00:13:37	12.00	00:00:13	0.20
00:14:17	12.63	00:14:29	12.81	00:00:12	0.19
00:15:11	13.47	00:15:43	13.97	00:00:32	0.50
00:15:43	13.97	00:15:56	14.17	00:00:13	0.20
00:15:56	14.17	00:16:52	15.05	00:00:56	0.88
00:17:27	15.59	00:18:30	16.58	00:01:03	0.98
00:18:46	16.83	00:19:09	17.19	00:00:23	0.36
00:19:23	17.41	00:20:35	18.53	00:01:12	1.13
00:23:24	21.17	00:25:06	22.77	00:01:42	1.59
00:25:09	22.81	00:25:54	23.52	00:00:45	0.70
00:26:12	23.80	00:27:08	24.67	00:00:56	0.87
00:28:06	25.58	00:28:45	26.19	00:00:39	0.61
00:28:57	26.38	00:29:15	26.66	00:00:18	0.28
00:29:43	27.09	00:29:48	27.17	00:00:05	0.08
00:30:51	28.16	00:31:11	28.47	00:00:20	0.31
00:31:13	28.50	00:33:37	30.75	00:02:24	2.25
00:33:39	30.78	00:34:26	31.52	00:00:47	0.73
00:34:50	31.89	00:35:13	32.25	00:00:23	0.36
00:35:33	32.56	00:36:00	32.98	00:00:27	0.42
00:36:27	33.41	00:36:31	33.47	00:00:04	0.06
00:36:42	33.64	00:36:44	33.67	00:00:02	0.03
00:36:46	33.70	00:36:48	33.73	00:00:02	0.03

00:36:51	33.78	00:36:52	33.80	00:00:01	0.02
00:36:55	33.84	00:36:56	33.86	00:00:01	0.02
00:37:01	33.94	00:37:12	34.11	00:00:11	0.17
00:37:13	34.13	00:37:14	34.14	00:00:01	0.02
00:37:16	34.17	00:37:20	34.23	00:00:04	0.06
00:37:22	34.27	00:37:38	34.52	00:00:16	0.25
00:37:39	34.53	00:38:00	34.86	00:00:21	0.33
00:38:04	34.92	00:38:11	35.03	00:00:07	0.11
00:38:14	35.08	00:38:15	35.09	00:00:01	0.02
00:38:19	35.16	00:38:20	35.17	00:00:01	0.02
00:38:22	35.20	00:38:32	35.36	00:00:10	0.16
00:38:35	35.41	00:38:39	35.47	00:00:04	0.06
00:41:08	37.80	00:41:29	38.13	00:00:21	0.33
00:42:13	38.81	00:42:45	39.31	00:00:32	0.50
00:43:33	40.06	00:43:44	40.23	00:00:11	0.17
00:43:48	40.30	00:44:30	40.95	00:00:42	0.66
00:44:30	40.95	00:44:33	41.00	00:00:03	0.05
00:45:03	41.47	00:47:23	43.66	00:02:20	2.19
00:48:57	45.13	00:49:31	45.66	00:00:34	0.53
00:50:41	46.75	00:51:44	47.73	00:01:03	0.98
00:51:44	47.73	00:54:14	50.08	00:02:30	2.34
00:54:55	50.72	00:56:14	51.95	00:01:19	1.23
00:56:14	51.95	00:56:16	51.98	00:00:02	0.03
00:56:27	52.16	00:57:00	52.67	00:00:33	0.52
00:57:01	52.69	01:00:08	55.61	00:03:07	2.92
01:00:10	55.64	01:00:14	55.70	00:00:04	0.06
01:00:18	55.77	01:01:32	56.92	00:01:14	1.16
01:01:37	57.00	01:01:55	57.28	00:00:18	0.28
01:02:25	57.75	01:03:06	58.39	00:00:41	0.64
01:03:07	58.41	01:03:30	58.77	00:00:23	0.36
01:03:35	58.84	01:03:37	58.88	00:00:02	0.03
01:05:02	60.20	01:05:39	60.78	00:00:37	0.58
01:05:43	60.84	01:05:45	60.88	00:00:02	0.03
01:08:31	63.47	01:08:36	63.55	00:00:05	0.08
01:08:38	63.58	01:08:53	63.81	00:00:15	0.23
01:08:55	63.84	01:09:05	64.00	00:00:10	0.16
01:09:17	64.19	01:09:23	64.28	00:00:06	0.09
01:10:04	64.92	01:10:42	65.52	00:00:38	0.59
01:10:42	65.52	01:10:53	65.69	00:00:11	0.17
01:10:53	65.69	01:11:06	65.89	00:00:13	0.20
01:11:06	65.89	01:11:14	66.02	00:00:08	0.12
01:11:14	66.02	01:11:29	66.25	00:00:15	0.23
01:11:45	66.50	01:12:37	67.31	00:00:52	0.81
01:12:41	67.38	01:14:40	69.23	00:01:59	1.86
01:14:40	69.23	01:15:02	69.58	00:00:22	0.34
01:16:28	70.92	01:17:24	71.80	00:00:56	0.87
01:17:59	72.34	01:20:34	74.77	00:02:35	2.42
01:21:29	75.63	01:21:51	75.97	00:00:22	0.34
01:21:51	75.97	01:21:59	76.09	00:00:08	0.12
01:21:59	76.09	01:22:39	76.72	00:00:40	0.63
01:22:40	76.73	01:25:13	79.13	00:02:33	2.39
01:25:14	79.14	01:25:35	79.47	00:00:21	0.33
01:25:36	79.48	01:26:29	80.31	00:00:53	0.83
01:26:32	80.36	01:27:01	80.81	00:00:29	0.45
01:27:03	80.84	01:27:04	80.86	00:00:01	0.02
01:27:06	80.89	01:28:00	81.73	00:00:54	0.84
01:28:02	81.77	01:29:35	83.22	00:01:33	1.45
01:29:36	83.23	01:29:47	83.41	00:00:11	0.17
01:29:49	83.44	01:30:36	84.17	00:00:47	0.73
01:30:37	84.19	01:31:53	85.38	00:01:16	1.19
01:31:55	85.41	01:32:02	85.52	00:00:07	0.11
01:32:02	85.52	01:32:34	86.02	00:00:32	0.50
01:32:36	86.05	01:32:37	86.06	00:00:01	0.02
01:32:39	86.09	01:32:52	86.30	00:00:13	0.20
01:32:54	86.33	01:35:05	88.38	00:02:11	2.05
01:35:07	88.41	01:35:25	88.69	00:00:18	0.28
01:35:26	88.70	01:36:33	89.75	00:01:07	1.05
01:36:34	89.77	01:36:35	89.78	00:00:01	0.02
01:36:37	89.81	01:42:22	95.20	00:05:45	5.39

01:42:26	95.27	01:44:19	97.03	00:01:53	1.77
01:44:25	97.13	01:44:57	97.63	00:00:32	0.50
01:44:59	97.66	01:45:24	98.05	00:00:25	0.39
01:45:26	98.08	01:47:11	99.72	00:01:45	1.64
01:47:14	99.77	01:47:29	100	00:00:15	0.23

MOTIF #	MOTIF IN	%	MOTIF OUT	%	DURATION	%
1	00:01:12	0.36	00:01:19	0.47	00:00:07	0.11
1	00:01:22	0.52	00:01:29	0.63	00:00:07	0.11
4	00:02:12	1.30	00:02:14	1.33	00:00:02	0.03
1	00:02:32	1.61	00:02:35	1.66	00:00:03	0.05
1	00:03:12	2.23	00:03:16	2.30	00:00:04	0.06
2	00:03:17	2.31	00:03:20	2.36	00:00:03	0.05
1	00:03:23	2.41	00:03:28	2.48	00:00:05	0.08
2	00:04:11	3.16	00:04:13	3.19	00:00:02	0.03
2	00:06:52	5.67	00:06:55	5.72	00:00:03	0.05
1	00:07:28	6.23	00:07:32	6.30	00:00:04	0.06
2	00:15:19	13.59	00:15:23	13.66	00:00:04	0.06
2	00:15:40	13.92	00:15:42	13.95	00:00:02	0.03
1	00:42:36	39.17	00:42:41	39.25	00:00:05	0.08
2	01:02:45	58.06	01:02:46	58.08	00:00:01	0.02
2	01:02:53	58.19	01:02:54	58.20	00:00:01	0.02
1	01:05:02	60.20	01:05:09	60.31	00:00:07	0.11
3	01:05:24	60.55	01:05:39	60.78	00:00:15	0.23
1	01:08:31	63.47	01:08:36	63.55	00:00:05	0.08
2	01:08:55	63.84	01:08:58	63.89	00:00:03	0.05
2	01:22:09	76.25	01:22:11	76.28	00:00:02	0.03
1	01:23:19	77.34	01:23:25	77.54	00:00:06	0.09
2	01:24:18	78.27	01:24:19	78.28	00:00:01	0.02
4	01:27:12	80.98	01:27:15	81.03	00:00:03	0.05
4	01:27:17	81.06	01:27:21	81.13	00:00:04	0.06
2	01:35:19	88.59	01:35:21	88.63	00:00:02	0.03
1	01:35:49	89.06	01:35:55	89.16	00:00:06	0.09
4	01:36:45	89.94	01:36:48	89.98	00:00:03	0.05
4	01:36:51	90.03	01:36:53	90.06	00:00:02	0.03
4	01:36:57	90.13	01:37:00	90.17	00:00:03	0.05
2	01:37:20	90.48	01:37:21	90.50	00:00:01	0.02
3	01:37:26	90.58	01:37:31	90.66	00:00:05	0.08
2	01:38:19	91.41	01:38:20	91.42	00:00:01	0.02
3	01:40:23	93.34	01:40:25	93.38	00:00:02	0.03
2	01:40:37	93.56	01:40:45	93.69	00:00:08	0.12
2	01:40:52	93.80	01:40:53	93.81	00:00:01	0.02
1	01:45:28	98.11	01:45:30	98.14	00:00:02	0.03
1	01:45:52	98.48	01:46:01	98.63	00:00:09	0.14
1	01:46:04	98.67	01:46:14	98.83	00:00:10	0.16
1	01:46:17	98.88	01:46:27	99.03	00:00:10	0.16
1	01:46:32	99.11	01:46:39	99.22	00:00:07	0.11
2	01:47:06	99.64	01:47:08	99.67	00:00:02	0.03
1	01:47:09	99.69	01:47:10	99.70	00:00:01	0.02
2	01:47:21	99.88	01:47:23	99.91	00:00:02	0.03
1	01:47:23	99.91	01:47:26	99.95	00:00:03	0.05

