The Sound Track

... is the combination of voice, music and other sound in audiovisual productions. The power of the sound track and how it is designed is the subject of this book.

... provides insight into the creation of an audiovisual production and the associated contexts such as film, television and advertising. The book describes the individual design processes for the media composer and the sound designer and their collaboration with such disciplines as editing and direction.

... combines analyses and theories from science and from 'the theory of practice', all based on the following criterion: 'Is this of any use to me as a media composer or sound designer?'

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Rens Machielse

the sound track

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Rens Machielse

designing dialogue, music and other sound for audiovisual productions

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the sound track

Stevie Wonder once said, when asked what he did for recreation
other than playing music, 'Oh, I go to the movies a lot'.
There was a slightly surprised gap, I'm sure, in the conversation.
He said, 'No, no, I love the sound of films.'
And I knew exactly what he meant, I mean,
there is nothing like the sound of a film.[1]

1 Figgis 2003: 5

Rens Machielse

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designing dialogue, music and other sound
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HKU Professorship Performative Processes

the art of HKU new practices new solutions

content

the sound designer's design process 184

contexts 230

foreword

Why write a book devoting specific attention to the sound track? If this is what you're wondering, then you should watch the Omaha Beach scene from Steven Spielberg's film *Saving Private Ryan*. Twice. Once with the sound off, then once again with it on.[2] The first time, you can take a detached view, wondering how they staged it all, for example. The second time, you'll find yourself sucked into the scene, into the midst of the violence, becoming almost physically sick, experiencing for yourself the main character's emotions and, at some point, you won't actually want to watch any more. Even if you look away, though, the feeling stays, because sound is inescapable.

Thanks to the sound track, we are in the story, *in* the drama. The sound track connects us with the experiences and emotions of the characters and determines our emotional focus. The sound track can engage with our fears, eliciting a physical reaction. Silences can be threatening or reassuring. The sound of a character (voice, footsteps) tells us a lot about that character's personality.

2 The Omaha Beach scene portrays the allied landing on Omaha Beach in France, marking the beginning of the end of World War II.

Sound can make a location far bigger than the screen, warn us of threatening danger, arouse our curiosity and steer our gaze. Our ears are directly connected to our memories and emotions. Think about how our emotional state is affected when we hear a favourite blast from the past on the radio or a crying baby.

The power of the sound track and how to design one are what this book is about. It’s based on integrating practical experience and theoretical knowledge and on the cooperation of many colleagues and students with whom I've had the privilege to converse and collaborate over the years.


and yet, at some point,


you get started

introduction

This book is about designing the sound track of an audiovisual production, such as a feature film, commercial or documentary. By sound track I mean the complete audio track comprising *voice* (dialogue plus any voice-over), *music* and *other sounds* (such as sound effects and ambiences).[3] Together, the sound track and the *visual track* (the picture) constitute the audiovisual production. This book doesn't discuss music and sound for games and other forms of interactive audiovisual productions as, in those types of production, it is often the interaction with the user or player that determines the ultimate sound track. The design of a sound track for such interactive productions is another story and can't be compared with the sound track for a film, commercial or documentary.

If I define it precisely, then, this book focuses on 'linear live-action audiovisual productions' and it's written for those wishing to get involved in sound and music in these types of production.[4] This will be primarily students and young professionals; students studying to become media composers and sound designers and young professionals taking their first steps in this field. The book can also serve as a reference work for those working in music and sound for media and it's certainly aimed at (prospective) producers, directors and editors, who

3 The classification of voice, music and other sound is traditional in the film industry. The sound track as I define it therefore differs from the soundtrack as defined in the United States, in particular. That soundtrack refers to the film score alone.

4 Linear as opposed to non-linear productions where the viewer/user (partly) determines the timeline. Live action indicates the use of live, rather than drawn or animated characters.

will often be working with those composers and sound designers. In that case a certain degree of insight, into their working methods is essential for effective, efficient collaboration.

the designer's point of view

As the title implies, it's about designing sound tracks. What exactly does that mean and why is such a perspective important if you want to work in music and sound for audiovisual media? To clarify matters, I will first examine the difference between *designing* and *creating*.

There are many theories and viewpoints with regard to (the difference between) designing and creating. One generally-accepted distinction is that designing entails the entire process from concept to end product, including all kinds of additional aspects such as ergonomics, user research and pricing, while creation is just one step within that process. In the case of product design, for example, such a step involves determining the characteristics of the end product: What does it look like? What are its colour, texture and shape? In such an approach, a designer will be engaged in the entire design process, while a creator will work on a specific part of that process.

This book is written from the point of view of the designer. I will therefore be exploring the entire process entailed in producing the sound track. That's what sets this book apart, as the accepted approach in existing studies is to adopt the point of view of one individual discipline (such as the composition of film music), often using analyses of existing material such as film scores. Such an approach corresponds with the creator's point of view, where a creator is someone who works on a specific element of the sound track. That could be a film composer who composes the film score in accordance with various specifications and preconditions.

The designer's perspective means examining the entire design process for the sound track from a broader and more methodical point of view. It entails more than just the methods and strategies used for ultimately producing film music or sound design. It's also about the collaborations and other forms of interaction with the various disciplines throughout the entire design process, the structuring and organisation of that

design process, the context in which the design process takes place, the role of technology in all that and – last but not least – how the target audience perceives the end product. That doesn't mean to say there is no analysis of music scores or sound design in this book but, where there is any, it is deployed from the above perspective.

One of the main reasons for viewing the process from a designer's point of view is that the boundaries between voice, music and other sound in a sound track are becoming increasingly difficult to define. With the distinction between the three categories steadily blurring, it makes sense view the sound track as a whole, rather than from a purely musical perspective, for example.

A second reason for applying a designer's point of view is that digital technology has rendered virtually endless the possibilities for interaction between disciplines such as directing, editing, music and sound design. The editing of the visual track is entirely digital and can be revised up to the last moment. The same applies to the sound track so, in principle, the visual track and the sound track can influence each other up to the last moment. All the more reason to view the sound track from a broader perspective.

The last and most important reason for the designer's point of view is that the compilation of the final sound track constitutes a real design. The person responsible for that compilation will always be required to work on the basis of an idea, a concept, in other words a design for the sound track; that is the only way to achieve a sound track with *meaning*.

the layout of this book

To write this book, I studied analyses and theories from the more academic world that are useful for the practice of the media composer and sound designer.[5] Then there is the 'theory of practice': theory that is not scientifically substantiated but ensues from practical experience and is therefore useful for that practice. This book is a combination of those two perspectives, based on the criterion: 'Is this of any use to me as a media composer or sound designer?'

5 These are often the analyses and theories of scientists researching into the role of the sound track in audiovisual productions who, themselves, have no practical experience.

This book comprises five chapters. *Chapter one* discusses a number of the more theoretical basic characteristics and principles of the various types of audiovisual production and of the interaction between the visual and sound tracks.

Chapter two examines practice, based on the various stages in feature film production, this being the most complex audiovisual production, entailing all possible aspects of the sound track and associated collaborations. Where relevant, I will also discuss the specific differences between a feature film and, for instance, a documentary or commercial. In this chapter I will also frequently reference the basic characteristics and principles mentioned in the first chapter, making the link between theory and practice.

There is also a discussion of the major disciplines encountered by the media composer or sound designer during those various stages: mainly script/screenplay[6] (the scriptwriter/screenwriter), production (the producer) and editing (the editor).[7] Where relevant, the relationship with any commissioning party will also be examined. Depending on the situation, one discipline may be represented by several people. Production, for example, often involves various functions, such as the producer, assistant producer and executive producer. There is generally only one screenwriter, but big drama series often have a team of writers. The same applies to editing and directing. In the case of music, there is almost always one media composer, who may work with a team incorporating such disciplines as orchestration.

From that point of view, sound design is the most problematic discipline, as the term can be interpreted in various different ways and all kinds of 'activities' fall under sound design. The sound designer may be the person who only designs specific sound effects and ambiences, or they may be the one designing the ultimate total audio aspect of an audiovisual production: that meaningful sound track consisting of music, dialogue, sound effects and ambiences. In this book, I am assuming a

6 The terms *script* and *screenplay* are often interchangeable. In the media industry in the Netherlands, the word 'script' refers to the elaboration of a *programme* that is to be recorded in images. 'Screenplay' refers to a detailed story with a scene structure like that used for *dramatised productions* (te Nuijl 2011). From now on, in this book I will use the term 'screenplay'.

7 Depending on the production type, there may also be some conferring with disciplines such as graphic design and the camera department (see chapter 2).

combination of the above: the designing of those various 'parts' but also the designing of the ultimate sound track whereby, for the final mix, the sound designer may collaborate with a re-recording mixer.[8]

In *chapters three and four* I describe the composer's and sound designer's specific design processes and discuss the two disciplines' methods and strategies. Questions such as 'Where do you begin?', 'Where do you get ideas?', 'How do you elaborate on an idea?' and 'What do you do when you get stuck?' are addressed in these chapters, harking back regularly to chapter 2.

Sound and music examples from the previous chapters (including the dipole model in chapter 1) can be found on the book's website (www.desoundtrack.nl). I will be updating the site with relevant additions and developments regarding the design practice of media composers and sound designers.

In *chapter five* I explore the possible contexts in which you can work as a media composer or sound designer and the associated process-based, financial and copyright aspects. Here, too, I reference the practice described in the second chapter.

Whether you are a composer or a sound designer, it's advisable to explore both design processes. A sound designer will gain more insight into the media composer's specific process and vice versa. If you're reading this book from the perspective of the producer, director or editor, it may well provide new opportunities for deploying and collaborating with the sound designer and media composer. The tone of the first chapter is slightly more distant, as I am primarily discussing the 'product' (the sound track combined with the visual track). Later in the book, I adopt a more personal approach as I further explore the individual design processes of the media composer and sound designer.

8 The *re-recording mixer* is the one who does the final mix. The term refers to the fact that 'sounds' that have already been recorded are re-recorded during the final mix, using a mixing desk. Sometimes, the sound designer is responsible for the final mix, too, and is therefore also the re-recording mixer.

Finally: wherever you see ‘he’ in this book you can also read ‘she’. The disciplines that create the sound track are still predominantly male domains. Fortunately, developments in the associated training courses provide hope for the future, but for the readability of this book I have chosen to use the male or plural form rather than writing ‘he/she’ and ‘his/her’ all the time.


image comes
through
the front door


sound comes
in through
the back door

basic principles of audiovisual productions

classification

Audiovisual productions are made with a variety of aims: many productions are intended as entertainment, some are simply meant to inform, some are created as autonomous works of art and others are aimed at establishing an 'identity', in other words branding. This generates the following classification:

- *entertainment*, the most common forms being feature films, television films, short films, drama series and other programme types, such as quizzes, reality TV and talk shows.
- *information*, the most common forms of which are documentaries, film reports and educational and instruction films.
- *branding*, including commercials and all kinds of corporate film.

From this classification, I have omitted autonomous audiovisual works of art, including video clips, as these are often highly-specific, personal and experimental audiovisual expressions. It is important, however, to realise that this genre – and the video clip in particular – has been highly influential in the development of audiovisual production in terms of form and content. All the inevitable experimentation in this genre has swelled the audiovisual world's vocabulary, with new editing forms, the possibility of abandoning chronology and combinations of image and sound that were previously unthinkable.[9]

9 Take a film such as Quentin Tarantino's *Pulp Fiction*, which jumps back and forth in time.

To put the above classification into perspective, we should remember that, in reality, there are all kinds of combination. Entertainment is regularly used to clarify specific information or make it more accessible, hence the term 'infotainment'. Companies and organisations regularly commission purely entertaining or informative audiovisual productions that simultaneously contribute to the company or organisation's branding. Another mixed form is the docudrama, a combination of documentary and drama in which some scenes in a documentary are acted. All in all, it's more a fluid spectrum than the above strict classification.