FPO IN	%	FPO OUT	%	DURATION	%
00:04:20	3.30%	00:04:36	3.55%	00:00:16	0.25
01:26:37	80.44	01:26:45	80.56	00:00:08	0.12
01:26:52	80.67	01:26:58	80.77	00:00:06	0.09
01:27:23	81.16	01:27:41	81.44	00:00:18	0.28
01:27:44	81.48	01:27:49	81.56	00:00:05	0.08
01:27:54	81.64	01:27:57	81.69	00:00:03	0.05
01:28:35	82.28	01:28:49	82.50	00:00:14	0.22
01:28:52	82.55	01:29:04	82.73	00:00:12	0.19
01:29:13	82.88	01:29:35	83.22	00:00:22	0.34
01:30:12	83.80	01:30:15	83.84	00:00:03	0.05
01:30:42	84.27	01:31:53	85.38	00:01:11	1.11
01:36:01	89.25	01:36:32	89.73	00:00:31	0.48
01:37:27	90.59	01:37:31	90.66	00:00:04	0.06
01:38:57	92.00	01:39:04	92.11	00:00:07	0.11

01:40:21	93.31	01:40:34	93.52	00:00:13	0.20
01:40:37	93.56	01:40:49	93.75	00:00:12	0.19

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:49	0	00:08:52	7.55	00:08:03	7.55
T	00:08:52	7.55	00:23:26	21.20	00:14:34	13.66
CtT	00:23:26	21.20	00:25:05	22.75	00:01:39	1.55
JB	00:25:05	22.75	01:14:38	69.20	00:49:33	46.45
JC	01:14:38	69.20	01:26:00	79.86	00:11:22	10.66
AiL	01:26:00	79.86	01:26:36	80.42	00:00:36	0.56
FP	01:26:36	80.42	01:44:37	97.31	00:18:01	16.89
A: S	01:44:37	97.31	01:45:35	98.22	00:00:58	0.91
A: L	01:45:35	98.22	01:47:29	100	00:01:54	1.78

Coco (2017)
Directed by Lee Unkrich
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:43	0	00:01:43	1.09	00:01:00	1.09
00:01:46	1.15	00:03:47	3.35	00:02:01	2.21
00:03:51	3.43	00:03:53	3.46	00:00:02	0.04
00:03:54	3.48	00:03:55	3.50	00:00:01	0.02
00:04:00	3.59	00:04:24	4.03	00:00:24	0.44
00:04:24	4.03	00:04:57	4.63	00:00:33	0.60
00:04:59	4.67	00:05:18	5.01	00:00:19	0.35
00:05:18	5.01	00:05:58	5.74	00:00:40	0.73
00:06:05	5.87	00:06:23	6.20	00:00:18	0.33
00:06:31	6.34	00:06:35	6.42	00:00:04	0.07
00:07:22	7.27	00:07:55	7.87	00:00:33	0.60
00:08:08	8.11	00:08:19	8.31	00:00:11	0.20
00:08:19	8.31	00:08:33	8.57	00:00:14	0.26
00:08:33	8.57	00:08:43	8.75	00:00:10	0.18
00:09:19	9.40	00:09:56	10.08	00:00:37	0.67
00:09:59	10.13	00:10:09	10.32	00:00:10	0.18
00:10:14	10.41	00:10:45	10.97	00:00:31	0.56
00:10:48	11.03	00:11:03	11.30	00:00:15	0.27
00:11:12	11.46	00:12:01	12.36	00:00:49	0.89
00:12:01	12.36	00:13:30	13.98	00:01:29	1.62
00:13:45	14.25	00:14:16	14.82	00:00:31	0.56
00:14:18	14.85	00:14:26	15.00	00:00:08	0.15
00:14:30	15.07	00:15:18	15.95	00:00:48	0.87
00:15:19	15.97	00:15:32	16.20	00:00:13	0.24
00:15:37	16.29	00:16:23	17.13	00:00:46	0.84
00:17:02	17.84	00:17:03	17.86	00:00:01	0.02
00:17:11	18.01	00:17:15	18.08	00:00:04	0.07
00:17:21	18.19	00:17:48	18.68	00:00:27	0.49
00:17:48	18.68	00:18:02	18.94	00:00:14	0.26
00:18:03	18.95	00:18:22	19.30	00:00:19	0.35
00:18:22	19.30	00:19:29	20.52	00:01:07	1.22
00:19:38	20.69	00:20:48	21.96	00:01:10	1.28
00:20:49	21.98	00:21:28	22.69	00:00:39	0.71
00:21:30	22.73	00:21:41	22.93	00:00:11	0.20
00:21:43	22.96	00:21:59	23.25	00:00:16	0.29
00:22:02	23.31	00:22:33	23.87	00:00:31	0.56
00:22:34	23.89	00:22:53	24.24	00:00:19	0.35
00:22:55	24.28	00:22:56	24.29	00:00:01	0.02
00:22:58	24.33	00:27:30	29.29	00:04:32	4.96
00:27:43	29.52	00:27:53	29.71	00:00:10	0.18
00:29:01	30.95	00:29:06	31.04	00:00:05	0.09
00:29:25	31.38	00:29:42	31.69	00:00:17	0.31
00:29:48	31.80	00:30:09	32.19	00:00:21	0.38
00:30:10	32.20	00:30:49	32.91	00:00:39	0.71
00:30:54	33.01	00:31:17	33.42	00:00:23	0.42
00:31:18	33.44	00:31:38	33.81	00:00:20	0.36
00:31:40	33.84	00:31:42	33.88	00:00:02	0.04

00:31:44	33.92	00:31:47	33.97	00:00:03	0.05
00:31:48	33.99	00:32:42	34.97	00:00:54	0.98
00:32:43	34.99	00:33:36	35.96	00:00:53	0.97
00:33:40	36.03	00:33:51	36.23	00:00:11	0.20
00:34:06	36.50	00:34:58	37.45	00:00:52	0.95
00:34:58	37.45	00:35:35	38.13	00:00:37	0.67
00:35:37	38.16	00:35:46	38.33	00:00:09	0.16
00:35:46	38.33	00:35:51	38.42	00:00:05	0.09
00:35:59	38.56	00:36:12	38.80	00:00:13	0.24
00:36:12	38.80	00:37:06	39.78	00:00:54	0.98
00:37:16	39.97	00:37:37	40.35	00:00:21	0.38
00:37:48	40.55	00:37:49	40.57	00:00:01	0.02
00:37:53	40.64	00:37:55	40.68	00:00:02	0.04
00:38:05	40.86	00:38:16	41.06	00:00:11	0.20
00:38:26	41.24	00:38:48	41.64	00:00:22	0.40
00:39:30	42.41	00:40:10	43.14	00:00:40	0.73
00:40:11	43.16	00:40:36	43.61	00:00:25	0.46
00:40:36	43.61	00:41:30	44.60	00:00:54	0.98
00:42:38	45.84	00:43:10	46.42	00:00:32	0.58
00:43:12	46.46	00:43:45	47.06	00:00:33	0.60
00:43:51	47.17	00:45:20	48.79	00:01:29	1.62
00:45:32	49.01	00:45:51	49.35	00:00:19	0.35
00:45:53	49.39	00:45:59	49.50	00:00:06	0.11
00:46:04	49.59	00:46:07	49.64	00:00:03	0.05
00:46:16	49.81	00:46:41	50.26	00:00:25	0.46
00:46:46	50.36	00:46:55	50.52	00:00:09	0.16
00:46:57	50.56	00:47:03	50.67	00:00:06	0.11
00:47:06	50.72	00:48:31	52.27	00:01:25	1.55
00:49:14	53.05	00:50:50	54.80	00:01:36	1.75
00:51:00	54.98	00:52:47	56.93	00:01:47	1.95
00:52:49	56.97	00:53:18	57.50	00:00:29	0.53
00:53:35	57.81	00:55:00	59.36	00:01:25	1.55
00:55:01	59.38	00:55:05	59.45	00:00:04	0.07
00:55:07	59.49	00:56:18	60.78	00:01:11	1.29
00:56:18	60.78	00:57:08	61.69	00:00:50	0.91
00:57:08	61.69	00:57:09	61.71	00:00:01	0.02
00:57:09	61.71	00:58:02	62.68	00:00:53	0.97
00:58:16	62.93	01:04:51	70.13	00:06:35	7.20
01:04:54	70.18	01:06:54	72.37	00:02:00	2.19
01:07:22	72.88	01:09:43	75.45	00:02:21	2.57
01:09:43	75.45	01:10:44	76.56	00:01:01	1.11
01:10:44	76.56	01:11:41	77.60	00:00:57	1.04
01:11:49	77.75	01:12:09	78.11	00:00:20	0.36
01:12:10	78.13	01:12:48	78.82	00:00:38	0.69
01:12:50	78.86	01:13:41	79.79	00:00:51	0.93
01:13:45	79.86	01:15:40	81.96	00:01:55	2.10
01:15:40	81.96	01:16:05	82.41	00:00:25	0.46
01:16:07	82.45	01:16:31	82.89	00:00:24	0.44
01:16:31	82.89	01:16:50	83.23	00:00:19	0.35
01:16:51	83.25	01:18:05	84.60	00:01:14	1.35
01:18:06	84.62	01:18:25	84.96	00:00:19	0.35
01:18:44	85.31	01:20:20	87.06	00:01:36	1.75
01:20:22	87.10	01:22:45	89.70	00:02:23	2.61
01:22:54	89.87	01:23:34	90.60	00:00:40	0.73
01:23:39	90.69	01:24:49	91.96	00:01:10	1.28
01:24:59	92.15	01:26:32	93.84	00:01:33	1.69
01:26:58	94.31	01:28:04	95.52	00:01:06	1.20
01:28:04	95.52	01:30:19	97.98	00:02:15	2.46
01:30:19	97.98	01:32:10	100	00:01:51	2.02

THEME IN	%	THEME OUT	%	DURATION	%
00:01:05	0.40	00:01:33	0.91	00:00:28	0.51
00:04:43	4.37	00:04:46	4.43	00:00:03	0.05
00:18:47	19.76	00:19:07	20.12	00:00:20	0.36
00:20:06	21.20	00:20:25	21.54	00:00:19	0.35
00:33:41	36.05	00:33:44	36.10	00:00:03	0.05
00:44:11	47.53	00:44:54	48.31	00:00:43	0.78
00:45:05	48.51	00:45:20	48.79	00:00:15	0.27

00:53:42	57.94	00:54:20	58.63	00:00:38	0.69
01:03:54	69.09	01:04:24	69.64	00:00:30	0.55
01:10:54	76.75	01:11:27	77.35	00:00:33	0.60
01:12:11	78.15	01:12:28	78.46	00:00:17	0.31
01:13:51	79.97	01:14:34	80.75	00:00:43	0.78
01:14:54	81.12	01:15:15	81.50	00:00:21	0.38
01:24:07	91.20	01:24:40	91.80	00:00:33	0.60
01:25:35	92.80	01:26:03	93.31	00:00:28	0.51

REMEMBER ME IN	%	REMEMBER ME OUT	%	DURATION	%
00:05:18	5.01	00:05:58	5.74	00:00:40	0.73
00:35:46	38.33	00:35:51	38.42	00:00:05	0.09
00:35:59	38.56	00:36:12	38.80	00:00:13	0.24
00:46:35	50.15	00:46:40	50.25	00:00:05	0.09
00:46:46	50.36	00:46:55	50.52	00:00:09	0.16
00:59:42	64.50	00:59:44	64.53	00:00:02	0.04
01:09:43	75.45	01:10:44	76.56	00:01:01	1.11
01:27:01	94.37	01:28:04	95.52	00:01:03	1.15

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:43	0	00:06:23	6.20	00:05:40	6.20
T	00:06:23	6.20	00:23:18	24.69	00:16:55	18.50
CtT	00:23:18	24.69	00:24:59	26.54	00:01:41	1.84
JB	00:24:59	26.54	00:54:24	58.70	00:29:25	32.17
JC	00:54:24	58.70	01:06:51	72.32	00:12:27	13.61
AiL	01:06:51	72.32	01:12:11	78.15	00:05:20	5.83
FP	01:12:11	78.15	01:29:27	97.03	00:17:16	18.88
A: S	-	-	-	-	-	-
A: L	01:29:27	97.03	01:32:10	100	00:02:43	2.97

Ratatouille (2007)
Directed by Brad Bird
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:27	0	00:01:02	0.57	00:00:35	0.57
00:02:03	1.56	00:03:43	3.19	00:01:40	1.63
00:04:05	3.54	00:04:38	4.08	00:00:33	0.54
00:04:41	4.13	00:04:47	4.23	00:00:06	0.10
00:04:50	4.28	00:04:54	4.34	00:00:04	0.07
00:04:55	4.36	00:06:30	5.90	00:01:35	1.54
00:06:52	6.26	00:07:13	6.60	00:00:21	0.34
00:07:14	6.62	00:07:28	6.84	00:00:14	0.23
00:07:29	6.86	00:08:31	7.87	00:01:02	1.01
00:08:43	8.06	00:09:46	9.09	00:01:03	1.02
00:09:47	9.10	00:10:04	9.38	00:00:17	0.28
00:10:05	9.40	00:10:08	9.45	00:00:03	0.05
00:10:09	9.46	00:10:41	9.98	00:00:32	0.52
00:10:59	10.27	00:12:12	11.46	00:01:13	1.19
00:12:14	11.49	00:12:49	12.06	00:00:35	0.57
00:13:34	12.79	00:15:08	14.32	00:01:34	1.53
00:15:10	14.36	00:15:30	14.68	00:00:20	0.33
00:15:46	14.94	00:19:18	18.39	00:03:32	3.45
00:19:26	18.52	00:19:34	18.65	00:00:08	0.13
00:19:37	18.70	00:22:06	21.12	00:02:29	2.42
00:22:07	21.13	00:22:13	21.23	00:00:06	0.10
00:22:14	21.25	00:23:54	22.87	00:01:40	1.63
00:24:03	23.02	00:24:49	23.77	00:00:46	0.75
00:24:53	23.83	00:24:54	23.85	00:00:01	0.02
00:24:56	23.88	00:25:40	24.60	00:00:44	0.72
00:25:41	24.61	00:25:46	24.70	00:00:05	0.08
00:25:46	24.70	00:26:14	25.15	00:00:28	0.46
00:28:55	27.77	00:29:24	28.24	00:00:29	0.47
00:31:12	30.00	00:32:33	31.31	00:01:21	1.32

00:32:33	31.31	00:32:43	31.47	00:00:10	0.16
00:32:43	31.47	00:33:05	31.83	00:00:22	0.36
00:33:11	31.93	00:34:03	32.78	00:00:52	0.85
00:34:22	33.08	00:34:52	33.57	00:00:30	0.49
00:34:57	33.65	00:35:16	33.96	00:00:19	0.31
00:35:19	34.01	00:36:01	34.69	00:00:42	0.68
00:36:25	35.08	00:37:10	35.82	00:00:45	0.73
00:37:11	35.83	00:37:40	36.30	00:00:29	0.47
00:37:42	36.34	00:40:05	38.66	00:02:23	2.32
00:40:06	38.68	00:40:36	39.16	00:00:30	0.49
00:42:31	41.03	00:42:42	41.21	00:00:11	0.18
00:44:06	42.58	00:46:59	45.39	00:02:53	2.81
00:46:59	45.39	00:47:04	45.47	00:00:05	0.08
00:47:06	45.50	00:47:30	45.89	00:00:24	0.39
00:49:04	47.42	00:50:25	48.74	00:01:21	1.32
00:50:27	48.77	00:50:31	48.84	00:00:04	0.07
00:50:32	48.85	00:50:36	48.92	00:00:04	0.07
00:50:52	49.18	00:52:23	50.66	00:01:31	1.48
00:52:51	51.11	00:53:15	51.50	00:00:24	0.39
00:53:41	51.93	00:54:06	52.33	00:00:25	0.41
00:55:09	53.36	00:55:54	54.09	00:00:45	0.73
00:57:05	55.24	00:59:01	57.13	00:01:56	1.89
00:59:29	57.58	01:01:39	59.70	00:02:10	2.11
01:01:42	59.75	01:03:34	61.57	00:01:52	1.82
01:03:36	61.60	01:03:40	61.66	00:00:04	0.07
01:05:30	63.45	01:07:19	65.23	00:01:49	1.77
01:08:02	65.92	01:08:26	66.31	00:00:24	0.39
01:08:30	66.38	01:09:33	67.40	00:01:03	1.02
01:09:35	67.44	01:10:10	68.01	00:00:35	0.57
01:10:13	68.05	01:10:48	68.62	00:00:35	0.57
01:11:25	69.22	01:12:21	70.13	00:00:56	0.91
01:12:23	70.17	01:13:11	70.95	00:00:48	0.78
01:13:25	71.18	01:14:47	72.51	00:01:22	1.33
01:14:48	72.52	01:14:56	72.65	00:00:08	0.13
01:14:57	72.67	01:15:11	72.90	00:00:14	0.23
01:15:18	73.01	01:16:44	74.41	00:01:26	1.40
01:18:06	75.74	01:19:16	76.88	00:01:10	1.14
01:19:18	76.91	01:20:02	77.63	00:00:44	0.72
01:20:41	78.26	01:23:35	81.09	00:02:54	2.83
01:24:36	82.08	01:25:34	83.03	00:00:58	0.94
01:25:34	83.03	01:26:36	84.04	00:01:02	1.01
01:26:45	84.18	01:26:49	84.25	00:00:04	0.07
01:26:49	84.25	01:27:54	85.30	00:01:05	1.06
01:27:56	85.34	01:29:14	86.60	00:01:18	1.27
01:29:15	86.62	01:30:55	88.25	00:01:40	1.63
01:30:59	88.31	01:32:24	89.69	00:01:25	1.38
01:32:40	89.95	01:32:52	90.15	00:00:12	0.20
01:32:53	90.16	01:36:26	93.63	00:03:33	3.46
01:36:30	93.69	01:37:45	94.91	00:01:15	1.22
01:37:49	94.98	01:42:58	100	00:05:09	5.02

THEME IN	%	THEME OUT	%	DURATION	%
00:04:05	3.54	00:04:29	3.93	00:00:24	0.39
00:17:03	16.19	00:17:23	16.52	00:00:20	0.33
00:17:24	16.53	00:17:39	16.78	00:00:15	0.24
00:32:32	31.30	00:33:04	31.82	00:00:32	0.52
00:51:03	49.36	00:51:21	49.65	00:00:18	0.29
00:52:51	51.11	00:53:04	51.32	00:00:13	0.21
01:14:24	72.13	01:14:28	72.20	00:00:04	0.07
01:14:31	72.25	01:14:32	72.26	00:00:01	0.02
01:14:37	72.35	01:14:40	72.39	00:00:03	0.05
01:14:41	72.41	01:14:44	72.46	00:00:03	0.05
01:15:23	73.09	01:15:46	73.47	00:00:23	0.37
01:16:10	73.86	01:16:31	74.20	00:00:21	0.34
01:26:56	84.36	01:27:00	84.43	00:00:04	0.07
01:27:20	84.75	01:27:34	84.98	00:00:14	0.23
01:27:56	85.34	01:28:03	85.45	00:00:07	0.11
01:28:07	85.51	01:28:10	85.56	00:00:03	0.05

01:34:46	92.00	01:34:51	92.08	00:00:05	0.08
01:38:56	96.07	01:39:50	96.94	00:00:54	0.88
01:40:06	97.20	01:40:45	97.84	00:00:39	0.63
01:41:08	98.21	01:41:31	98.59	00:00:23	0.37
01:42:14	99.28	01:42:38	99.67	00:00:24	0.39

FPO IN	%	FPO OUT	%	DURATION	%
01:28:03	85.45%	01:28:16	85.66%	00:00:13	0.21%

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:27	0	00:13:40	12.89	00:13:13	12.89
T	00:13:40	12.89	00:15:10	14.36	00:01:30	1.46
CtT	00:15:10	14.36	00:17:40	16.79	00:02:30	2.44
JB	00:17:40	16.79	01:00:53	58.95	00:43:13	42.16
JC	01:00:53	58.95	01:26:50	84.26	00:25:57	25.31
AiL	01:26:50	84.26	01:28:08	85.53	00:01:18	1.27
FP	01:28:08	85.53	01:41:00	98.08	00:12:52	12.55
A: S	01:41:00	98.08	01:41:16	98.34	00:00:16	0.26
A: L	01:41:16	98.34	01:42:58	100	00:01:42	1.66