Consequently, there is a great variety of platforms and channels on which audiences can see and hear the various audiovisual productions: streaming via the internet on a smartphone, tablet or laptop, via television or in the cinema, but also at trade fairs and shows, on billboards in public spaces, in museums and so forth. Sometimes, an audiovisual production is designed solely for a specific platform or channel, the advantage of which is that the technical specifications are then also precise: an audiovisual production for smartphones alone, for example, requires no surround mixing. Audiovisual productions often need to be multifunctional, however, so they can be viewed both in the cinema and on a smartphone, for instance. That, evidently, makes demands on the design process, which I will discuss in the following chapters.

narrative

Looking at the underlying principles with which audiovisual productions are made, we see that there is almost always a *narrative*, a story, which involves storytelling. Storytelling is an age-old need and way for people to understand the world. It's the oldest form of knowledge transfer. Since the dawn of mankind, to retain knowledge, stories have been passed down from generation to generation. The power of stories lies in the ability to explain and retain. Neurological research has shown that we think in narrative structure and generally remember facts in story form. To understand information, we therefore look for stories that constitute a coherent whole, making them easier to remember. Even if the maker of an audiovisual production has no intention of telling a story we, as the audience, will nevertheless always tend to look for the

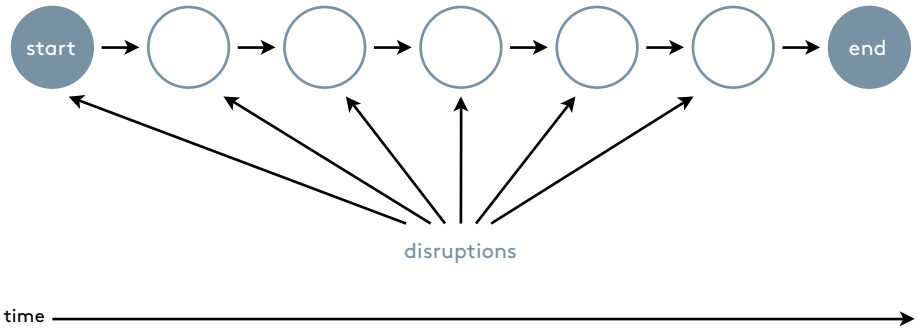
underlying 'story'. It's important for media composers and sound designers to remember this.

the structure of a story

In audiovisual productions, the formal basic definition of narrative, or storytelling, is the '*representation of a perceptible development in time: a transition takes place from one situation to another and that change is brought about by an action – or lack thereof – by something or someone*'.[10] Represented visually and described in slightly more detail, that looks roughly like this: there is a stable start situation (1), which is disrupted (2) due to the actions – or absence thereof – of something or somebody. That disruption sets in motion a development (3), which leads to a transition from the stable start situation to a stable end situation (4), with 'stable' referring to the emotional state of the characters involved.

Example: at the beginning of a film, an existing, stable situation is established (we see a happy family). This is soon disrupted (the man is seduced by his secretary), leading to various developments (the woman divorces him, the secretary leaves the man and resigns, the man's company goes bankrupt, the woman is forced to start her own company and becomes successful in business), ultimately resulting in a new stable situation (the man is homeless, the woman has a successful company and a relationship with the former secretary). That new stable situation might be the end of the film, or it might be the end of a scene, after which the situation is disrupted once more – by an action – beginning a new development. A graphic representation of a film constructed in this way looks like this:

10 Verstraten 2009: 21



Stable situations in films are generally short lived, as there is nothing as boring for the audience as a stable situation. In the above example, the start situation (we see a happy family) will therefore not last long and chiefly serves to introduce the characters.

In soap series such as *EastEnders*, the basic principle of narrative is clearly recognisable. In such soaps, numerous story lines run parallel and there are always a number of lines 'in development', with the most thrilling development featuring as the final scene of an episode. Episodes don't conclude with a new stable 'end situation'; they finish at the climax of the development, creating the renowned cliff-hanger. Everyone is wondering what will happen next and will therefore want to watch the next episode. That episode will have the same structure, though, so viewers keep watching the series day after day.

elements of narrative

One important element in narrative is therefore *cause and effect*: an action (or its omission) leads to a development, resulting in a new situation. Other major elements are *time* (the development from one situation to the other takes place in a particular order in time) and *space* (where this all takes place). One final element of narrative that should not be underestimated is *the viewer themself*. While, in the past, most films had a clear passage of time with all the scenes chronologically linked by the principle of cause and effect, nowadays many films give scant information on the who, how, what and why. These developments were set in motion by directors such as David Lynch and Quentin Tarantino,

but also by the emergence of the video clip and the advertising industry. This type of film challenges you, as the audience, to construct the (or a) story yourself, a challenge the average viewer will take up, as we simply want to understand exactly what it is we are watching. Most David Lynch films are multi-interpretable and therefore a good example of the above. All kinds of personal interpretations can be found on the internet, too.

Finally, there are various ways of deploying the above elements in telling a story. Over the years, these methods have led to what we call genres, in other words audiovisual productions that exhibit specific similarities in their storytelling methods. Typical television genres include the aforementioned soaps, situation comedies and police series, but also quiz shows, talk shows and current affairs programmes.[11] Film genres include romantic comedies, thrillers, westerns, horror and science fiction.[12] The differences between all those genres and, therefore, their definitions, are often difficult to pin down and change over time. Visually, for example, the director Sergio Leone's westerns still exhibit the characteristic elements of the western (a vast, dry landscape, the lonely cowboy, etc.) but, from an auditory point of view, the composer Ennio Morricone has clearly shifted the boundaries of the western by using all kinds of unusual instruments and sounds, such as Sicilian folk instruments and the Fender electric guitar.

With audiovisual productions it's important to realise that both the image (the visual track) and the sound (the sound track) can individually tell a story. Silent films proved that it's quite possible to tell a story in moving pictures alone. The possibility of telling a story through sound alone has already been demonstrated in the past by radio and podcasts. How image and sound are combined in an audiovisual production and just what role the sound track can play is discussed extensively in the following paragraphs. These paragraphs focus on fiction films, feature films, as that is where you find the greatest variety of combinations of the visual and sound tracks.[13] I will indicate any essential differences between the documentary and the commercial, for instance, or between the various film genres.

11 Abbreviated to *sitcom*.

12 Abbreviated to *romcom*.

13 *Fiction* indicates that the story takes place chiefly in the author's imagination, as opposed to *non-fiction*, which is based on actual facts.

visual track

In principle, the visual track consists of a collection of individual shots assembled consecutively by the editor. It is already quite surprising that we, as viewers, accept and appear to make sense of those individual shots. According to Walter Murch, an American editor and sound designer who was responsible for the editing and sound design for such films *Apocalypse Now*, *the Godfather* series and *The English Patient*, this is partly because our physical way of looking at things already entails (a kind of) editing:

> Here's a wonderfully simple experiment which clearly shows that our visual cortex is also routinely editing our perceptions – while we are wide awake – without our ever being aware of it. Stand about eight to ten inches from a mirror and look at your left eye. Now look at your right eye, and then back at your left eye. Do this five or six times in quick succession. You will not notice any movement – your eyes will seem to be completely still. But this is in fact not the case, as an observant friend will immediately tell you: your eyes move quite a lot with each shift of focus.
>
> The blurred swish during the movement of the eye is somehow snipped from our conscious awareness, and we are left with just the significant images before and after the movement. Not only do we not see the blurred movement, we are unaware that anything has been removed. And this is happening all the time: with every movement of our eyes, an invisible editor is at work, cutting out the bad bits before we can ever see them.[14]

editing process

The basic material for the visual track is the footage shot on the set.[15] The editor is responsible for editing this material in such a way that it creates a narrative. Editing therefore concerns the basic elements of narrative: cause and effect, time and space. By editing shots in a specific order, for example, you can give a completely different cause to an act or action being portrayed.[16] You can also change the perception

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14 Ondaatje 2002: 50

15 A *film set* is a location or studio where a film crew comes to make (picture and sound) recordings for a film.

16 A *shot* is one uninterrupted film recording. It is everything recorded between switching the camera on and off. Generally, a number of takes are made of each shot, so the best take can be chosen during editing. A *scene* is a combination of a number of shots. These shots group together one act or event and are all recorded at the same location and at the same time. We speak of unity of time, place and action, as in classical Greek theatre. A *sequence* is then a series of scenes that form a separate narrative unit, generally linked by unity of location or unity of time.

of time or space through editing. In one of the final sequences of the film *2001: A Space Odyssey*, for example, by using of a number of rapid jump cuts, the main character, Bowman, sees himself change from a middle-aged man to an older man and, finally, a dying man.[17]

The editing process is based on the individual shot and the decisions relating to that shot: 'Which shot shall I use? Which take of this shot shall I use? Where should I start it? Where should I end it?' One important basic concept is that editing should never confuse the viewer (unless intentionally): the editing must always keep the viewer informed and involved in the story. As I mentioned above, it therefore no longer goes without saying that everything happens in chronological order. The aforementioned basic concept does still apply, though: a narrative has to be created, composed of a montage of shots, without that montage drawing unnecessary attention to itself. Apart from the story, the important principles are the *emotion* you want the montage to evoke in the audience and the *rhythm* of the montage.

The shots in a scene can be edited in various ways, according to the editor's talent and experience. Roughly speaking, the editing process can be divided into a number of stages: per shot, editing shots into an initial *rough cut* based on the screenplay; refining the rough cut, deciding the tempo and perhaps re-editing into another order of shots until you arrive at the *fine cut*. The moment the cut is considered final, this is referred to as the *picture lock*. Editing can be done entirely digitally, however, making it possible to intervene up to the last moment, so the stages are actually no longer successive or clearly distinctive. In practice, the editing process continues for as long as possible, while different alternatives for scenes are tried out. Naturally, all this depends on the time and budget available.

One specific editing method worth further study is that of the aforementioned Walter Murch. When rough cutting a scene, Murch turns off the sound, even if it's a dialogue scene. He doesn't want to be distracted by the 'raw' set sound, which is often only pure dialogue. He likes to first be guided by what he sees. Once he has edited a scene in this way, he turns on the sound and is confronted with the dialogue. Sometimes it corresponds with his ideas, but sometimes it doesn't work: then he has

17 A *jump cut* is the montage of two shots that show the same subject, but differ in time.

selected a take that was good visually, but not from an auditory point of view, so he has to use the audio from another take. This frequently produces interesting 'surprises': combinations of image and sounds that he, himself, would never have thought of if he had already worked with the sound while editing the visual track.

What Murch is actually indicating is that sound can steer and influence the meaning and the audience's perception of a scene to a great extent. His strategy is to edit a scene based purely on the visual content, while imagining a non-existent sound track. After that, he turns on the sound and sees what surprises there are and whether they are usable or even provide a new perspective for the scene as a whole. In other words, Murch uses 'chance' as part of his design method, an approach you also find in the way he treats music in film. When a composer comes to him with music carefully composed for specific scenes, Murch will try the various compositions out at other points in the film, happily cutting, pasting, speeding up, slowing down and reversing the music. All this with the idea that unplanned combinations of image and music can provide new and interesting perspectives.

Another possibly important aspect of creating the final visual track is CGI, a form of digital image technology capable of generating all kinds of images.[18] While not all films, by any means, use these techniques, films set in surrealistic or science fiction-style worlds, for instance, or historical locations that are too expensive to rebuild entirely can be highly dependent on this technology.

sound track

The three categories within the sound track are, as I mentioned, voice, music and other sound. A number of important basic characteristics in the context of film are *pitch*, *volume*, *rhythm* and *timbre*.[19] These are characteristics that can be determined objectively but can often be experienced and perceived subjectively and are therefore part of the

18 CGI = computer generated imagery. In the Dutch film *Publieke Werken*, for example, the Prins Hendrikkade location as it was in 1888 was entirely digitally recreated by means of CGI.

19 *Pitch* is the perceived degree of highness or lowness of a tone or sound. *Volume* is a quantity that objectively represents the subjectively-perceived sound level. *Rhythm* is a specific repetition in time of musical accents that display a specific pattern or regularity. *Timbre* is the often subjectively-perceived characteristic of the noise of a sound, voice or musical instrument by means of which those sounds, voices or instruments distinguish themselves.

psychoacoustics, the science that studies how people experience sound. Such characteristics are important from a narrative viewpoint, primarily because they can relate to the basic elements of narrative: cause and effect, time and space. Depending on the perceived pitch, volume and timbre and the combination of all three, based purely on our perception of a sound, we can determine if an explosion takes place nearby or far away and in the open air or in a church. In the case of a whispered dialogue, we can also imagine that the characters involved are close together. And if the timbre of a sound is of a rhythmic character, as with the revolving water mill in the opening scene of *Once Upon a Time in The West*, that sound influences our perception of time in that scene.