Onward (2020)
Directed by Dan Scanlon
Music by Mychael Danna and Jeff Danna

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:46	0	00:01:59	1.32	00:01:13	1.32
00:02:01	1.36	00:03:09	2.59	00:01:08	1.23
00:03:09	2.59	00:03:23	2.84	00:00:14	0.25
00:03:24	2.86	00:03:36	3.08	00:00:12	0.22
00:03:37	3.10	00:03:44	3.22	00:00:07	0.13
00:03:46	3.26	00:04:12	3.73	00:00:26	0.47
00:04:14	3.76	00:04:26	3.98	00:00:12	0.22
00:04:29	4.04	00:04:55	4.51	00:00:26	0.47
00:05:36	5.25	00:06:22	6.08	00:00:46	0.83
00:06:37	6.35	00:06:51	6.61	00:00:14	0.25
00:08:07	7.98	00:10:38	10.71	00:02:31	2.73
00:11:06	11.22	00:11:19	11.46	00:00:13	0.24
00:12:31	12.76	00:12:49	13.09	00:00:18	0.33
00:13:15	13.56	00:14:53	15.33	00:01:38	1.77
00:14:53	15.33	00:15:03	15.51	00:00:10	0.18
00:15:16	15.75	00:17:48	18.50	00:02:32	2.75
00:17:50	18.53	00:18:03	18.77	00:00:13	0.24
00:18:08	18.86	00:18:34	19.33	00:00:26	0.47
00:18:44	19.51	00:19:28	20.31	00:00:44	0.80
00:19:42	20.56	00:20:35	21.52	00:00:53	0.96
00:20:52	21.83	00:21:04	22.05	00:00:12	0.22
00:21:22	22.37	00:21:36	22.62	00:00:14	0.25
00:21:50	22.88	00:22:43	23.84	00:00:53	0.96
00:23:04	24.22	00:23:48	25.01	00:00:44	0.80
00:23:57	25.18	00:24:16	25.52	00:00:19	0.34
00:24:27	25.72	00:24:32	25.81	00:00:05	0.09
00:24:34	25.85	00:24:49	26.12	00:00:15	0.27
00:25:23	26.73	00:25:36	26.97	00:00:13	0.24
00:25:44	27.11	00:26:23	27.82	00:00:39	0.71
00:27:19	28.83	00:27:56	29.50	00:00:37	0.67
00:28:11	29.77	00:28:38	30.26	00:00:27	0.49
00:28:38	30.26	00:28:41	30.32	00:00:03	0.05
00:28:45	30.39	00:28:50	30.48	00:00:05	0.09
00:29:02	30.70	00:29:11	30.86	00:00:09	0.16
00:29:11	30.86	00:29:13	30.90	00:00:02	0.04
00:29:13	30.90	00:29:31	31.22	00:00:18	0.33
00:29:31	31.22	00:29:35	31.29	00:00:04	0.07
00:29:35	31.29	00:31:18	33.16	00:01:43	1.86
00:31:18	33.16	00:31:25	33.29	00:00:07	0.13
00:31:27	33.32	00:31:39	33.54	00:00:12	0.22

00:31:41	33.57	00:32:48	34.79	00:01:07	1.21
00:33:03	35.06	00:34:30	36.63	00:01:27	1.57
00:34:46	36.92	00:34:48	36.96	00:00:02	0.04
00:35:09	37.34	00:35:23	37.59	00:00:14	0.25
00:35:47	38.03	00:36:00	38.26	00:00:13	0.24
00:36:29	38.79	00:36:41	39.00	00:00:12	0.22
00:38:12	40.65	00:38:16	40.72	00:00:04	0.07
00:38:20	40.80	00:38:27	40.92	00:00:07	0.13
00:38:29	40.96	00:38:38	41.12	00:00:09	0.16
00:39:30	42.06	00:39:58	42.57	00:00:28	0.51
00:40:39	43.31	00:41:03	43.75	00:00:24	0.43
00:41:06	43.80	00:41:19	44.04	00:00:13	0.24
00:41:28	44.20	00:41:55	44.69	00:00:27	0.49
00:42:04	44.85	00:42:22	45.18	00:00:18	0.33
00:42:24	45.21	00:42:48	45.65	00:00:24	0.43
00:43:05	45.95	00:43:43	46.64	00:00:38	0.69
00:43:54	46.84	00:44:00	46.95	00:00:06	0.11
00:44:17	47.26	00:44:38	47.64	00:00:21	0.38
00:44:40	47.67	00:45:35	48.67	00:00:55	1.00
00:45:36	48.69	00:47:13	50.44	00:01:37	1.76
00:47:15	50.48	00:47:37	50.88	00:00:22	0.40
00:47:39	50.91	00:47:41	50.95	00:00:02	0.04
00:47:46	51.04	00:48:21	51.67	00:00:35	0.63
00:48:24	51.73	00:48:47	52.14	00:00:23	0.42
00:49:06	52.49	00:49:30	52.92	00:00:24	0.43
00:49:35	53.01	00:49:40	53.10	00:00:05	0.09
00:49:41	53.12	00:49:44	53.18	00:00:03	0.05
00:49:46	53.21	00:49:57	53.41	00:00:11	0.20
00:50:01	53.48	00:50:10	53.65	00:00:09	0.16
00:50:12	53.68	00:50:22	53.86	00:00:10	0.18
00:51:18	54.88	00:51:45	55.37	00:00:27	0.49
00:51:47	55.40	00:52:02	55.67	00:00:15	0.27
00:52:23	56.05	00:54:51	58.73	00:02:28	2.68
00:54:51	58.73	00:55:24	59.33	00:00:33	0.60
00:55:35	59.53	00:55:51	59.82	00:00:16	0.29
00:56:03	60.04	00:56:05	60.07	00:00:02	0.04
00:56:07	60.11	00:56:29	60.51	00:00:22	0.40
00:56:39	60.69	00:56:58	61.03	00:00:19	0.34
00:57:02	61.10	00:57:42	61.83	00:00:40	0.72
00:58:14	62.41	00:58:17	62.46	00:00:03	0.05
00:58:19	62.50	00:58:34	62.77	00:00:15	0.27
00:58:38	62.84	00:59:01	63.26	00:00:23	0.42
00:59:08	63.38	00:59:13	63.48	00:00:05	0.09
00:59:15	63.51	00:59:23	63.66	00:00:08	0.14
00:59:24	63.67	00:59:32	63.82	00:00:08	0.14
00:59:34	63.86	00:59:52	64.18	00:00:18	0.33
00:59:55	64.24	01:00:05	64.42	00:00:10	0.18
01:00:11	64.52	01:00:13	64.56	00:00:02	0.04
01:00:15	64.60	01:00:16	64.62	00:00:01	0.02
01:00:24	64.76	01:00:48	65.19	00:00:24	0.43
01:00:50	65.23	01:01:12	65.63	00:00:22	0.40
01:01:14	65.67	01:01:38	66.10	00:00:24	0.43
01:01:40	66.14	01:02:13	66.73	00:00:33	0.60
01:02:17	66.81	01:03:05	67.67	00:00:48	0.87
01:03:06	67.69	01:03:19	67.93	00:00:13	0.24
01:03:55	68.58	01:05:48	70.62	00:01:53	2.05
01:05:48	70.62	01:06:07	70.97	00:00:19	0.34
01:06:07	70.97	01:06:40	71.57	00:00:33	0.60
01:06:57	71.87	01:08:01	73.03	00:01:04	1.16
01:08:31	73.57	01:08:40	73.74	00:00:09	0.16
01:08:42	73.77	01:08:51	73.94	00:00:09	0.16
01:08:53	73.97	01:08:56	74.03	00:00:03	0.05
01:08:58	74.06	01:09:43	74.88	00:00:45	0.81
01:09:47	74.95	01:10:06	75.29	00:00:19	0.34
01:10:33	75.78	01:10:41	75.93	00:00:08	0.14
01:10:42	75.95	01:10:44	75.98	00:00:02	0.04
01:11:04	76.34	01:11:48	77.14	00:00:44	0.80
01:12:27	77.85	01:13:18	78.77	00:00:51	0.92
01:13:25	78.90	01:13:26	78.91	00:00:01	0.02

01:13:30	78.99	01:13:37	79.11	00:00:07	0.13
01:13:39	79.15	01:14:22	79.93	00:00:43	0.78
01:14:32	80.11	01:16:00	81.70	00:01:28	1.59
01:16:02	81.74	01:16:23	82.12	00:00:21	0.38
01:17:10	82.97	01:17:44	83.58	00:00:34	0.62
01:17:55	83.78	01:22:01	88.24	00:04:06	4.45
01:22:02	88.25	01:23:43	90.08	00:01:41	1.83
01:23:33	89.90	01:24:03	90.44	00:00:30	0.54
01:24:04	90.46	01:24:23	90.81	00:00:19	0.34
01:24:24	90.82	01:24:53	91.35	00:00:29	0.52
01:24:55	91.38	01:27:01	93.67	00:02:06	2.28
01:27:16	93.94	01:30:04	96.98	00:02:48	3.04
01:30:09	97.07	01:31:34	98.61	00:01:25	1.54
01:31:36	98.64	01:32:51	100.00	00:01:15	1.36

IAN THEME IN	%	IAN THEME OUT	%	DURATION	%
00:02:45	2.15	00:03:02	2.46	00:00:17	0.31
00:05:36	5.25	00:05:51	5.52	00:00:15	0.27
00:05:58	5.65	00:06:06	5.79	00:00:08	0.14
00:08:21	8.24	00:08:39	8.56	00:00:18	0.33
00:08:47	8.71	00:09:13	9.18	00:00:26	0.47
00:09:17	9.25	00:09:21	9.32	00:00:04	0.07
00:10:10	10.21	00:10:36	10.68	00:00:26	0.47
00:12:33	12.80	00:12:49	13.09	00:00:16	0.29
01:00:41	65.07	01:00:46	65.16	00:00:05	0.09
01:01:00	65.41	01:01:05	65.50	00:00:05	0.09
01:01:43	66.19	01:01:57	66.44	00:00:14	0.25
01:01:59	66.48	01:02:03	66.55	00:00:04	0.07
01:11:10	76.45	01:11:25	76.72	00:00:15	0.27
01:11:28	76.78	01:11:34	76.89	00:00:06	0.11
01:25:58	92.52	01:25:59	92.54	00:00:01	0.02
01:30:19	97.25	01:30:35	97.54	00:00:16	0.29
01:30:38	97.59	01:30:45	97.72	00:00:07	0.13
01:31:12	98.21	01:31:27	98.48	00:00:15	0.27
01:31:41	98.73	01:31:53	98.95	00:00:12	0.22
01:32:26	99.55	01:32:38	99.76	00:00:12	0.22

DAD THEME IN	%	DAD THEME OUT	%	DURATION	%
00:14:17	14.68	00:14:22	14.77	00:00:05	0.09
00:14:28	14.88	00:14:33	14.97	00:00:05	0.09
00:14:39	15.08	00:14:48	15.24	00:00:09	0.16
00:15:21	15.84	00:15:27	15.95	00:00:06	0.11
00:15:31	16.02	00:15:41	16.20	00:00:10	0.18
00:19:12	20.02	00:19:18	20.13	00:00:06	0.11
00:19:41	20.54	00:19:45	20.62	00:00:04	0.07
00:20:56	21.90	00:20:59	21.95	00:00:03	0.05
00:25:23	26.73	00:25:26	26.79	00:00:03	0.05
00:33:30	35.55	00:33:38	35.69	00:00:08	0.14
00:39:31	42.08	00:39:33	42.12	00:00:02	0.04
00:50:01	53.48	00:50:08	53.61	00:00:07	0.13
01:20:15	86.32	01:20:27	86.53	00:00:12	0.22
01:27:24	94.08	01:27:30	94.19	00:00:06	0.11
01:27:31	94.21	01:27:56	94.66	00:00:25	0.45
01:28:04	94.81	01:28:28	95.24	00:00:24	0.43
01:29:09	95.98	01:29:30	96.36	00:00:21	0.38
01:29:34	96.43	01:29:45	96.63	00:00:11	0.20

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:46	0	00:03:09	2.59	00:02:23	2.59
T	00:03:09	2.59	00:23:45	24.96	00:20:36	22.37
CtT	00:23:45	24.96	00:24:16	25.52	00:00:31	0.56
JB	00:24:16	25.52	00:54:59	58.88	00:30:43	33.36
JC	00:54:59	58.88	01:17:53	83.75	00:22:54	24.87
AiL	01:17:53	83.75	01:21:16	87.42	00:03:23	3.67
FP	01:21:16	87.42	01:30:06	97.01	00:08:50	9.59
A: L	01:30:06	97.01	01:32:51	100	00:02:45	2.99

Super 8 (2020)
Directed by J.J. Abrams
Music by Michael Giacchino

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:01:00	0	00:01:36	0.58	00:00:36	0.58
00:04:09	3.07	00:05:07	4.01	00:00:58	0.94
00:06:59	5.83	00:07:24	6.24	00:00:25	0.41
00:07:45	6.58	00:09:00	7.80	00:01:15	1.22
00:09:00	7.80	00:09:35	8.36	00:00:35	0.57
00:09:35	8.36	00:09:47	8.56	00:00:12	0.19
00:11:01	9.76	00:11:05	9.83	00:00:04	0.06
00:11:05	9.83	00:11:26	10.17	00:00:21	0.34
00:11:26	10.17	00:11:33	10.28	00:00:07	0.11
00:14:44	13.38	00:15:17	13.92	00:00:33	0.54
00:19:08	17.67	00:20:47	19.28	00:01:39	1.61
00:20:56	19.43	00:25:01	23.40	00:04:05	3.98
00:25:58	24.33	00:26:43	25.06	00:00:45	0.73
00:28:35	26.88	00:29:06	27.38	00:00:31	0.50
00:30:48	29.04	00:31:19	29.54	00:00:31	0.50
00:31:44	29.95	00:32:18	30.50	00:00:34	0.55
00:32:18	30.50	00:33:30	31.67	00:01:12	1.17
00:33:30	31.67	00:34:41	32.82	00:01:11	1.15
00:35:33	33.67	00:35:45	33.86	00:00:12	0.19
00:37:06	35.18	00:37:31	35.59	00:00:25	0.41
00:37:31	35.59	00:38:38	36.67	00:01:07	1.09
00:39:53	37.89	00:40:32	38.53	00:00:39	0.63
00:40:37	38.61	00:42:53	40.82	00:02:16	2.21
00:46:34	44.40	00:47:39	45.46	00:01:05	1.06
00:49:33	47.31	00:50:10	47.91	00:00:37	0.60
00:50:42	48.43	00:51:58	49.67	00:01:16	1.23
00:53:35	51.24	00:54:46	52.40	00:01:11	1.15
00:55:08	52.75	00:56:59	54.56	00:01:51	1.80
00:58:35	56.11	01:01:33	59.01	00:02:58	2.89
01:01:36	59.05	01:01:57	59.40	00:00:21	0.34
01:02:00	59.44	01:02:24	59.83	00:00:24	0.39
01:02:25	59.85	01:02:34	60.00	00:00:09	0.15
01:03:16	60.68	01:03:55	61.31	00:00:39	0.63
01:03:57	61.34	01:04:20	61.72	00:00:23	0.37
01:04:22	61.75	01:05:02	62.40	00:00:40	0.65
01:05:06	62.47	01:05:53	63.23	00:00:47	0.76
01:07:46	65.06	01:11:14	68.44	00:03:28	3.38
01:11:38	68.83	01:12:08	69.32	00:00:30	0.49
01:12:30	69.68	01:12:59	70.15	00:00:29	0.47
01:13:04	70.23	01:14:58	72.08	00:01:54	1.85
01:15:15	72.36	01:17:16	74.32	00:02:01	1.97
01:17:31	74.57	01:17:38	74.68	00:00:07	0.11
01:17:38	74.68	01:19:23	76.38	00:01:45	1.71
01:21:34	78.51	01:22:08	79.06	00:00:34	0.55
01:22:12	79.13	01:24:21	81.22	00:02:09	2.10
01:24:23	81.26	01:25:00	81.86	00:00:37	0.60
01:25:06	81.96	01:25:31	82.36	00:00:25	0.41
01:25:31	82.36	01:29:00	85.76	00:03:29	3.39
01:29:01	85.77	01:29:33	86.29	00:00:32	0.52
01:30:03	86.78	01:30:32	87.25	00:00:29	0.47
01:31:37	88.31	01:32:08	88.81	00:00:31	0.50
01:32:11	88.86	01:33:45	90.38	00:01:34	1.53
01:33:46	90.40	01:33:56	90.56	00:00:10	0.16
01:33:59	90.61	01:35:01	91.62	00:01:02	1.01
01:35:18	91.90	01:38:20	94.85	00:03:02	2.96
01:38:25	94.93	01:43:37	100	00:05:12	5.07

THEME IN	%	THEME OUT	%	DURATION	%
00:07:01	5.86	00:07:21	6.19	00:00:20	0.32
00:09:04	7.86	00:09:18	8.09	00:00:14	0.23
00:53:35	51.24	00:53:42	51.36	00:00:07	0.11
00:53:46	51.42	00:54:13	51.86	00:00:27	0.44

01:00:05	57.58	01:00:08	57.63	00:00:03	0.05
01:00:14	57.72	01:00:31	58.00	00:00:17	0.28
01:00:35	58.06	01:00:50	58.31	00:00:15	0.24
01:00:54	58.37	01:01:12	58.66	00:00:18	0.29
01:01:23	58.84	01:01:28	58.92	00:00:05	0.08
01:24:51	81.71	01:24:57	81.81	00:00:06	0.10
01:30:14	86.96	01:30:21	87.07	00:00:07	0.11
01:40:32	97.00	01:40:41	97.14	00:00:09	0.15
01:40:48	97.26	01:40:51	97.30	00:00:03	0.05
01:40:56	97.39	01:40:58	97.42	00:00:02	0.03
01:41:43	98.15	01:41:49	98.25	00:00:06	0.10
01:41:51	98.28	01:42:18	98.72	00:00:27	0.44
01:42:21	98.77	01:43:06	99.50	00:00:45	0.73
01:43:11	99.58	01:43:30	99.89	00:00:19	0.31

SEQUENCE	START	%	END	%	DURATION	%
GD	00:01:00	0	00:04:06	3.02	00:03:06	3.02
T	00:04:06	3.02	00:31:23	29.61	00:27:17	26.59
CtT	-	-	-	-	-	-
JB	00:31:23	29.61	01:02:25	59.85	00:31:02	30.24
JC	01:02:25	59.85	01:19:40	76.66	00:17:15	16.81
AiL	01:19:40	76.66	01:25:31	82.36	00:05:51	5.70
FP	01:25:31	82.36	01:43:37	100	00:18:06	17.64
A	-	-	-	-	-	-

Cast Away (2000)
Directed by Robert Zemeckis
Music by Alan Silvestri

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:02:26	1.24	00:03:16	1.85	00:00:50	0.61%
00:03:19	1.89	00:05:13	3.28	00:01:54	1.40%
00:07:39	5.07	00:08:38	5.79	00:00:59	0.72%
00:12:25	8.57	00:12:54	8.93	00:00:29	0.36%
00:13:32	9.39	00:18:08	12.77	00:04:36	3.38%
01:36:51	70.60	01:38:31	71.83	00:01:40	1.22%
01:43:18	75.34	01:45:09	76.70	00:01:51	1.36%
01:55:24	84.23	01:56:46	85.23	00:01:22	1.00%
02:04:37	91.00	02:08:24	93.78	00:03:47	2.78%
02:10:44	95.49	02:12:26	96.74	00:01:42	1.25%
02:12:30	96.79	02:12:57	97.12	00:00:27	0.33%
02:16:18	99.58	02:16:52	100	00:00:34	0.42%

THEME IN	%	THEME OUT	%	DURATION	%
01:36:51	70.60	01:38:31	71.83	00:01:40	1.22
01:43:18	75.34	01:45:09	76.70	00:01:51	1.36
01:55:24	84.23	01:56:46	85.23	00:01:22	1.00
02:04:37	91.00	02:08:24	93.78	00:03:47	2.78
02:10:44	95.49	02:12:26	96.74	00:01:42	1.25
02:16:18	99.58	02:16:52	100	00:00:34	0.42

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:45	0	00:05:12	3.27	00:04:27	3.27
T	00:05:12	3.27	00:23:14	16.52	00:18:02	13.25
CtT	00:23:14	16.52	00:31:11	22.36	00:07:57	5.84
JB	00:31:11	22.36	01:19:10	57.61	00:47:59	35.25
JC	01:19:10	57.61	01:45:12	76.74	00:26:02	19.13
AiL	01:45:12	76.74	01:47:18	78.28	00:02:06	1.54
FP	01:47:18	78.28	02:12:21	96.68	00:25:03	18.40
A: S	-	-	-	-	-	-
A: L	02:12:21	96.68	02:16:52	100	00:04:31	3.32

APPENDIX III: Individual Act Timing Data

Inside Out: Act 1

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:45	0	00:08:48	32.37	00:08:03	32.37
T	00:08:48	32.37	00:25:20	98.86	00:16:32	66.49
CtT	00:25:20	98.86	00:25:37	100	00:00:17	1.14

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:45	0	00:07:23	26.68	00:06:38	26.68
00:07:32	27.28	00:08:55	32.84	00:01:23	5.56
00:10:12	38.00	00:10:43	40.08	00:00:31	2.08
00:11:19	42.49	00:11:25	42.90	00:00:06	0.40
00:11:35	43.57	00:12:24	46.85	00:00:49	3.28
00:14:10	53.95	00:14:58	57.17	00:00:48	3.22
00:15:10	57.98	00:15:43	60.19	00:00:33	2.21
00:16:30	63.34	00:17:11	66.09	00:00:41	2.75
00:18:26	71.11	00:18:56	73.12	00:00:30	2.01
00:19:10	74.06	00:20:01	77.48	00:00:51	3.42
00:20:01	77.48	00:20:14	78.35	00:00:13	0.87
00:20:14	78.35	00:22:13	86.33	00:01:59	7.98
00:23:30	91.49	00:24:57	97.32	00:01:27	5.83
00:25:02	97.65	00:25:18	98.73	00:00:16	1.07

THEME IN	%	THEME OUT	%	DURATION	%
00:02:13	5.90	00:02:41	7.77	00:00:28	1.88
00:02:59	8.98	00:03:21	10.46	00:00:22	1.47
00:19:22	74.87	00:19:56	77.14	00:00:34	2.28
00:20:14	78.35	00:20:38	79.96	00:00:24	1.61
00:21:28	83.31	00:21:41	84.18	00:00:13	0.87
00:21:53	84.99	00:22:07	85.92	00:00:14	0.94