Another classification of sound based on characteristics is that of *stochastic sound* as opposed to *incidental sound*. Stochastic sound is continuous, arbitrary and present at a more or less constant level, producing (a kind of) general noise. Take the sound of the aeroplane engines during a flight, for example. As the name implies, incidental sound is incidental. A ringing telephone, for example or, staying with the example of a flight, an announcement by the stewardess. Stochastic sound is quickly ignored by our brains because its static character doesn't lead us to believe there are any threats or developments. We only become conscious of it again once it stops or if there is a rapid enough change. Incidental sound, on the other hand, can indicate threats or herald a development. Such sound therefore quickly penetrates into our consciousness. Incidentally, even though stochastic sound doesn't do so, that doesn't mean it doesn't affect us. People living close to a busy motorway often sleep badly and frequently suffer from stress symptoms. Stochastic sound in the form of a sound ambience in the sound track can therefore influence our perception of the film, even though we may not be aware of the sound.

Another distinction that is important for the sound track is that between *foreground and background sound*. Sound that is acutely important for the listener is called foreground sound. In the sound track, that is generally the dialogue. Later on in this chapter, we will also see other examples in which placing a specific sound in the sound track as foreground sound is done to draw the audience's attention to the associated action. Something related to foreground and background

sound is *sound masking*. A loud sound can mask a softer sound if they are within the same frequency range (*frequency masking*). *Temporal masking*, on the other hand, relates to sounds that are not heard at the same moment.

A loud sound can mask a soft sound that does not occur at precisely the same moment. This seems clear from the example of, say, a gunshot covering up a soft sound for a time after the shot, and is called post or forward masking. A higher level masker (such as our gunshot) extends the time of masking further than a lower level one, as might be expected. One of the most astonishing findings of psychoacousticians that, at first glance, confounds a scientific mind is that temporal masking works in the other direction as well. What is amazing is that the same gunshot covers up sound momentarily even before the shot! This occurs because the louder sound is perceived more quickly by the brain than the softer one, and this is called premasking or backward masking. The extent of this effect is not very large, with most of its utility occurring within 10 msec. Nevertheless, sound editors use backward masking frequently to cover up discontinuities at edits. A sound editor will edit music "on the beat" by cutting just before a loud cymbal crash is to occur. The cymbal crash then covers up the fact that there may be a momentary discontinuity at the actual edit point, using premasking.[20]

production sound

As far as the actual *compilation* of the sound track is concerned, it all begins with the auditory material that is recorded, like the visual material, on set. This is referred to as the *production sound* and primarily concerns voice, the *dialogue* that is recorded, as far as possible, during shooting. The final dialogue in a film may be compiled from the original recordings on set, or it may be partly or entirely re-recorded during post production.[21] This is referred to as *ADR*, or *dubbing*.[22] This may be done because the quality of the original set dialogue is not good enough or because a decision was made beforehand to dub the dialogues as, structurally, there is too much noise at the film location. The final

20 Holman 2010: 29

21 In principle, these are the sound recordings of the dialogue made while filming the associated shot of or what are referred to as *wild lines* : dialogue recorded without shooting any footage.

22 ADR stands for *Automated Dialogue Replacement* or *Additional Dialogue Recording*. The film dialogue is re-recorded in the studio during post production, using the set dialogue as a guide track: the actors listen to their original set dialogue on their headphones and then re-record it while watching the relevant footage on a monitor.

dialogue may, therefore, be a mixture of the original set dialogue and ADR dialogue. Not everyone is so keen on ADR. For some actors, it's difficult to produce the same emotion and intention in an ADR session as when dialogue is recorded on set. A dialogue during a fight scene will be physically tough during shooting and will undoubtedly sound breathless. The same dialogue recorded in a studio setting with headphones can soon become unconvincing, as the physical conditions, in particular, are completely different.

The principle is that the voice, the dialogue, must be entirely comprehensible, although it should be said that this principle has frequently been 'stretched' in recent decades. In his film *Punch-Drunk Love*, the director P.T. Anderson chooses to make the dialogue incomprehensible at times when the content of the dialogue is not really important for the story. The standard approach, though, is for dialogue to be clearly understandable. Consequently, in a scene with a lot of traffic noise, for example, that noise must be less present in terms of volume and timbre while there is a dialogue taking place on the pavement that is important for the story. Sometimes it's also a substantive choice, as in the 'Mystery Man' scene in David Lynch's *Lost Highway*, in which the party music and the buzz of conversation are turned right down once the dialogue begins and then back up again as soon as it finishes.[23]

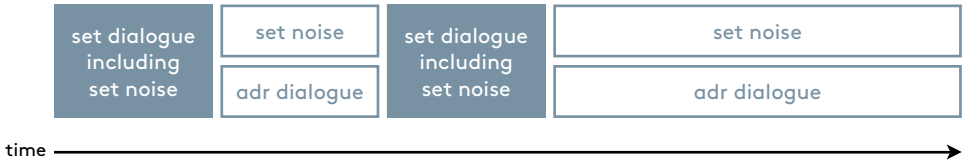
Another possible use of voice in the sound track is *voice-over*.[24] A voice-over by the main character in a film gives us the opportunity to really get inside the character's head. Famous examples are the troubled taxi driver and Vietnam veteran Travis Bickle in *Taxi Driver*, the psychotic Norman Bates in *Psycho* and Captain Willard in *Apocalypse Now*. Another application of voice-over is that of the narrator who is not one of the characters. That narrator is, in fact, set detached from the story and acts as an objective knowledge source who can provide any necessary explanation of what we are seeing and hearing. This type of voice-over is regularly used in documentaries. A variation on this is the voice-over in commercials and other advertising where, rather than being an 'objective knowledge source', the voice is actually praising the product and therefore adopting a subjective position. In all cases, a

23 https://www.youtube.com/watch?v=qZowK0NAvig

24 Non-synchronised speech used in a scene filmed earlier is referred to as a *voice-over* or *commentary voice*.

voice-over will be strongly present in the final mix of the sound track. The choice of voice-over actor, the *voice acting*[25] and the way in which the voice is recorded are therefore highly influential in the ultimate functioning and impact of the voice-over.[26]

Other sound material recorded at each location is the *set noise* or *room tone*: the specific sound of the location itself.[27] These recordings are used in post production to create *continuity*, for instance in a scene compiled from various shots that have been filmed at the same location while the dialogue has been replaced with ADR. The associated set noise is then added to shots with ADR dialogue to ensure that, from an auditory point of view, they match with preceding and successive shots (see visual representation below). Lastly, a location might have such specific sounds that these are recorded separately (*production sound effects – pfx*) for possible use in post-production.[28]



25 *Voice acting* is the art of portraying a character or providing an audience or user with information with the voice alone.

26 Here, we see how frequently the sound track is underestimated in comparison with the visual track. Film makers who are just starting out, in particular, may underestimate the importance of the right choice with regard to the voice-over and often think 'anyone can do that'.

27 At each (internal and external) location, after recording has finished, the sound technician will ask for a few minutes' silence so they can record the location sound.

28 This could be specific machines, for instance, or any kind of electronic apparatus, anything that makes a specific noise.

Foley

Supplementary sound material is created in post-production. One important discipline here is *Foley*. Foley is the real-time recording of sound effects.[29] These are all the sounds directly related to the actors' movements and actions, such as footsteps, doors opening, the rustling of clothes and fighting. The Foley artist reproduces these sounds synchronously with the image.[30] In the case of footsteps, for example, the sound has to correspond with the physique, the personality and the mood of the character in shot. The rhythm of the footsteps must also, naturally, be exactly the same as the actor's. There has to be room – within the requirements of synchronisation – to steer the audience's interpretation of the character. Dragging footsteps can indicate that a character has come to the end of his life. The same character could walk almost inaudibly, generating a completely different interpretation.

sound effects and ambiences

In addition to Foley sounds, *sound effects* will be used that are more indirectly or not, in any way, the result of the actors' movements or actions and can't so easily be created using Foley, such as explosions and car chases, but also wind and other weather sounds. You can often create these sound effects by using your own sound effects or electronically manipulating those sounds and/or mixing them with existing sound effects from sound effects libraries.[31] The last type of sound is the *ambience*, which is designed for each scene during post production and is therefore not the same as the set noise recorded on set.[32] Ambiences are a form of stochastic sound, so they don't impose themselves directly on the viewer/audience; they creep under their skin. One famous example is David Lynch's film *Eraserhead*, with ambiences by sound designer Alan Splet that which give the film an alienating, uneasy atmosphere.

29 The discipline is named after Jack Foley, the sound technician who first created real-time sound effects for film.

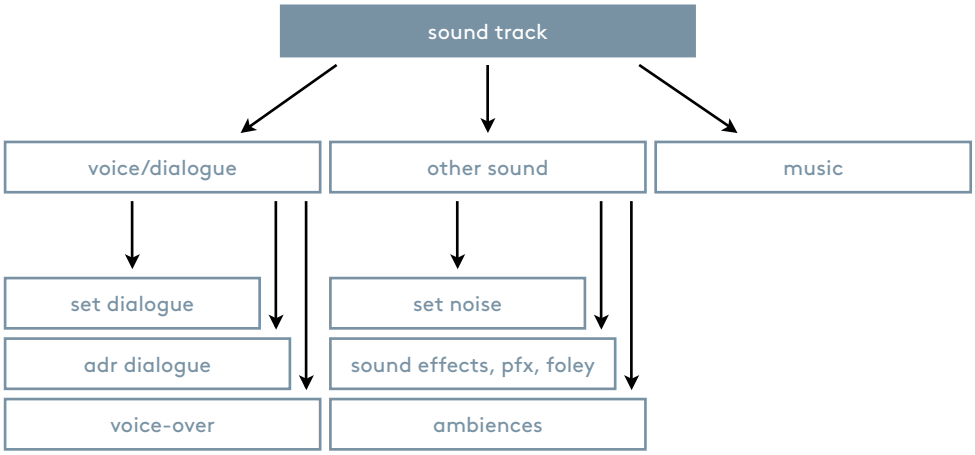
30 Another commonly-used word for the Foley artist is the *Gerauschmacher* (from the German film and television industry).

31 Most sound designers develop their own *sound effects library* over the course of their careers by making their own recordings of 'interesting' sounds.

32 Another commonly-used term for ambience is *atmo* or *atmos*, an abbreviation of atmosphere.

music

The third category is *music*. Music is similar to the two other categories because it also moves with time and therefore, like 'voice' and 'other sound', can add melody and rhythm to the sound track. Music is distinct from the other two categories because, in music, there may be a clearly-recognisable stratification and/or rhythmic structure, which adds texture and/or structure to the sound track. This distinction does encroach on the boundaries between the three categories which, as I already mentioned in the introduction, are becoming increasingly blurred. This is particularly true of the boundary between 'music' and 'other sound', so it might be handy to identify a few things so we can make a clearer distinction.[33] A definition of music that can be applied in this sense was once formulated by the composer Edgar Varèse: *music is organized sound*. As soon as we can perceive any form of organisation in time and/or stratification we speak of music. I discuss how this classification works in practice and even its financial implications in chapters 4 and 5. We can visually represent the above breakdown of the sound track as follows:



33 Sound effects are often part of the film music, as in the film *Atonement*.

the sound track combined with the visual track

In the following paragraphs, I explore a number of different aspects of the combination of the sound track with the visual track. What is important for that combination, first of all, is the differences between the sound track and the visual track, in fact the difference between 'hearing' and 'seeing'. We see everything that is in front of us at a glance, but, in that one glance, we can't look around us. While we continuously hear in a 360° field, there is no 360° view. Walter Murch, whom I mentioned earlier, describes this as follows:

I think the image of the eyes facing forward and the ears facing sideways is metaphorically indicative of how we confront visual reality as opposed to aural reality. The visual seems to be direct and confrontational: you look at what's in front of you, and what's in front is seen and apprehended with a measure of intellect and emotion. And it's seen all at once, in a single grasp – let's call that the front door.