Inside Out: Act 2

SEQUENCE	START	%	END	%	DURATION	%
JB	00:25:37	0	00:49:39	49.83	00:24:02	49.83
JC	00:49:39	49.83	01:07:42	87.25	00:18:03	37.42
AiL	01:07:42	87.25	01:13:51	100	00:06:09	12.75

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:25:37	0	00:26:45	2.35	00:01:25	2.94
00:26:56	2.73	00:27:11	3.25	00:00:15	0.52
00:28:56	6.88	00:29:56	8.95	00:01:00	2.07
00:30:00	9.09	00:30:06	9.30	00:00:06	0.21
00:30:10	9.43	00:30:49	10.78	00:00:39	1.35
00:31:14	11.64	00:32:19	13.89	00:01:05	2.25
00:33:09	15.62	00:33:31	16.38	00:00:22	0.76
00:33:46	16.90	00:34:22	18.14	00:00:36	1.24
00:34:45	18.94	00:35:32	20.56	00:00:47	1.62
00:35:32	20.56	00:35:58	21.46	00:00:26	0.90
00:36:59	23.57	00:37:28	24.57	00:00:29	1.00
00:37:41	25.02	00:37:56	25.54	00:00:15	0.52
00:38:13	26.12	00:39:55	29.65	00:01:42	3.52
00:40:25	30.68	00:41:26	32.79	00:01:01	2.11
00:41:55	33.79	00:43:36	37.28	00:01:41	3.49
00:43:54	37.91	00:45:19	40.84	00:01:25	2.94
00:45:42	41.64	00:46:16	42.81	00:00:34	1.17
00:47:24	45.16	00:47:52	46.13	00:00:28	0.97
00:48:31	47.48	00:49:57	50.45	00:01:26	2.97
00:50:34	51.73	00:51:12	53.04	00:00:38	1.31
00:51:12	53.04	00:51:16	53.18	00:00:04	0.14
00:51:16	53.18	00:51:33	53.77	00:00:17	0.59
00:51:39	53.97	00:53:40	58.15	00:02:01	4.18
00:53:40	58.15	00:54:22	59.61	00:00:42	1.45

00:54:29	59.85	00:55:33	62.06	00:01:04	2.21
00:55:45	62.47	00:56:37	64.27	00:00:52	1.80
00:56:40	64.37	00:57:20	65.76	00:00:40	1.38
00:57:25	65.93	00:59:24	70.04	00:01:59	4.11
00:59:24	70.04	00:59:34	70.39	00:00:10	0.35
00:59:34	70.39	00:59:41	70.63	00:00:07	0.24
00:59:42	70.66	01:00:03	71.39	00:00:21	0.73
01:00:20	71.98	01:00:52	73.08	00:00:32	1.11
01:00:57	73.26	01:01:09	73.67	00:00:12	0.41
01:01:09	73.67	01:01:13	73.81	00:00:04	0.14
01:01:13	73.81	01:01:20	74.05	00:00:07	0.24
01:02:38	76.74	01:03:57	79.47	00:01:19	2.73
01:04:03	79.68	01:06:57	85.69	00:02:54	6.01
01:07:31	86.87	01:10:28	92.99	00:02:57	6.12
01:10:46	93.61	01:13:41	99.65	00:02:55	6.05

THEME IN	%	THEME OUT	%	DURATION	%
00:34:05	17.55	00:34:20	18.07	00:00:15	0.52
00:45:45	41.74	00:46:07	42.50	00:00:22	0.76
00:49:46	50.07	00:49:50	50.21	00:00:04	0.14
01:11:02	94.16	01:11:16	94.64	00:00:14	0.48
01:11:22	94.85	01:11:34	95.27	00:00:12	0.41
01:11:50	95.82	01:11:54	95.96	00:00:04	0.14

Inside Out: Act 3

SEQUENCE	START	%	END	%	DURATION	%
FP	01:13:51	0	01:23:56	80.99	00:10:05	80.99
A: S	-	-	-	-	-	-
A: L	01:23:56	80.99	01:26:18	100	00:02:22	19.01

MUSIC IN	%	MUSIC OUT	%	DURATION	%
01:13:51	0	01:18:20	36.01	00:04:29	36.01
01:18:29	37.22	01:18:46	39.49	00:00:17	2.28
01:18:52	40.29	01:20:01	49.53	00:01:09	9.24
01:20:07	50.33	01:23:08	74.56	00:03:01	24.23
01:23:12	75.10	01:26:18	100	00:03:06	24.90

THEME IN	%	THEME OUT	%	DURATION	%
01:23:12	75.10	01:23:51	80.32	00:00:39	5.22
01:25:43	95.31	01:26:15	99.60	00:00:32	4.28

Ratatouille: Act 1

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:27	0	00:13:40	76.77	00:13:13	76.77
T	00:13:40	76.77	00:15:10	85.48	00:01:30	8.71
CtT	00:15:10	85.48	00:17:40	100	00:02:30	14.52

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:27	0	00:01:02	3.39	00:00:35	3.39
00:02:03	9.29	00:03:43	18.97	00:01:40	9.68
00:04:05	21.10	00:04:38	24.30	00:00:33	3.19
00:04:41	24.59	00:04:47	25.17	00:00:06	0.58
00:04:50	25.46	00:04:54	25.85	00:00:04	0.39
00:04:55	25.94	00:06:30	35.14	00:01:35	9.20
00:06:52	37.27	00:07:13	39.30	00:00:21	2.03
00:07:14	39.40	00:07:28	40.76	00:00:14	1.36
00:07:29	40.85	00:08:31	46.85	00:01:02	6.00
00:08:43	48.02	00:09:46	54.11	00:01:03	6.10
00:09:47	54.21	00:10:04	55.86	00:00:17	1.65
00:10:05	55.95	00:10:08	56.24	00:00:03	0.29
00:10:09	56.34	00:10:41	59.44	00:00:32	3.10
00:10:59	61.18	00:12:12	68.25	00:01:13	7.07
00:12:14	68.44	00:12:49	71.83	00:00:35	3.39

00:13:34	76.19	00:15:08	85.29	00:01:34	9.10
00:15:10	85.48	00:15:30	87.42	00:00:20	1.94
00:15:46	88.96	00:17:40	100	00:01:54	11.04

THEME IN	%	THEME OUT	%	DURATION	%
00:04:05	21.10	00:04:29	23.43	00:00:24	2.32
00:17:03	96.42	00:17:23	98.35	00:00:20	1.94
00:17:24	98.45	00:17:39	99.90	00:00:15	1.45

Ratatouille: Act 2

SEQUENCE	START	%	END	%	DURATION	%
JB	00:17:40	0	01:00:53	61.33	00:43:13	61.33
JC	01:00:53	61.33	01:26:50	98.16	00:25:57	36.83
AiL	01:26:50	98.16	01:28:08	100	00:01:18	1.84

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:17:40	0	00:19:18	2.32	00:01:38	2.32
00:19:26	2.51	00:19:34	2.70	00:00:08	0.19
00:19:37	2.77	00:22:06	6.29	00:02:29	3.52
00:22:07	6.32	00:22:13	6.46	00:00:06	0.14
00:22:14	6.48	00:23:54	8.85	00:01:40	2.37
00:24:03	9.06	00:24:49	10.15	00:00:46	1.09
00:24:53	10.24	00:24:54	10.26	00:00:01	0.02
00:24:56	10.31	00:25:40	11.35	00:00:44	1.04
00:25:41	11.38	00:25:46	11.49	00:00:05	0.12
00:25:46	11.49	00:26:14	12.16	00:00:28	0.66
00:28:55	15.96	00:29:24	16.65	00:00:29	0.69
00:31:12	19.21	00:32:33	21.12	00:01:21	1.92
00:32:33	21.12	00:32:43	21.36	00:00:10	0.24
00:32:43	21.36	00:33:05	21.88	00:00:22	0.52
00:33:11	22.02	00:34:03	23.25	00:00:52	1.23
00:34:22	23.70	00:34:52	24.41	00:00:30	0.71
00:34:57	24.53	00:35:16	24.98	00:00:19	0.45
00:35:19	25.05	00:36:01	26.04	00:00:42	0.99
00:36:25	26.61	00:37:10	27.67	00:00:45	1.06
00:37:11	27.70	00:37:40	28.38	00:00:29	0.69
00:37:42	28.43	00:40:05	31.81	00:02:23	3.38
00:40:06	31.84	00:40:36	32.54	00:00:30	0.71
00:42:31	35.26	00:42:42	35.53	00:00:11	0.26
00:44:06	37.51	00:46:59	41.60	00:02:53	4.09
00:46:59	41.60	00:47:04	41.72	00:00:05	0.12
00:47:06	41.77	00:47:30	42.34	00:00:24	0.57
00:49:04	44.56	00:50:25	46.48	00:01:21	1.92
00:50:27	46.52	00:50:31	46.62	00:00:04	0.09
00:50:32	46.64	00:50:36	46.74	00:00:04	0.09
00:50:52	47.11	00:52:23	49.27	00:01:31	2.15
00:52:51	49.93	00:53:15	50.50	00:00:24	0.57
00:53:41	51.11	00:54:06	51.70	00:00:25	0.59
00:55:09	53.19	00:55:54	54.26	00:00:45	1.06
00:57:05	55.94	00:59:01	58.68	00:01:56	2.74
00:59:29	59.34	01:01:39	62.42	00:02:10	3.07
01:01:42	62.49	01:03:34	65.14	00:01:52	2.65
01:03:36	65.18	01:03:40	65.28	00:00:04	0.09
01:05:30	67.88	01:07:19	70.46	00:01:49	2.58
01:08:02	71.48	01:08:26	72.04	00:00:24	0.57
01:08:30	72.14	01:09:33	73.63	00:01:03	1.49
01:09:35	73.68	01:10:10	74.50	00:00:35	0.83
01:10:13	74.57	01:10:48	75.40	00:00:35	0.83
01:11:25	76.28	01:12:21	77.60	00:00:56	1.32
01:12:23	77.65	01:13:11	78.78	00:00:48	1.14
01:13:25	79.12	01:14:47	81.05	00:01:22	1.94
01:14:48	81.08	01:14:56	81.27	00:00:08	0.19
01:14:57	81.29	01:15:11	81.62	00:00:14	0.33
01:15:18	81.79	01:16:44	83.82	00:01:26	2.03
01:18:06	85.76	01:19:16	87.42	00:01:10	1.66
01:19:18	87.46	01:20:02	88.51	00:00:44	1.04

01:20:41	89.43	01:23:35	93.54	00:02:54	4.12
01:24:36	94.99	01:25:34	96.36	00:00:58	1.37
01:25:34	96.36	01:26:36	97.82	00:01:02	1.47
01:26:45	98.04	01:26:49	98.13	00:00:04	0.09
01:26:49	98.13	01:27:54	99.67	00:01:05	1.54
01:27:56	99.72	01:28:08	100	00:00:12	0.28