Sound tends to come in through the back door, or sometimes even sneak in through the windows or through the floorboards. Remember, the ears point out the side of your head and take in a 360-degree spherical field. And while you're busy answering the front door, sound is sneaking in through the back door. It's in the house as much as anyone who came in through the front door, but you're not as aware of it, and so its presence is more of a conditional presence – it tends to condition the things you are consciously aware of. The strange thing is that you take the emotional treatment that sound is giving, and you allow that to actually change how you see the image: you see a different image when it has been emotionally conditioned by the sound.[34]

Briefly summarised, what you see comes through the front door while sound, at the same time, comes in through the back door.[35] This difference is described in more detail in the paragraph on meaning.

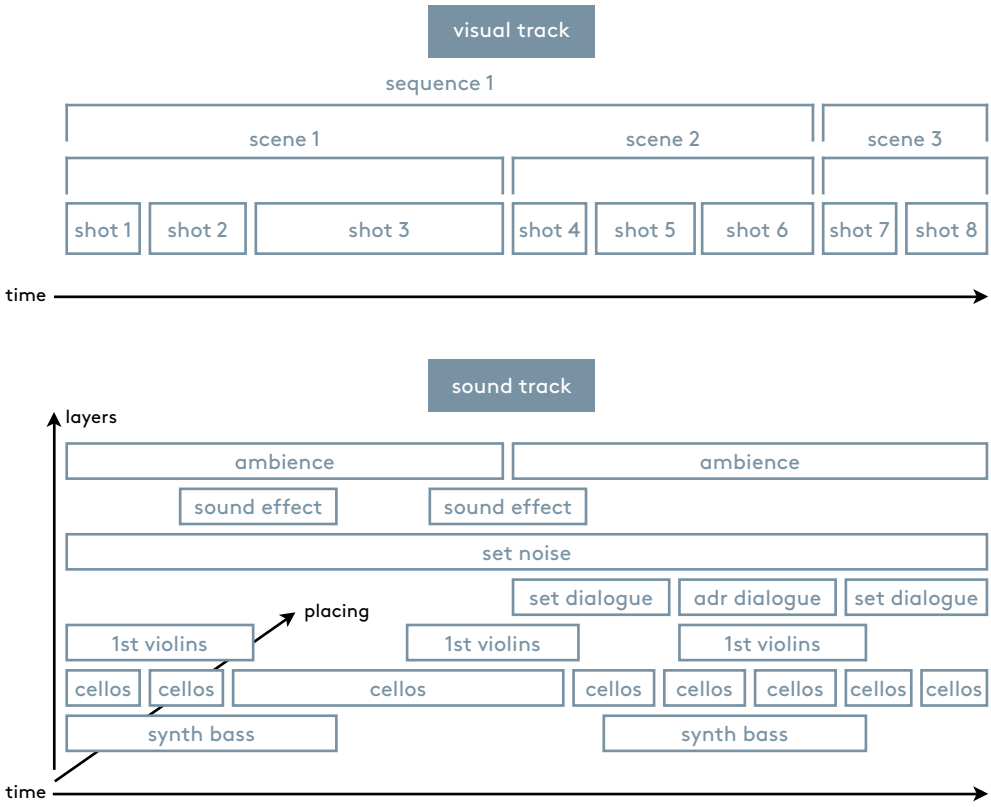
technical combinations

If we compare the sound track with the visual track in terms of composition and creation in a technical sense then, clearly, the sound track is more complex. One major difference is the difference in dimensions.

34 Kenny 2000: 6 – 8

35 In a physical sense, side doors would be a better analogy. We hear in stereo and, therefore, from the side. 'Back' is a poor definition in terms of our hearing.

While the visual track is created by editing individual, discontinuous shots together in *time*, therefore making it one-dimensional, the final sound track is three-dimensional. See the visual representation of the two tracks below.



The sound editing is therefore done not only in *time* but also in *layering*: not only music, but also sound effects and ambiences always consist of various coordinated layers. The third dimension is space: the sound track is at least a 2.0 (stereo) track and often a 5.1 track. What's more, new standards such as *Dolby Atmos* facilitate an even more precise and extensive placing of sound in space.

One of the implications of this difference in complexity is often revealed at the post-production stage. While it's relatively easy to make adjustments to the editing of the visual track right up to the last moment with a couple of mouse clicks, such a change can have major implications for

the sound track. Often, all kinds of sounds then have to be re-produced, extended, cut and/or remixed. If there is also music in the scene in question, that may necessitate revision of the entire composition. If the music has been played by musicians with acoustic instruments, that can even lead to almost insoluble situations, as the sound recordings have already been completed. Sometimes, a new musical recording is the only (highly-expensive) solution in such a situation.[36]

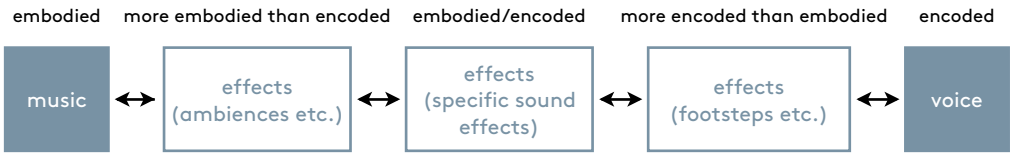
perception

The above visualisation shows the extensive stratification of the sound track, raising the question as to how that stratification, with all its various elements, relates to the perception of the sound track. Walter Murch developed an interesting theory on the topic, based partly on his experience of mixing the sound track for *Apocalypse Now*. Murch makes a distinction between *encoded sound* and *embodied sound*, whereby 'speech' is the clearest example of encoded sound and 'music' the clearest example of embodied sound. Speech and therefore language is, in essence, a system based on codes. If we don't know the (codes of the) language, we don't know what is being said, so no meaning is created. Music, on the other hand, doesn't depend on codes and is experienced directly by the listener. We don't first have to learn a specific musical code to be able to understand or be touched by music. We can see these as the two extremes of a spectrum.

Naturally, in reality, things are not as simple as that. Even if we don't know the language, we can tell when someone is angry by the way they say something. There is also music that we don't understand and which, therefore, fails to move us, as we don't understand the underlying codes, such as non-Western music we haven't grown up with.

The 'other sound' in the sound track may be more or less encoded or more or less embodied. Sometimes, a sound effect or ambience has clear musical characteristics plus the associated meaning and perception and is therefore more embodied. One example is the aforementioned ambiences in David Lynch's film *Erasorhead*. On the other hand, entirely neutral footsteps can simply indicate, as coding, that someone is walking. The spectrum could, therefore, look like this:

36 Incomprehension and lack of knowledge on the part of the 'visual disciplines' is common, which is illustrated by the comment, 'Don't worry, we've only cut half a second'.



While working on the film *THX-1138* Murch then developed his "Law of Two-and-a-half". He had to create the footsteps of robots appearing in various numbers in various different scenes and discovered that if there was only one robot the synchronisation between sound and image had to be correct. With two robots, that was still the case, but with three robots that accurate synchronisation was no longer necessary… any form of synchronisation was okay:

Somehow, it seems that our minds can keep track of one person's footsteps, or even the footsteps of two people, but with three or more people our minds just give up – there are too many steps happening too quickly. As a result, each footstep is no longer evaluated individually, but rather the group of footsteps is evaluated as a single entity, like a musical chord. If the pace of the steps is roughly correct, and it seems as if they are on the right surface, this is apparently enough. In effect, the mind says "Yes, I see a group of people walking down a corridor and what I hear sounds like a group of people walking down a corridor."[37]

So that law of two-and-a-half applies to the same kind of sound, in this case footsteps. If we mix various types of sound (such as encoded sound and embodied sound), we can distinguish between three or more different sounds. Dialogue and music can easily be combined. We can also add various types of sound effect, generally without any problem.

Why is this? Well, it probably has something to do with the areas of the brain in which this information is processed. It appears that Encoded sound (language) is dealt with mostly on the left side of the brain, and Embodied sound (music) is taken care of across the hall, on the right. There are exceptions, of course: for instance, it appears that the rhythmic elements of music are dealt with on the left, and the vowels of speech on the right. But generally speaking, the two departments seem to be able to operate simultaneously without getting in each other's way. What this means is that by dividing up the work they can deal with a total number of layers that would be impossible for either side individually.[38]

37 March 1999: 22

38 March 1999: 23

Extrapolating on this, if we spread the sound layers in the sound track across the spectrum with the extremes as embodied sound and encoded, we can therefore use 2 x 2.5 = 5 sound layers. If too many of the sound layers are in one range, then we come back to the law of two-and-a-half. If, for example, we want two layers of clearly understandable dialogue, it's better to keep other types of sound soft.

To highlight the differences in our perception of Encoded vs. Embodied sound, it is interesting to note the paradox that in almost all stereo films produced over the last twenty-five years the dialogue is always placed in the center no matter what the actual position of the actors on the screen: they could be on the far left, but their voices still come out of the center. And yet everyone (including us mixers) still believes the voices are 'coming from' the actors. This is a completely different treatment than is given sound effects of the "encoded/embodied" variety – car pass-bys, for instance – which are routinely (and almost obligatorily) moved around the screen with the action. And certainly different from "embodied" music, which is usually arranged so that it come out of all speakers in the theater (including the surrounds) simultaneously. "More embodied than encoded" sound effects (atmospheres, room tones) are also given a full stereo treatment. "More encoded than embodied" sound effects like footsteps, however, are usually placed in the center like dialogue, unless the filmmakers want to call special attention to the steps, and then they will be placed and moved along with the action. But in this case the actors almost always have no dialogue.

As a general rule, then, the "warmer" the sound, the more it tends to be given a full stereo (multitrack) treatment, whereas the "cooler" the sound, the more it tends to be monophonically placed in the center. And yet we seem to have no problem with this incongruity – just the opposite, in fact. The early experiments (in the 1950's) which involved moving the dialogue around the screen were eventually abandoned as seeming "artificial." Monophonic films have always been this way – that part is not new. What is new and peculiar, though, is that we are able to tolerate – even enjoy – the mixture of mono and stereo in the same film.

Why is this? I believe it has something to do with the way we decode language, and that when our brains are busy with Encoded sound, we willingly abandon any question of its origin to the visual, allowing the image to "steer"

the source of the sound. When the sound is Embodied, however, and little linguistic decoding is going on, the location of the sound in space becomes increasingly important the less linguistic it is. In the terms of this lecture, the "warmer" it is. The fact that we can process both Encoded mono and Embodied stereo simultaneously seems to clearly demonstrate some of the differences in the way our two hemispheres operate.[39]

Murch used his findings in the mixing of *Apocalypse Now*, for example, and then specifically in the famous scene with the helicopter attack where, in principle, there were six distinctly different sound layers:

1. dialogue
2. helicopters
3. music (Wagner's *Ride of the Valkyries*)
4. small weapons (AK47 and M16)
5. explosions
6. all kinds of things (footsteps, wind, fire, etc.)

While mixing, Murch discovered that all this resulted in a (kind of) white noise that no longer created any meaning. By chance, these sound layers were spread relatively evenly across the spectrum between encoded and embodied sound. Murch decided to use a maximum of 5 sound layers at a time in the mix. As soon as he found that a sixth sound layer was important in a (series of) shot(s), that meant he had to remove one of the other layers. In the shots where the young soldier in the helicopter is anxiously calling, "I'm not going, I'm not going!", it was important to have that dialogue heard in combination with the chaos outside the helicopter, so Murch decided to leave out the music here. Choosing the five most important layers for each sequence created clarity and, therefore, meaning. The intention of the helicopter scene as a whole was to make the audience feel that all kinds of things were happening at once and we they in the midst of it. Murch achieved that by continually switching between shots from an auditory point of view, allowing us to actually experience that enormously hectic situation and, at the same time, still hear 'everything'. There is absolutely no meaningless noise in this scene.

39 Murch 1999: 23 – 24

rhythmic combinations

Rhythm is an important component of both the sound track and the visual track. There is often a rhythm in the visual track with various accents caused by the actual actions of the characters in the film. There are camera movements with a certain rhythm, too. There is also a tempo and rhythm to the editing. One example of the above is an action scene in a historical 'knights on horseback' film in which they are fighting and running, the camera is constantly in motion and the editing rhythmically links short shorts from different angles at a high tempo.

Within the sound track, rhythm is naturally already present, as rhythm is a characteristic element of sound. The rhythm of speech, in dialogue, is one of the major characteristics of this part of the sound track. Music almost always has a rhythmic component, but sound effects and ambiences, too, often have an internal rhythmic component. They can also be used rhythmically, as with footsteps. One obvious approach to the aforementioned action scene would be to rhythmically coordinate the sound track and the visual track. The most extreme version of this is 'Mickey Mousing,' where all physical actions in shot are entirely synchronised with the film score and the sound effects. This approach is often comical and is therefore frequently used in animated films, such as the *Tom and Jerry* cartoons.

Evidently, there are other possible approaches. All the realistic sound in the aforementioned scene could be in the background, for example, with the major part of the sound a minimalistic composition for piano. Or, instead of the piano, a muffled sound you could associate with 'blocked ears' as a result of shell shock. In both cases, this produces a sound track that is entirely rhythmically opposed to the visual track. Such combinations also create a different meaning for the audiovisual scene as a whole, something I will explore further in the paragraphs on 'meaning'.

spatial combinations

In principle, the spatial suggestion generated by the visual track by working with depth of field,[40] for example, can be enhanced further

40 In a nutshell, using *depth of field*, you can show everything within a certain distance of the camera (the focus range), while everything that is slightly further than the focus range becomes increasingly blurred, creating an extra spatial suggestion.

in 3D films.[41] Experience has taught us that by no means all film styles and genres are suited to 3D. The use of 3D in action films generally has a negative effect. The rapid editing and the switching in perspective in such films is not suited to being 'experienced' in this manner. Our eyes and brains have a job keeping up, resulting in a headache. A film such as *Gravity* is, however, suited to the technique, as the editing is relatively calm and 3D generates added value in a film that takes places largely in space. The technology for 3D films (stereoscopic cameras) is still too expensive, so few films are shot like this at the moment. There is the option of what is referred to as 3D conversion, though. The drawback is that films become darker and less clear. What's more, not everyone is so enthusiastic about the 3D specs you have to wear to experience 3D.

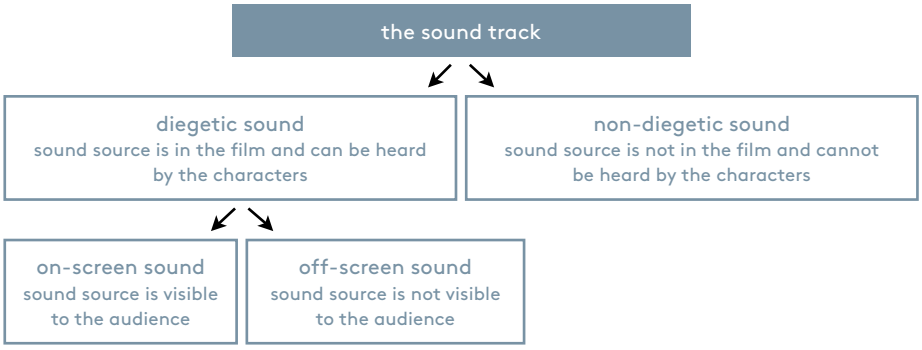
The sound track has a spatial dimension as sound issues from a sound source that is generally 'somewhere' in the film. From that spatial perspective there is, first of all, the distinction between diegetic and non-diegetic sound. *Diegetic sound* is sound that has a physical sound source in the film and can therefore be heard by the characters. That could be the sound coming from a radio in the film, or the cover band playing music at a wedding reception in the film, for example. The sound source doesn't, therefore, necessarily have to be visible; the radio in the above example doesn't have to be in shot. Non-diegetic sound is sound that is heard by the audience but not by the characters in the film. The most common form of non-diegetic sound is film music: music that has been added to the film in post-production and is therefore not itself in the film story.

All kinds of applications and combinations of diegetic and non-diegetic sound can be found in films, such as P.T. Anderson's *Magnolia*, in which the major characters sing along with Aimee Mann's song *Wise Up*. The song's instrumental intro already starts in the scene with the nurse Phil, but the character Claudia is the first to sing along in the following scene. In the scene with Phil, the music is non-diegetic, but you could already consider the music in the next scene, with Claudia, diegetic because she had already been listening to another Aimee Mann song in a previous scene. Other characters then also sing along with the song. The only thing is that they are all at different locations and the sound is not diegetic: even if the music in Claudia's scene is diegetic, the other characters can't hear that music because they are at totally different locations.

41 A *3D film* is a film in which (apparent) depth is created with stereoscopy.

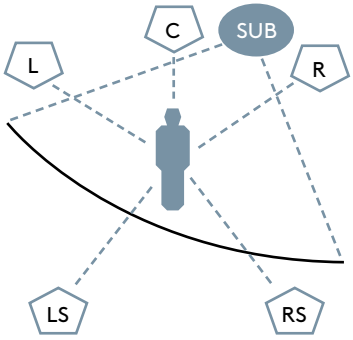
Another distinction is that between on-screen and off-screen sound. *On-screen sound* is sound in the film where you can see the source, unlike *off-screen sound*. A sound can be initially off screen and then, in time, become on-screen: a car that we hear driving up but can't yet see and which drives past during the shot. Off-screen sound is often used to enhance the experience of a film, to indicate that there is more than we see in the shot. It can fire the audience's imagination, encouraging them to visualise the possible source(s) of the sound that can be heard but not seen. One good example is in The *Silence of the Lambs*, when an autopsy is being conducted and the coroner is cutting open the skin of one of the serial-killer's victims with a scalpel. We can't see the action, but the cutting sound goes right through you, inspiring the audience's imagination, making the ultimate perception far stronger.

In addition to stimulating the audience's imagination, off-screen sound can financially benefit scenes: a plausible dialogue between a couple in two seats in an airborne aeroplane can be created relatively easily by adding the right off-screen sound (the typical plane noise, fellow passengers chatting in the background and the sound of the steward's trolley). The visual representation below shows how diegetic sound can be on screen or off screen. Non-diegetic sound, on the other hand, is always off screen.



One final aspect of the spatial combination of the visual track and the sound track is (the suggestion of) *sound perspective*. The word 'suggestion' is used here deliberately, because it refers to the fact that the sound perspective in film is by no means always realistic. A dialogue in a scene that goes from a wide shot to a close-up will hardly vary in terms

of volume, timbre and pitch; after all, in both shots, The dialogue must remain easily comprehensible, while that will not be the case in reality. If there is any difference in volume, timbre or pitch it will be minimal as, otherwise, you will 'feel' the cut from the wide shot to the close-up.[42] The aforementioned three parameters (volume, timbre and pitch) are the major parameters with which the sound perspective can be changed.[43] A fourth parameter, the *placing* of the sound, is particularly important in (home) cinema where there is multi-channel sound and where the various elements of the sound track can be allocated to one or more sound channels and sound can move between those channels.



The above illustration of the most common sound display system 5.1 in (home) cinema shows the placing options. As I already mentioned, the dialogue will chiefly come out of the centre speaker as encoded sound. The more encoded than embodied sounds, such as footsteps, will also generally come from the centre, while the more embodied than encoded sounds, such as ambiences, are more spread over all the speakers. That also applies to music, as embodied sound, with the direct, dry part being placed more stereo (left and right speakers) and the indirect, wet part being placed in the surround (left surround and right surround speakers) and partly stereo.[44] The subwoofer speakers are there for reproducing specific sounds in the (more extreme) layer.[45] They are generally situated behind the projection screen as these low frequencies are not direction sensitive and will fill the auditorium or living room wherever they are.

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42 The change is generally a slightly 'thinner' sound in the wide shot in comparison with the sound in the close-up: some of the 'low' is filtered out of the sound.

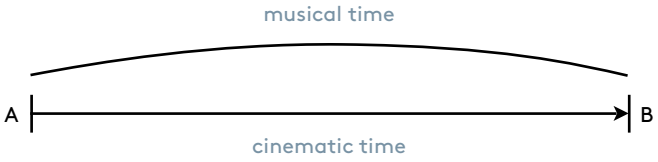
43 Any use of reverb, echo, etc. also comes under *timbre*.

44 By the *direct, dry part* we mean the individual music cues without any spatial addition, such as reverb and echo, which are elements of the *indirect, wet part* that is placed in both the left and right surround speakers and the left and right speakers. That way, the 'wet part' also remains audible even if you are listening in stereo.

45 Everything around 120 Hz and lower is sent to the subwoofer(s).

combinations from a time perspective

When it comes to the *representation* of time in a film story, the sound track will very often do that in the same way as the visual track. Sound and picture are then *simultaneous*: you see one of the characters speaking lines that you also hear at the same time, you see and hear a door closing. There are other possible combinations, though, such as the *sound flashback*: one of the characters is in shot, for instance, but at the same time we hear the lines of another character from an earlier scene, which throws a totally different light on that character. The opposite is also possible: we hear a character giving evidence in a court case, while seeing a *visual flashback* of an earlier event. The above examples are diegetic, but there are comparable combinations with non-diegetic sound. *Simultaneous non-diegetic* sound, for example, is a voice-over describing exactly what we see at the same time. Sound from the past laid over contemporary footage is a non-diegetic counterpart of the sound flashback. This could be sound from a speech by a past politician over contemporary images of strikers. It can also be the other way around in non-diegetic sound: the voice of a current politician dubbed over historic footage.

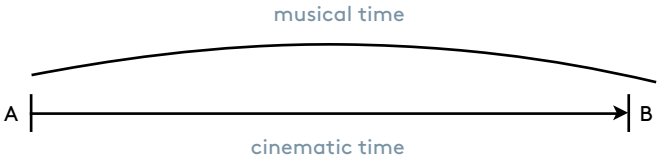


Specific combinations of the sound track and the visual track can also strongly affect the *perception* of time in a scene or a film.[46] This primarily concerns the music in the sound track, as music always intrinsically has a recognisable structure and, therefore, its own way of moving through time. In a scene, someone walks from point A to point B in 20 seconds, for example. If there is music over this scene that begins at moment A and ends conveniently at moment B, then you can say that the time in the film, the *cinematic time* (in this case 20 seconds) corresponds with the time in the music, the *musical time*.

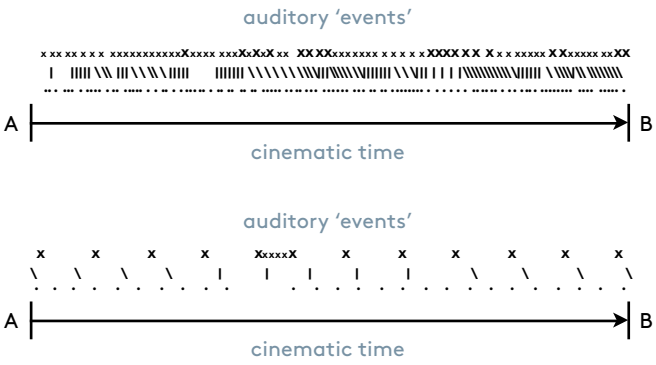
46 These examples come from the book *Komponieren fur Film und Fernsehen* (Composing for Film and Television, German language) by Norbert Jurgen Schneider. 1997: 168 – 169.

If we slightly accelerate the above music or use music that ends earlier than moment B, then the picture is as follows and it gives the impression that the scene lasts longer. After all, the musical time is already over and the scene, the cinematic time, is still going.

If we slow down the above music or use music that ends later than moment B, then the picture looks as below and it gives the impression that the scene doesn't last as long. The musical time has not yet finished, while the cinematic time has already stopped.