THEME IN	%	THEME OUT	%	DURATION	%
00:32:32	21.10	00:33:04	21.85	00:00:32	0.76
00:51:03	47.37	00:51:21	47.80	00:00:18	0.43
00:52:51	49.93	00:53:04	50.24	00:00:13	0.31
01:14:24	80.51	01:14:28	80.61	00:00:04	0.09
01:14:31	80.68	01:14:32	80.70	00:00:01	0.02
01:14:37	80.82	01:14:40	80.89	00:00:03	0.07
01:14:41	80.91	01:14:44	80.98	00:00:03	0.07
01:15:23	81.91	01:15:46	82.45	00:00:23	0.54
01:16:10	83.02	01:16:31	83.51	00:00:21	0.50
01:26:56	98.30	01:27:00	98.39	00:00:04	0.09
01:27:20	98.86	01:27:34	99.20	00:00:14	0.33
01:27:56	99.72	01:28:03	99.88	00:00:07	0.17
01:28:07	99.98	01:28:08	100	00:00:01	0.02

Ratatouille: Act 3

SEQUENCE	START	%	END	%	DURATION	%
FP	01:28:08	0	01:41:00	86.74	00:12:52	86.74
A: S	01:41:00	86.74	01:41:16	88.54	00:00:16	1.80
A: L	01:41:16	88.54	01:42:58	100	00:01:42	11.46

MUSIC IN	%	MUSIC OUT	%	DURATION	%
01:28:08	0	01:29:14	7.42%	00:01:06	7.42
01:29:15	7.53%	01:30:55	18.76%	00:01:40	11.24
01:30:59	19.21%	01:32:24	28.76%	00:01:25	9.55
01:32:40	30.56%	01:32:52	31.91%	00:00:12	1.35
01:32:53	32.02%	01:36:26	55.96%	00:03:33	23.93
01:36:30	56.40%	01:37:45	64.83%	00:01:15	8.43
01:37:49	65.28%	01:42:58	100	00:05:09	34.72

THEME IN	%	THEME OUT	%	DURATION	%
01:28:08	0	01:28:10	0.22	00:00:02	0.22
01:34:46	44.72	01:34:51	45.28	00:00:05	0.56
01:38:56	72.81	01:39:50	78.88	00:00:54	6.07
01:40:06	80.67	01:40:45	85.06	00:00:39	4.38
01:41:08	87.64	01:41:31	90.22	00:00:23	2.58
01:42:14	95.06	01:42:38	97.75	00:00:24	2.70

Coco: Act 1

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:43	0	00:06:23	23.35	00:05:40	23.35
T	00:06:23	23.35	00:23:18	93.06	00:16:55	69.71
CtT	00:23:18	93.06	00:24:59	100	00:01:41	6.94

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:43	0	00:01:43	4.12	00:01:00	4.12
00:01:46	4.33	00:03:47	12.64	00:02:01	8.31
00:03:51	12.91	00:03:53	13.05	00:00:02	0.14
00:03:54	13.12	00:03:55	13.19	00:00:01	0.07
00:04:00	13.53	00:04:24	15.18	00:00:24	1.65
00:04:24	15.18	00:04:57	17.45	00:00:33	2.27
00:04:59	17.58	00:05:18	18.89	00:00:19	1.30
00:05:18	18.89	00:05:58	21.63	00:00:40	2.75
00:06:05	22.12	00:06:23	23.35	00:00:18	1.24
00:06:31	23.90	00:06:35	24.18	00:00:04	0.27
00:07:22	27.40	00:07:55	29.67	00:00:33	2.27

00:08:08	30.56	00:08:19	31.32	00:00:11	0.76
00:08:19	31.32	00:08:33	32.28	00:00:14	0.96
00:08:33	32.28	00:08:43	32.97	00:00:10	0.69
00:09:19	35.44	00:09:56	37.98	00:00:37	2.54
00:09:59	38.19	00:10:09	38.87	00:00:10	0.69
00:10:14	39.22	00:10:45	41.35	00:00:31	2.13
00:10:48	41.55	00:11:03	42.58	00:00:15	1.03
00:11:12	43.20	00:12:01	46.57	00:00:49	3.37
00:12:01	46.57	00:13:30	52.68	00:01:29	6.11
00:13:45	53.71	00:14:16	55.84	00:00:31	2.13
00:14:18	55.98	00:14:26	56.52	00:00:08	0.55
00:14:30	56.80	00:15:18	60.10	00:00:48	3.30
00:15:19	60.16	00:15:32	61.06	00:00:13	0.89
00:15:37	61.40	00:16:23	64.56	00:00:46	3.16
00:17:02	67.24	00:17:03	67.31	00:00:01	0.07
00:17:11	67.86	00:17:15	68.13	00:00:04	0.27
00:17:21	68.54	00:17:48	70.40	00:00:27	1.85
00:17:48	70.40	00:18:02	71.36	00:00:14	0.96
00:18:03	71.43	00:18:22	72.73	00:00:19	1.30
00:18:22	72.73	00:19:29	77.34	00:01:07	4.60
00:19:38	77.95	00:20:48	82.76	00:01:10	4.81
00:20:49	82.83	00:21:28	85.51	00:00:39	2.68
00:21:30	85.65	00:21:41	86.40	00:00:11	0.76
00:21:43	86.54	00:21:59	87.64	00:00:16	1.10
00:22:02	87.84	00:22:33	89.97	00:00:31	2.13
00:22:34	90.04	00:22:53	91.35	00:00:19	1.30
00:22:55	91.48	00:22:56	91.55	00:00:01	0.07
00:22:58	91.69	00:24:59	100	00:02:01	8.31

THEME IN	%	THEME OUT	%	DURATION	%
00:01:05	1.51	00:01:33	3.43	00:00:28	1.92
00:04:43	16.48	00:04:46	16.69	00:00:03	0.21
00:18:47	74.45	00:19:07	75.82	00:00:20	1.37
00:20:06	79.88	00:20:25	81.18	00:00:19	1.30

Coco: Act 2

SEQUENCE	START	%	END	%	DURATION	%
JB	00:24:59	0	00:54:24	62.32	00:29:25	62.32
JC	00:54:24	62.32	01:06:51	88.70	00:12:27	26.38
AiL	01:06:51	88.70	01:12:11	100	00:05:20	11.30

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:24:59	0	00:27:30	5.33	00:02:31	5.33
00:27:43	5.79	00:27:53	6.14	00:00:10	0.35
00:29:01	8.55	00:29:06	8.72	00:00:05	0.18
00:29:25	9.39	00:29:42	9.99	00:00:17	0.60
00:29:48	10.20	00:30:09	10.95	00:00:21	0.74
00:30:10	10.98	00:30:49	12.36	00:00:39	1.38
00:30:54	12.54	00:31:17	13.35	00:00:23	0.81
00:31:18	13.38	00:31:38	14.09	00:00:20	0.71
00:31:40	14.16	00:31:42	14.23	00:00:02	0.07
00:31:44	14.30	00:31:47	14.41	00:00:03	0.11
00:31:48	14.44	00:32:42	16.35	00:00:54	1.91
00:32:43	16.38	00:33:36	18.26	00:00:53	1.87
00:33:40	18.40	00:33:51	18.79	00:00:11	0.39
00:34:06	19.31	00:34:58	21.15	00:00:52	1.84
00:34:58	21.15	00:35:35	22.46	00:00:37	1.31
00:35:37	22.53	00:35:46	22.85	00:00:09	0.32
00:35:46	22.85	00:35:51	23.02	00:00:05	0.18
00:35:59	23.31	00:36:12	23.76	00:00:13	0.46
00:36:12	23.76	00:37:06	25.67	00:00:54	1.91
00:37:16	26.02	00:37:37	26.77	00:00:21	0.74
00:37:48	27.15	00:37:49	27.19	00:00:01	0.04
00:37:53	27.33	00:37:55	27.40	00:00:02	0.07
00:38:05	27.75	00:38:16	28.14	00:00:11	0.39

00:38:26	28.50	00:38:48	29.27	00:00:22	0.78
00:39:30	30.76	00:40:10	32.17	00:00:40	1.41
00:40:11	32.20	00:40:36	33.09	00:00:25	0.88
00:40:36	33.09	00:41:30	34.99	00:00:54	1.91
00:42:38	37.39	00:43:10	38.52	00:00:32	1.13
00:43:12	38.59	00:43:45	39.76	00:00:33	1.17
00:43:51	39.97	00:45:20	43.11	00:01:29	3.14
00:45:32	43.54	00:45:51	44.21	00:00:19	0.67
00:45:53	44.28	00:45:59	44.49	00:00:06	0.21
00:46:04	44.67	00:46:07	44.77	00:00:03	0.11
00:46:16	45.09	00:46:41	45.97	00:00:25	0.88
00:46:46	46.15	00:46:55	46.47	00:00:09	0.32
00:46:57	46.54	00:47:03	46.75	00:00:06	0.21
00:47:06	46.86	00:48:31	49.86	00:01:25	3.00
00:49:14	51.38	00:50:50	54.77	00:01:36	3.39
00:51:00	55.12	00:52:47	58.90	00:01:47	3.78
00:52:49	58.97	00:53:18	59.99	00:00:29	1.02
00:53:35	60.59	00:55:00	63.59	00:01:25	3.00
00:55:01	63.63	00:55:05	63.77	00:00:04	0.14
00:55:07	63.84	00:56:18	66.35	00:01:11	2.51
00:56:18	66.35	00:57:08	68.11	00:00:50	1.77
00:57:08	68.11	00:57:09	68.15	00:00:01	0.04
00:57:09	68.15	00:58:02	70.02	00:00:53	1.87
00:58:16	70.52	01:04:51	84.46	00:06:35	13.95
01:04:54	84.57	01:06:54	88.81	00:02:00	4.24
01:07:22	89.80	01:09:43	94.77	00:02:21	4.98
01:09:43	94.77	01:10:44	96.93	00:01:01	2.15
01:10:44	96.93	01:11:41	98.94	00:00:57	2.01
01:11:49	99.22	01:12:09	99.93	00:00:20	0.71
01:12:10	99.96	01:12:11	100	00:00:01	0.04

THEME IN	%	THEME OUT	%	DURATION	%
00:33:41	18.43	00:33:44	18.54	00:00:03	0.11
00:44:11	40.68	00:44:54	42.20	00:00:43	1.52
00:45:05	42.58	00:45:20	43.11	00:00:15	0.53
00:53:42	60.84	00:54:20	62.18	00:00:38	1.34
01:03:54	82.45	01:04:24	83.51	00:00:30	1.06
01:10:54	97.28	01:11:27	98.45	00:00:33	1.17

Coco: Act 3

SEQUENCE	START	%	END	%	DURATION	%
FP	01:12:11	0	01:29:27	86.41	00:17:16	86.41
A: S	-	-	-	-	-	-
A: L	01:29:27	86.41	01:32:10	100	00:02:43	13.59