Another way of influencing the perception of time in film is with the *information density* of the sound track. If it contains a great deal of information, such as high-tempo music and a lot of short notes and/or all kinds of sounds but also a lot of different sound effects, this presents the audience with a lot of information and gives them the impression that the scene lasts longer. Unlike a sound track in which clearly-structured, slow music and few sound effects are used. The information density is far lower so we, the audience, have the feeling that the scene goes faster. The graphic illustration of the two situations below gives an idea of the difference in information density:



meaning

So how is the *meaning* of a scene or film created and what is the role of the visual and the sound track in this? Originally, the view was that the sound track could function in one of two ways with regard to the visual track: either the content of the sound track enhanced the content of the visual track (parallelism) or the content of the sound track was contradictory to the content of the visual track (counterpoint). The principle here was that the visual track was the major determinant, as it generated a direct, clear meaning: the most the sound track could do was support or undermine it. In recent decades, however, the visual track has increasingly changed, as I already described in the above paragraphs on narrative.
Scenes are by no means always clear; often a large part of the interpretation and sense-making of the film is left to the audience. Clearly, in that case, the sound track can be far more supportive and determinant than simply following or contradicting the visual track. In other words: how the visual track is interpreted can largely be determined by the sound track.

The sound track can give various different meanings to a scene in which a man and a woman meet on the street and have a conversation in which it's not entirely clear what their relationship is, after which they both walk on. If all the other street noise is removed and you only hear the dialogue between the man and the woman, you are 'sucked' into their relationship, as it were, and gain the impression that an essential conversation is taking place. You won't have the same impression in the situation where the street noise is left in place and you are able to follow the dialogue, but it's actually only part of the street noise. In that case, the scene will feel like a reasonably unimportant conversation between two acquaintances who accidentally bump into one another on the street. Music in such a scene can then suggest that there is a blossoming love, but it can alternatively give the impression that, in the background, a threatening situation is arising between these two people.

Generally, you could say that the visual track gives *information*, while the sound track creates *meaning*. The visual track in the above scene provides information on the actual situation: this is about a man and a woman who find themselves in a particular place (street, city) at a

particular moment (daytime, evening, night). We may be also able to deduce the social class of the man and woman, for instance, from their clothing. The sound track then gives specific meaning to the scene by zooming in on their conversation or placing slightly threatening music behind the dialogue. The sound track in fact enhances one meaning of the many possible meanings, therefore generating a specific meaning for this scene. Likewise, the visual track often provides a frame of reference for the sound track. The same piece of music can generate various different emotions, depending on the associated visual track and the associated ensuing information.

emotional codes

The distinction: visual track = information and sound track = meaning is relative in the sense that the visual track can also, naturally, generate meaning and the sound track can also provide information. In the above example, the man and woman can give the scene the necessary emotional charge and therefore meaning by the way they look at one another. In addition, by using specific sound (such as the clanging of a tram) and accordion music coming from a nearby bar, you can indicate that the scene is taking place in the working class district of Amsterdam. We should realise, however, that the visual track is a direct form of representation (what you see is what you get) and, therefore, first and foremost informative, while the sound track is a far more indirect form of representation.[47] Consequently, we are continually interpreting what we hear and making sense of it, for which we rely on our background, culture and experiences. Take *emotion*, for instance. The sound track can evoke a particular emotion or enhance an emotion already ensuing from the visual track. The sound track can then work in one of two ways: on one hand, the sound track provides information on *how the characters in the film feel* while, on the other hand, it tells us, as the audience, *how we ought to feel* when we watch this scene. You could say these are a kind of code, *emotional codes*:[48] if we don't experience any real street sound behind the above scene and there is music that we associate with romanticism, then we are being told, firstly, that the characters in question are falling in love. Secondly, if we've been following the story for some time and therefore feel empathy with the characters, we will also experience a certain degree of emotion. Not that we, as the

47 Remember Walter Murch's front and back doors.

48 Frith 1996: 115-122

audience, fall in love, but we undoubtedly experience, a good, happy feeling when we see a woman with whom we have we have been building up a certain relationship falling in love with a nice man.

cultural codes

Another type of code could be referred to as *cultural codes*:[49] the sound track can clarify the *location*, the *time* and the *social environment* in which the story is taking place, but also the *aesthetics*, the *look* of the film. With the right music and the right sound, you can make it quite clear that a certain scene or film is set in China, Nashville or India.[50] Or that the story is set during World War II.[51] Or that the characters are moving in a more working-class circle, with densely populated neighbourhoods.[52] Or that the film is of the martial arts genre, with extensive, complex choreographies for the fight scenes, which are partly in slow motion.[53] These cultural codes clearly refer to the aforementioned informative possibilities of the sound track. Every film applies these cultural codes, particularly at the beginning of the film. Then we are clear about what kind of film we are going to watch and what the 'agreements' are. That way we soon know whether we are watching a western, a romcom or a historical drama and what, in principle, we can expect from the visual and auditory style.

dramatic codes

A third and final category of codes is that of *dramatic codes*,[54] in other words the possible effect of the sound track in terms of narrative: storytelling. The sound track can structure the progression of the story, drive it along or make it tread water, for instance. The category of dramatic codes therefore has a relatively large range of effects, the first of which is continuity.

49 Frith 1996: 115-122

50 A pentatonic scale, for instance, country music or an Indian folk ensemble, in addition to the use of specific sound effects and set noise at those three locations.

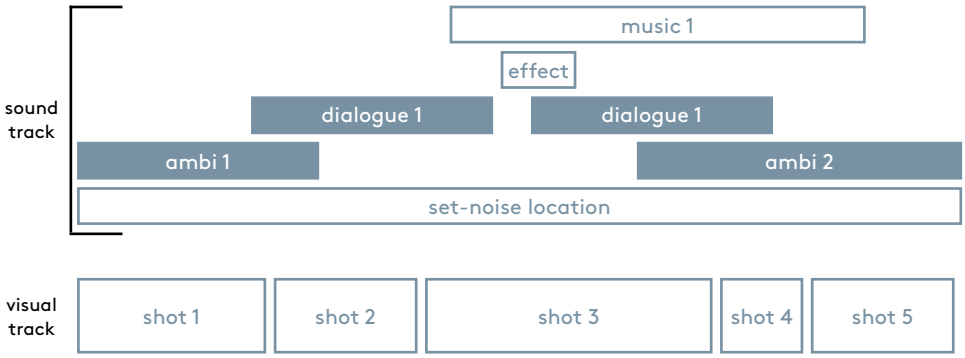
51 The sound of specific bombers that were used in World War II, for example, or an air raid siren.

52 This could be noisy neighbours or heavy metal music all day long. Also see the Amsterdam example in the previous paragraph.

53 Such as the 'whoosh' sounds in fight scenes in martial arts films.

54 Frith 1996: 115-122

Looking at *continuity* in film, as we already saw, the visual track actually consists of a montage of separate individual shots in time. The continuity the audience experiences when watching the film and which is essential to telling a story is largely provided by the sound track. This ensures the audience doesn't 'feel' the editing. The transition between those individual separate shots is not felt because it can't be heard as, in principle, the sound track is continuous and goes on during such a transition. In fact, the mini sound tracks of those successive shots are adjusted so they are experienced as one continuous sound track. In principle, this is done by placing the set noise from the location where the various shots of the scene in question have been filmed behind the edited shots. In addition, ambiences, music and dialogue, in particular, can play a role (see, for example, dialogue and ambi 1 and 2 in the visual representation below).



Another aspect that is important for the story, the narrative, is the *credibility* of the combination of the visual and sound tracks. If we see a dog barking and hear barking in synchronisation with the image, we will believe that combination and accept it as 'realistic'. Depending on the story and the associated context as it has revealed itself up to that point, instead of barking, there could be a kind of mousey squeak. If we are to 'believe' that combination, it is important for us to be able to imagine a dog in the physical sense as a possible 'source' of that mousey squeaking. To achieve that, the 'movements', the wave forms, in the sound have to correspond exactly with the physical movements of the dog as it barks. Otherwise, the audience with stop believing. Often, such a combination has a comic effect as it is unexpected, but as long as the above requirement is met we will still 'believe' it.

Possible combinations such as the aforementioned do depend on the story and the associated context. The context in which the story is set determines the reality and the associated boundaries of the film. In fact, as we already established above, 'agreements' are made with the audience, such as the social environment, the world and the time is this film is set and how that world and that time sound. In cinematic history, there are innumerable examples of such genre-establishing agreements that tell us that we are now going to watch a western, a period drama or a romcom. At the same time, those agreements can provide a whole different perspective of the world and the reality that will unfold in the film.

From that point of view, the film *The Social Network*, about the rise of Facebook, is a good example. Initially, the film had standard rock music over the opening sequence, which clearly gave the idea that it would be a 'teen film'.[55] Ultimately, in the final music, by Trent Reznor and Atticus Ross, a lone piano establishes a sinister atmosphere, giving a taste of things to come. A completely different set of agreements compared with the rock music that was initially used. In a film such as Andrej Tarkovski's *Stalker*, the above 'rules' regarding synchronisation are dropped entirely, as 'the Zone', the area where the majority of the film is set, is a place where nothing is as it seems. Consequently, none of the combinations of the visual track and sound track adhere to the regular film rules; they seemingly contradict one another. We see and hear someone walking, with the camera angle as the point of view (at the bottom of the frame we see grass moving as a result of the footsteps we are hearing). At the same time, we see one of the characters looking straight in the direction of the camera but evidently seeing nothing, although someone is quite clearly walking there. A combination of the visual track and the sound track that confirms the agreements that the Zone is an area where nothing is as it seems.

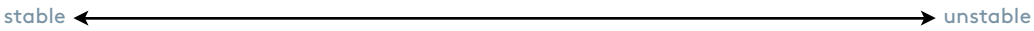
Quite another example is Jacques Tati's 1967 film *Playtime*, which consists entirely of extreme total shots and no dialogue, just mumbling in various different languages. In the opening scene in the arrivals hall of a (reconstructed) airport, we see people walking backwards and forwards. At some point, a character walks into the shot with a small suitcase with a cardboard address label attached. The label is flapping,

55 A *teen film* is aimed specifically at teenagers and young adults and therefore always tells a story that interests this target group. The location for such a film is therefore often a 'high school', 'college' or 'university'.

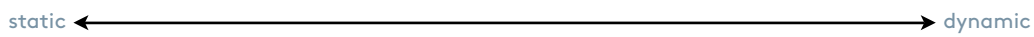
due to the owner's rapid walking, causing a flapping sound that can clearly be heard above the hubbub. Evidently we are meant to follow this character, as this specific sound draws all the attention to him. In this film, therefore, the agreement is clearly that we watch from a wide, distant viewpoint, allowing ourselves to be guided by the sound track. The fact that there are unrealistic combinations of the visual and sound tracks (such as the flapping of a cardboard label in an extreme total shot with all kinds of vague noise) is part of that agreement. At the same time, it is an example of how – in this case – *guiding and sense-giving* the sound track can be: all the attention is now focused on that little case and its owner. As the audience, we begin applying our own narrative imagination, supposing that the character is obviously someone important, whom we must follow.

narrative characteristics of the sound track

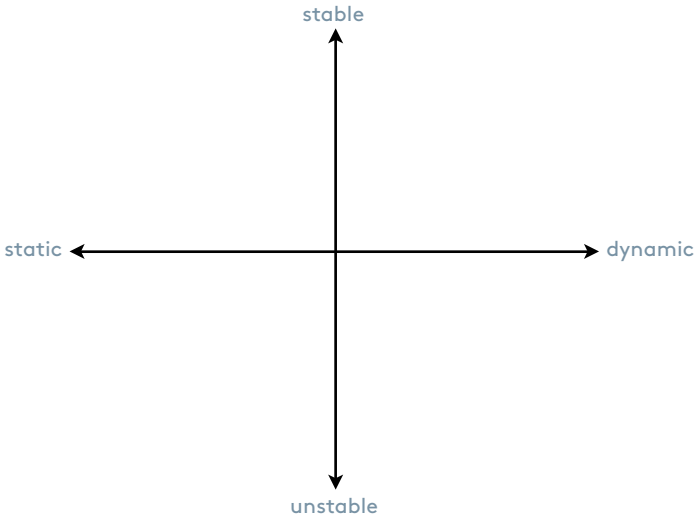
The *structuring* of the story, the narrative, by the sound track combined with the visual track is chiefly down to the narrative characteristics of the sound track. As we saw when defining narrative, there are a number of distinct concepts: a *stable* situation, in which there is a *disruption*, which results in a *development*, leading to a subsequent (temporary) stable situation. By that token, you could say that, during the development, there is often an unstable and uncertain situation. It is, as yet, unclear where the development will lead: will the freshly-divorced man actually enter into a relationship with his secretary, or will she ultimately turn him down. We can therefore speak of two possible situations that could arise – stable or unstable – with all kinds of possible transitions between those situations. There is a dipole, with 'stable' and 'unstable' as the two extremes.



There is a similar contrast and dipole for the aforementioned development: if there is no development and therefore nothing is happening, then the situation can be referred to as 'static'. The opposite of static is dynamic: there is some development and the narrative is developing in a particular direction.



Both dipoles can be combined in the *dipole model* below.



So, roughly speaking, you could illustrate the narrative progress of an audiovisual production using the above representation. A 'regular' film will begin with a static, stable situation that will soon be disrupted. As a result of that disruption, all kinds of developments will be set in motion, creating a transition from static to dynamic. Those developments can, again, be of a stable or unstable character. Ultimately, the dynamics again lead to a static, stable situation. After that, developments will again take place or the film will soon be over, as there is nothing more boring than such a static, stable situation. This way, we can examine a film at macro level, at the level of the film as a whole. Alternatively, we can examine it at micro level, for example at the level of a sequence: a number of scenes that form an individual narrative unit.

static – dynamic

Assuming the above dipoles and formulations, there are clear similarities with the sound track, for instance if we look at the music within the sound track and at the *'static – dynamic' dipole*. It's a given fact that music can also undergo a development in time. In that sense, music can also be 'dynamic' (and therefore also 'static'). In his book *Audio-Vision* Michel Chion, a renowned theoretician on the topic of the sound track in audiovisual media, defines the term 'vectorized':

Sound vectorizes or dramatizes shots, orienting them towards a future, a goal, and creation of a feeling of imminence and expectation. The shot is going somewhere and it is oriented in time.[56]

'Development' in music can therefore be defined as music with a vector, music 'that is going somewhere in time'. In the case of music generated by acoustic instruments, a development is composed rhythmically, melodically, harmonically or instrumentally or by means of combinations of these. When it comes to electro-acoustic music or purely electronic music, there will be a development in sound, as the possibilities of the contemporary sound world are actually infinite, thanks to a large variety of sound design and sound manipulation techniques.

Innumerable examples of this development can be found in existing film music repertoire. In such films as *Dead Ringers* and *Silence of the Lambs*, for the final scene Howard Shore composes music that is quite definitely 'going somewhere'. The music for the 'definitive operation' in *Dead Ringers* develops along a falling harmonic progression. In *Silence of the Lambs*, Shore uses a comparable musical approach that leads Jodie Foster (and the public) to the serial killer's subterranean lair. In both examples, it is clear that, from a narrative point of view, the story is in the final 'transition' from one 'situation' to the final 'situation' (that will hopefully give us some peace and calm).

The film composer Bernard Herrmann can be considered a representative of the other, 'static' extreme of the dipole. In such films as *Vertigo* and *Psycho*, entire musical sequences are based on a few dissonant chords, repeated constantly without any development towards the usual 'solution': the root. This has since become a known film music process based on tonality. Both films, incidentally, contain musical sequences with 'dynamics' and a 'vector'. When Marion, the main character in *Psycho*, walks upstairs in Norman Bates' house, the musical pattern 'shifts' to an ever-higher pitch, producing a clear musical vector that 'points' to the house, as it were.

Another example of 'static music' can be found in Jon Brion's score for the film *Magnolia*. The 'building blocks' of one of the longest film music sequences in history (more than 35 minutes) can be considered

56 Chion 1994: 13 – 14

static. Not because of the use of dissonant chords in a tonal system, but because of the use of an ostinato combined with static harmony;[57] a number of chords that keep revolving in a circle, as it were.

If we look at the two examples of *Psycho* and *Magnolia* in detail and from a narrative point of view, clearly the story is in a certain 'situation' that looks as if it will never end. When Marion is on the run in *Psycho* because she has stolen money from her boss, we can consider the majority of Hermanns' music over this sequence as static: it's going nowhere. Marion is in an unstable, static situation: she's on the run. The above musical examples are based primarily on harmonic developments (or the lack thereof) in the music. A development, a vector in the film music can also, however, be achieved by augmenting or diminishing the instrumentation while the harmony remains the same. Or simply by increasing or decreasing the volume (all instruments go from *ppp* to *fff*). Or by increasing or decreasing the rhythmic complexity, using Shepard tones, etc.[58]

Not only the music in the sound track but also 'other sound' and 'voice' can contribute to a vector. An increasing complexity in terms of spectrum in an ambience and/or a series of sound effects, a development in pitch, volume, timbre and spectrum, in terms of comprehensibility, volume density and total mix; these are all examples of options for generating a development in the sound track. Innumerable examples of this can be found in film history, too. In *Apocalypse Now*, there is a scene in which Captain Willard and his crew arrive at night at the Do Lung bridge in Vietnam, where an entirely chaotic fight situation is going on. In this scene, the sound track works towards a clear climax (when an American soldier guns down a Vietcong fighter). Not so much by using a single sound effect, but by gradually fading out all the music (diegetic Jimi Hendrix-style music from a transistor radio) and all fighting noise (automatic weapons, explosions, etc.). All that is left is the lonely calling of the Vietcong fighter, stuck somewhere in the barbed wire, together with the dialogue between Captain Willard and the soldier who eventually shoots the Vietcong fighter.

57 An *ostinato* is a short musical motif that is continually repeated. The ostinato as a composition technique is discussed in chapter 3.

58 More information on *Shepard tones* in chapter 3.

In *The Godfather*, there is a scene in which Michael Corleone commits his first Mafia murder. Before the fatal shots, the camera zooms slowly in on Michael's head as we hear the ever-louder screeching of a subway train. Both the visual track and the sound track in that scene have a vector; they are heading towards a climax: the fatal shots. The director, Francis Ford Coppola, particularly wanted the scene to have no music and sound designer Walter Murch came up with the subway train as a solution.

In addition to the fact that this sound creates a vector, this last example is also an illustration of the fact that sound can frequently work 'better' than music. The use of music in this scene would have all too clearly informed the audience that something was going to happen. The advantage that 'sound' has over music is being noticed as, in film, the audience accepts sound as 'real' and 'realistic'.[59] While music and, in particular, the beginning and end of a cue, is always noticeable, that is not so for sound, as long as it is plausible. We saw in the associated paragraph that the limits of that plausibility can be greatly stretched. This can also be seen in the above example. The sound and volume of the screeching subway train is entirely unrealistic, as the scene is set in a restaurant. In tests, audiences appear not to notice this at all.[60] To achieve the effect, Walter Murch already introduced the sound (just not as screechy and at a lower volume) in the previous scene, in which Michael Corleone goes to the toilet to get a gun that has been hidden behind the cistern for him. We, the audience, have therefore already been 'informed' of the sound. The visual zooming in on Michael's head then indicates that we are going 'into Michael's head', which is further enhanced by the increasing screeching sound of the subway train. Actually, it is the fact that the vectors in the sound and the visual tracks are running parallel that ensures the scene is 'believable' and you don't 'lose' the audience.

The above examples of the 'static – dynamic' dipole in the sound track are all taken from film, and therefore fiction, so they come under 'entertainment' as we defined it at the beginning of chapter 1. If you look at that dipole in informative audiovisual productions, such as documentaries, we see that there is far less incidence of 'dynamics', in other words a clear development in the sound track. One specific principle in documentaries is, namely, that the audience should come

59 Audiences are still under the impression that films are made by recording the *pictures* with a film camera and recording *the sound* with a microphone: those two together constitute the film.

60 For a number of years in succession, this test was conducted amongst Sound Design and Composition for Media students, none of whom found the scene implausible.

to its own conclusions. The idea is that the documentary maker simply records and then shows what has been recorded to the audience. Little or nothing is done to introduce development into the sound track as this easily creates the impression that the audience is being manipulated. Naturally, there are innumerable mixed forms of entertainment (fiction) and information, such as docudrama, where dramatic developments are, indeed, added by means of the sound track. Sometimes it doesn't work, though. The Dutch Safety Board made a reconstruction film of a fire in a detention centre at Schiphol Amsterdam airport in 2005. The use of dramatic American film music in the film meant the whole thing was experienced as manipulative. Not really a form you expect from a scientifically-underpinned study, but one we are increasingly encountering.

Unlike informative productions, the 'static – dynamic' dipole is deployed in branding, with narrative, storytelling, consciously being used in most forms. This is because of the effect of 'the story' as we briefly outlined it at the beginning of this chapter: we think in narrative structures and generally remember facts in story form. With branding, the aim is for this emotional commercial to give you a good feeling about the brand in question.

stable – unstable

If we also examine the '*stable – unstable*' dipole from a musical perspective, then it's a given fact that these concepts are also applicable to (the perception of) music. 'Stability' is a musical concept independent of any musical style or genre. The composer and conductor Pierre Boulez puts it like this in the documentary *Het Geheim van Goede Noten* [The Secret of Good Notes]:

> You have things, which have remained the same in the history of music. That's not tied to tonality but to much more general principles in perception. For instance, what's important is that you have stability. And then instability.[61]

Stability exists if the music in question has a recognisable structure, making it highly *predictable*, so it appears stable to the audience. Instability is the opposite: as there is no clear musical structure, it's

61 Hazendonk 1995

impossible to predict what will happen later in the music. There are innumerable examples of this in the repertoire of film music as well. *Chase music* is used in scenes in all kinds of action films.[62] Music characterised by continual tempo changes, often combined with complicated syncopated accents and/or polyrhythm. Such music therefore has no recognisable, let alone predictable, musical structure, so we define it as unstable. That is exactly the function the music should have, from a narrative point of view. Chase music is often used for chase scenes where the outcome is uncertain. It does exactly what such a scene needs: it increases the instability, which is often already great, due to the rapidly-changing editing/sequencing and the large amount of action on screen. The music has nothing to grab hold of, it doesn't say, 'Everything will turn out okay'; it simply makes the audience even more concerned about how the scene will end.

Another example of instability is found in Ligeti and Penderecki's sound field music, which Stanley Kubrick used in the film *The Shining*, for example. Average cinema audiences will experience these composers' music as unstable, as it's not easy to discover any recognisable musical structure in this type of music, which is more based on complex consonances and sound fields that shift slowly in time. Neither from a rhythmic point of view, because there is often no clear rhythm present, nor from a sonic point of view because there are all kinds of undefinable forms of consonance. What's more, unusual playing methods are used, making it difficult to deduce the sound source. To put it simply: the cinema audience can no longer hear that violins are producing that sound and it therefore misses the connection with the physical source, the violin. Factors such as 'we don't know where this sound comes from' enhance the feeling of instability.

Yet another way of creating instability in film music is to use extreme pitches. Everyone is familiar with the extreme string notes and the low drones used when there is a threatening situation:[63] In such situations, pitches in the 'usual' audible mid-range will come across as more stable than those extremes. Take a symphony orchestra having to play as quietly as possible (*ppp*: as pianissimo possible). This, too, is an unstable situation, as everyone knows roughly how an orchestra sounds at normal

62 *Chase music* is dynamic, energetic, rapid instrumental music that represents a feeling of tense excitement.

63 A *drone* is a continuous tone (or a constantly audible sound) in a composition.

or high volume. Everyone will therefore experience a *ppp* orchestra sound as unstable, as they are actually waiting for the moment when the orchestra 'breaks loose'. Something similar happens in music when there are 'stand-alone musical events', such as isolated accents or motifs that seem to come out of the blue as there is no musical structure to which these 'events' relate. This musical form is often deployed in suspense scenes. Here, too, there is often instability; the audience is waiting for the next unpredictable musical event, as it were.

If we take a broader view than just the musical element of the sound track and therefore also take voice and other sound into consideration, we see how instability can be created in those areas, too. In the film *No Country for Old Men*, a conscious choice is made to create suspense, in other words instability, with sound rather than music.
Sound designer Skip Lievsay:

> The idea here was to remove the safety net that lets the audience feel like they know what's going to happen. I think it makes the movie much more suspenseful. You're not guided by the score and so you lose that comfort zone.[64]

Even voice can create a feeling of instability by, for example, pronouncing the most innocent of words on the cusp of hearing, thus generating a threatening feeling.