MUSIC IN	%	MUSIC OUT	%	DURATION	%
01:12:11	0	01:12:48	3.09	00:00:37	3.09
01:12:50	3.25	01:13:41	7.51	00:00:51	4.25
01:13:45	7.84	01:15:40	17.43	00:01:55	9.59
01:15:40	17.43	01:16:05	19.52	00:00:25	2.09
01:16:07	19.68	01:16:31	21.68	00:00:24	2.00
01:16:31	21.68	01:16:50	23.27	00:00:19	1.58
01:16:51	23.35	01:18:05	29.52	00:01:14	6.17
01:18:06	29.61	01:18:25	31.19	00:00:19	1.58
01:18:44	32.78	01:20:20	40.78	00:01:36	8.01
01:20:22	40.95	01:22:45	52.88	00:02:23	11.93
01:22:54	53.63	01:23:34	56.96	00:00:40	3.34
01:23:39	57.38	01:24:49	63.22	00:01:10	5.84
01:24:59	64.05	01:26:32	71.81	00:01:33	7.76
01:26:58	73.98	01:28:04	79.48	00:01:06	5.50
01:28:04	79.48	01:30:19	90.74	00:02:15	11.26
01:30:19	90.74	01:32:10	100	00:01:51	9.26

THEME IN	%	THEME OUT	%	DURATION	%
01:12:11	0	01:12:28	1.42	00:00:17	1.42

01:13:51	8.34	01:14:34	11.93	00:00:43	3.59
01:14:54	13.59	01:15:15	15.35	00:00:21	1.75
01:24:07	59.72	01:24:40	62.47	00:00:33	2.75
01:25:35	67.06	01:26:03	69.39	00:00:28	2.34

The Incredibles: Act 1

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:28	0	00:11:34	30.82	00:11:06	30.82
T	00:11:34	30.82	00:34:56	95.70	00:23:22	64.88
CtT	00:34:56	95.70	00:36:29	100	00:01:33	4.30

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:02:03	4.40	00:03:08	7.40	00:01:05	3.01
00:03:16	7.77	00:04:28	11.11	00:01:12	3.33
00:04:33	11.34	00:05:46	14.72	00:01:13	3.38
00:05:52	14.99	00:06:41	17.26	00:00:49	2.27
00:06:43	17.35	00:07:39	19.94	00:00:56	2.59
00:07:41	20.04	00:07:57	20.78	00:00:16	0.74
00:08:07	21.24	00:08:22	21.93	00:00:15	0.69
00:08:24	22.03	00:08:41	22.81	00:00:17	0.79
00:09:15	24.39	00:10:00	26.47	00:00:45	2.08
00:10:00	26.47	00:10:11	26.98	00:00:11	0.51
00:10:11	26.98	00:11:34	30.82	00:01:23	3.84
00:15:45	42.43	00:16:16	43.87	00:00:31	1.43
00:19:17	52.24	00:19:28	52.75	00:00:11	0.51
00:21:29	58.35	00:21:35	58.63	00:00:06	0.28
00:22:15	60.48	00:22:20	60.71	00:00:05	0.23
00:22:48	62.01	00:23:00	62.56	00:00:12	0.56
00:23:09	62.98	00:23:22	63.58	00:00:13	0.60
00:23:25	63.72	00:23:47	64.74	00:00:22	1.02
00:23:49	64.83	00:25:04	68.30	00:01:15	3.47
00:27:13	74.27	00:27:19	74.55	00:00:06	0.28
00:28:46	78.57	00:29:31	80.66	00:00:45	2.08
00:31:25	85.93	00:33:47	92.50	00:02:22	6.57
00:34:51	95.47	00:36:03	98.80	00:01:12	3.33
00:36:28	99.95	00:36:29	100	00:00:01	0.05

MOTIF #	MOTIF IN	%	MOTIF OUT	%	DURATION	%
1	00:02:04	4.44	00:02:09	4.67	00:00:05	0.23
2	00:02:09	4.67	00:02:10	4.72	00:00:01	0.05
3	00:02:21	5.23	00:02:32	5.74	00:00:11	0.51
1	00:02:45	6.34	00:02:49	6.52	00:00:04	0.19
1	00:02:52	6.66	00:02:55	6.80	00:00:03	0.14
1	00:03:22	8.05	00:03:26	8.24	00:00:04	0.19
3	00:03:48	9.25	00:04:01	9.86	00:00:13	0.60
3	00:04:44	11.85	00:04:46	11.94	00:00:02	0.09
3	00:05:58	15.27	00:06:02	15.46	00:00:04	0.19
3	00:06:04	15.55	00:06:10	15.83	00:00:06	0.28
1	00:08:07	21.24	00:08:12	21.47	00:00:05	0.23
1	00:08:15	21.61	00:08:20	21.84	00:00:05	0.23
1	00:10:01	26.52	00:10:07	26.79	00:00:06	0.28
1	00:24:18	66.17	00:24:24	66.45	00:00:06	0.28
1	00:24:26	66.54	00:24:30	66.73	00:00:04	0.19
1	00:24:35	66.96	00:24:39	67.14	00:00:04	0.19
3	00:24:40	67.19	00:24:43	67.33	00:00:03	0.14
3	00:24:45	67.42	00:24:48	67.56	00:00:03	0.14
3	00:24:51	67.70	00:24:53	67.79	00:00:02	0.09
1	00:29:03	79.36	00:29:06	79.50	00:00:03	0.14
1	00:33:16	91.07	00:33:26	91.53	00:00:10	0.46
1	00:33:29	91.67	00:33:35	91.95	00:00:06	0.28
1	00:35:32	97.36	00:35:39	97.69	00:00:07	0.32
1	00:35:47	98.06	00:35:51	98.24	00:00:04	0.19

Up: Act 1

SEQUENCE	START	%	END	%	DURATION	%
GD	00:00:45	0	00:11:36	46.33	00:10:51	44.84
T	00:11:36	46.33	00:21:09	87.12	00:09:33	39.47
CtT	00:21:09	87.12	00:24:10	100	00:03:01	12.43

MUSIC IN	%	MUSIC OUT	%	DURATION	%
00:00:45	0	00:02:39	8.11	00:01:54	7.81
00:02:39	8.11	00:03:15	10.68	00:00:36	2.43
00:03:33	11.96	00:03:59	13.81	00:00:26	1.74
00:04:32	16.16	00:05:04	18.43	00:00:32	2.15
00:05:27	20.07	00:06:56	26.41	00:01:29	6.09
00:07:15	27.76	00:07:27	28.61	00:00:12	0.78
00:07:27	28.61	00:11:36	46.33	00:04:09	17.12
00:12:06	48.47	00:12:29	50.11	00:00:23	1.53
00:15:25	62.63	00:15:54	64.70	00:00:29	1.95
00:15:59	65.05	00:16:45	68.33	00:00:46	3.12
00:16:46	68.40	00:16:51	68.75	00:00:05	0.29
00:16:54	68.97	00:16:59	69.32	00:00:05	0.29
00:17:01	69.47	00:17:34	71.81	00:00:33	2.22
00:17:52	73.10	00:17:55	73.31	00:00:03	0.15
00:17:57	73.45	00:18:56	77.65	00:00:59	4.02
00:19:15	79.00	00:20:24	83.91	00:01:09	4.71
00:21:09	87.12	00:24:10	100	00:03:01	12.43

THEME IN	%	THEME OUT	%	DURATION	%
00:04:42	16.87	00:05:04	18.43	00:00:22	1.47
00:06:13	23.35	00:06:14	23.42	00:00:01	0.02
00:06:18	23.70	00:06:32	24.70	00:00:14	0.91
00:06:43	25.48	00:06:47	25.77	00:00:04	0.22
00:07:30	28.83	00:08:00	30.96	00:00:30	2.02
00:08:15	32.03	00:08:35	33.45	00:00:20	1.33
00:08:39	33.74	00:08:42	33.95	00:00:03	0.15
00:08:47	34.31	00:09:13	36.16	00:00:26	1.74
00:09:14	36.23	00:09:29	37.30	00:00:15	0.98
00:09:51	38.86	00:10:08	40.07	00:00:17	1.12
00:10:26	41.35	00:10:35	41.99	00:00:09	0.57
00:10:44	42.63	00:11:21	45.27	00:00:37	2.50
00:19:32	80.21	00:20:06	82.63	00:00:34	2.29
00:20:17	83.42	00:20:19	83.56	00:00:02	0.09
00:21:55	90.39	00:22:53	94.52	00:00:58	3.95
00:23:39	97.79	00:24:06	99.72	00:00:27	1.81

APPENDIX IV: Correspondence with Stephen M. Davis

Messages shared May 10th, 2016 via LinkedIn

SD: A lot of times with Pixar, the notes I take are specifically for timing and not for content description. The problem is that Michael [Giacchino] tends to discuss the cue concepts outside of the realm of a traditional spotting session. Also, a lot of times, the spotting decisions have been made by the director during the editing process and I am not privy to the details. This is certainly the case with Inside Out. Pixar does most of the temp music work before we even see any parts of the film. The original timings, which unfortunately are to earlier versions of the film before final cut, really don't mention anything but in and out times, and descriptions of those times on screen. I will be glad to send my spotting notes to you so you can take a look.

AS: I understand. I did worry that, with increasing ease to make editorial changes right up until the last minute, final timings may differ from those that the music team have worked to. I know this is certainly the case with other slightly less planned films; I understand that Wrath of the Titans changed so much right up until the deadline with reshoots and edits that composer Javier Navarrete ended up sending a sort of 'pick and mix' of stems to the dubbing stage and let the director piece together the final score from those. Your insight has been very useful. It confirms that the practice of the traditional spotting session is changing and so too perhaps, the placement of music with film. This will be at the core of my research. It would be very interesting to see your spotting notes if you are able to forward them on but, as you say, potentially not precisely what I need for this particular project. Many thanks for all of your help with this.

SD: Yes you are correct. With Pro Tools, directors have more of an ability to be "creative" with the composition. It's a bit unfair to composers because they have just as much right to tell their story as the other creative people too. We've run into issues where the changes to the score were so numerous during dubbing, that the composer's story was nowhere to be found. Imagine writing a book, and the publisher decides to take chunks of pages and just put them where they decide is better. While it might be possible to do, sometimes it does not make the story better. And it certainly isn't giving the author the ability to tell his story. Michael has been very lucky because the people he usually works with are very collaborative and appreciate what he's bringing to the project. That's why he works with the same people over and over. Given enough time, they are usually able to get to a point that makes everyone happy, so that by the time we get to the dubbing process, these changes have already been talked about, and now it's just a matter of making a good movie mix. Back in the tape days, you had fewer changes being made because of the impossibility of doing it, or the cost of redoing it. Sometimes those days are missed, but truth is, Pro Tools has made our lives a lot easier. I will be back in town after this weekend and will forward the notes from Inside Out to you. Best, Steve