Instability is an important element in narrative and, therefore, also in the sound track. It creates unpredictability and, at the same time, raises expectations as to how the story will progress from there onwards. Leonard Meyer's book *Emotion and Meaning in Music* shows how the most important emotional content of music is produced by the composer's 'choreography of expectation'. Composers can thwart our expectations, sometimes delay an expected outcome and sometimes simply give us what we are expecting. Playing with the audience's expectations constitutes a large part of a film composer and/or sound designer's work. That way, we can create suspense, as the outcome of an unstable situation is not clear in advance. Naturally, this is used in film genres such as thrillers, but it's also called more subtly into play in more regular drama. If, in the above scene in which a man and a woman meet on the street, slightly threatening music or a low drone can be heard, than

64 Lim 2008

this can imply imminent danger, to be revealed in the coming scenes. If we look at this from the perspective of codes, then it might be that the two characters themselves are completely unaware of the approaching danger but we, the audience, are. Expectations can also be raised by already introducing sound (or music) relating to a specific scene in the previous scene. In that scene you hear, for example, a dialogue that you are initially unable to place but which falls into place once the relevant scene begins.

From a musical point of view, the other extreme of the dipole, stability, refers to recognisable and, therefore, predictable musical structures. Music aimed at reassuring the audience, which we often hear in feel-good movies and romcoms. What we are talking about is common musical structures, such as the A-A-B-A song structure, the use of a regular common time (4/4) time signature and so forth. 'Stable' music is generally used when the narrative begins, when a (happy) ending has been reached or when there is a relatively calm, stable moment in the story. Turning back to dialogue and other sound, a calm, balanced and realistic sonic image without extreme changes can create stability.

combinations: dipole model

The combination of the two dipoles, the dipole model, comprises four quadrants, representing the following four possible 'situations' in the sound track:

1. *static and stable*. The sound track is telling us that the story is in a stable situation and that, in the short term, there will probably be no changes. Take, for example, the opening scenes in the romcom genre. The music in the opening scenes has a regular, recognisable and, therefore, reasonably predictable musical structure. The music also has no clear development or vector, so it reassures the audience. The same applies to other sound and any dialogues. Time plays an interesting role here: Such a situation can't last long; otherwise the audience will increasingly see the situation as unstable, despite the stable character of the music: "It doesn't make sense that nothing has gone wrong all this time… something is bound to happen sometime now".

2. *dynamic and stable*. The sound track is telling us there is a development afoot, but that development is under control, as there is a clearly recognisable and, therefore, predictable structure. An epic scene in which the hero is on their way to the top, for example, but still has to overcome a number of obstacles. The sound track is telling us that 'there may be trials and tribulations, but we can rest assured that all will end well'. The music in the sound track will have a constant time signature, for example, and a (repeating) familiar harmonic and/or rhythmic structure. The difference between this and the first category is that the music is clearly developing towards something; it has a vector. Such a development can also take place in the other elements of the sound track, such as sound effects and ambiences.
3. *static and unstable*. The sound track is not (yet) undergoing any development, but the situation is unstable, so something could happen at any moment. A suspense scene preceding a chase, for example: a threatening low (or high) tone with unstructured musical events and/or sound effects. Time plays an interesting role here, too. The longer the music remains static, the more unstable the situation becomes, as an unstable situation can't last forever and the audience will increasingly start expecting a development.
4. *dynamic and unstable*. The sound track is telling us a development is underway, but that development is actually unstable; evidently there is no handhold in this development. Take the aforementioned chase music, but then a variation including a development. Examples of this are fairly rare, as most chase music is simply unstable, without any development. This is fairly logical as, to establish that there is a development in music, there generally has to be a clear musical structure for that development to relate to. Such a development in chase music will therefore generally be in the form of rising and falling pitch and augmenting and diminishing instrument volumes. Increases and decreases that are more incidental that really structural, therefore, due to the lack of any recognisable structure.[65]

65 A good example can be found in one of film composer Harry Gregson-Williams' master classes: https://www.youtube.com/watch?v=oYhxX1bUU_Q&t=219s (from roughly 3'30'').

Examples of the sound track in the aforementioned quadrants can be found on the De Sound Track website. The dipole model is, first and foremost, useful for analysing an existing film: what is the narrative progression of that film and what role does the sound track play in that progression? The model can also be used as a (kind of) framework for designing sound tracks: What should the audience experience? What kind of audience expectations do I want to raise? This applies at not only scene level, but also at the level of the film as a whole. From that point of view, the dipole model can also help in *structuring* the finalisation of the film story and developing a concept for the sound track. Not only the sound track for a specific scene can be seen as a composition but also the sound track for the film as a whole. Just how common this approach is in practice is examined in chapters 3 and 4, where I discuss the individual design processes of the composer and sound designer.

Finally, we need to realise that, in practice, the three codes (emotional, cultural and dramatic) occur in all manner of variations, relationships and forms of combination and mutual influence. A dialogue between a man and a boy can make it clear that we are in the Scottish part of the United Kingdom. The environmental sound also creates a lovely pastoral atmosphere, with birdsong, for example. As the scene goes on, however, it becomes quieter and quieter. The music is of a static and unstable character, which probably means that some kind of mischief is about to happen. This creates a certain tension and a certain feeling of anxiety for the audience, especially if we feel involved with the boy as a result of what we have already seen him go through in previous scenes. The music also makes us interpret this dialogue differently: encouraged by the music, we hear and experience the subtext, the emotional layer beneath the actual text that lets us know the man has quite different plans for the boy than his words imply. At the same time, the music drives the narrative, as the music is static and unstable, which has to lead to either a development (the boy runs away and the man goes after him) or a stable situation in which the threat subsides and we settle back into our cinema seats with a sigh of relief.

So, in this sound track there is a cultural code in the dialogue (two characters speaking in a Scottish accent), which is given an extra layer by the music and the increasing stillness of the surroundings, which we, as the audience, experience as a possible threat (emotional code). At the same time, the story is driven forward (dramatic code) by the mounting tension. Something has to happen: either things go really wrong or the situation turns out for the better

and calm is

restored


the sound track


creates meaning

the design process for an audiovisual production

introduction

This chapter discusses practice and I will make frequent references to the theory in chapter 1. I will take feature film production as an example, as this is the most complex audiovisual production and entails all the common situations. A feature film is also the clearest example where narrative is concerned, which is the focus of this book. Where relevant, I will indicate the differences in relation to other types of audiovisual production, such as advertisements and documentaries. Within the context of the feature film, I distinguish between two categories: those films that adhere strictly to specific *genres* and *formats*, such as the family film and the romcom (plus the associated production and earning models) and those with their own signature, which can sooner be categorised as *authors' cinema*.[66] This chapter focuses on authors' cinema as this category generally employs a design process with a relatively large amount of room and time for experimentation, exchange of material and consultation. This means maximum involvement of the sound designer and composer. The other category is more aimed at producing the film as efficiently as possible and working with a strictly-planned design process in which everyone makes their contribution adapted to the format.

In this chapter I discuss the various stages in the design and production of such a feature film, from the point of view of the composer and sound designer, including the various forms of collaboration with other

66 Think of films such as *Verliefd op Ibiza* [In Love on Ibiza] and *Rokjesdag* [Skirt Day] as opposed to the films by Alex van Warmerdam, for example, such as *Abel* and *Schneider vs. Bax*.

disciplines. As I already mentioned in the introduction, this could involve a number of people, in the sense that a composer might work with an orchestrator or co-composer and the sound designer might work with a dialogue editor, Foley artist or re-recording mixer. As soon as such a collaboration becomes essential, this will be mentioned but, in principle, I am assuming a composer and a sound designer represent those teams. The same then applies to the editor who edits the footage, but sometimes also has co-editors, the producer who is responsible for the entire production and the director who may be part of a larger group of directors.[67]

stages

Historically, the design process for a feature film entails three stages: the pre-production stage, the production stage and the post-production stage.[68]

This trichotomy originates from the Hollywood studio model, which represents the entire process, from the initial idea up to and including the eventual distribution and showing in cinemas, in successive stages.

The *pre-production stage* includes all the preparations needed before shooting can take place: casting[69] of actors and actresses, compiling the crew, finding locations, rehearsing with the actors, developing ideas on the visual and auditory style of the film and the ensuing consequences for the necessary technology.[70] It is at this stage, too, that the *breakdown* and associated production plan are made.[71]

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67 A number of co-directors may work on a drama series with a large number of episodes.

68 You can find specific information on these stages from a production viewpoint in a number of books, including *Handboek voor Productieleiders* [Handbook for Production Leaders, Dutch language] (Desiree te Nuijl) and *Films Produceren – Handboek voor professionals* [Producing Films – A Manual for Professionals, Dutch language] (Carolien Croon & Stienette Bosklopper).

69 *Casting* means selecting the actors for specific roles. The actors who are finally chosen are together referred to as the *cast* of an audiovisual production.

70 The *crew* refers to the collection of people and disciplines that work together on the audiovisual production. A distinction is made between cast and crew. The cast is in front of the camera and the crew works behind the camera and is responsible for recording and the final processing that leads to the end product: a film, a documentary, etc.

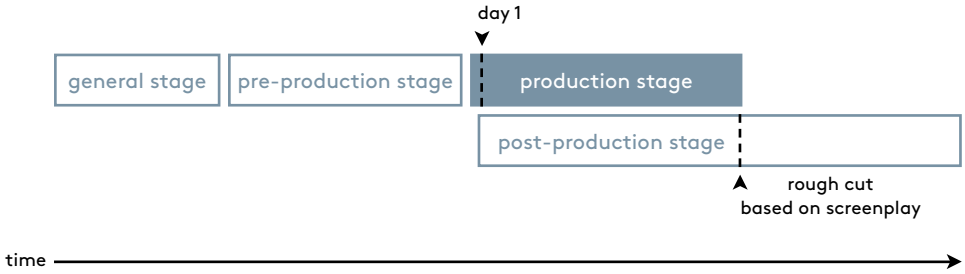
71 The breakdown details the *who, what, where and how* for each scene.

During the *production stage*, image and sound are actually recorded. This is done on the set: a location or studio where the crew films the scenes with the cast, on the basis of the breakdown. You generally need numerous locations for a feature film and the cast and crew move from location to location during the production stage.

The *post-production phase* begins immediately after the last of the footage has been shot. In this final stage, all the material that has been recorded (picture and sound) is edited, processed and turned into the finalised feature film. At this stage, it is primarily the disciplines of editing (editor), sound (sound designer) and music (media composer) that compile the eventual feature film in close cooperation with production and direction.

You will still regularly encounter these three successive stages in feature film and other audiovisual productions. In many cases, another stage has been added, which precedes the pre-production stage: the *general stage*, when you actually find out whether the idea for a feature film is feasible. Research is carried out, possible financing is explored and, partly on that basis, a screenplay is written, which is then used to find financing. With an audiovisual production such as a TV commercial or a corporate film, it's not generally a producer or director attempting to realise an idea; the production will be commissioned by a company or social organisation. Research will be needed in that case, too, as will a screenplay that can be produced within the set budget.

In addition to the advent of the general stage, there has been a development in the post-production stage. In many cases, this stage already begins during the production stage. This development has been facilitated by digital technology, which is deployed in all post-production disciplines. Consequently, for a drama production, such as a feature film, at the end of the first day of the production stage, the editor already starts editing the footage (image and sound) recorded on that day, based on the screenplay. At the end of the second day of shooting, the editor edits the material from that day and so forth. That way, there is already an initial rough cut of all the footage shortly after the end of the production stage. Represented visually, it looks like this:



If we look at the creation of a film from a purely content point of view, then the classification is slightly different from the above. Walter Murch defines it as follows:

The acting, the shooting, the editing, and the sound may all blend into one another, but in fact there are five stages in a film's life: the script stage; the preproduction stage, where you cast and choose locations; the shooting; the editing; and then the sound and music stage.[72]

In the above representation, we can see that the production stage (shooting) runs virtually parallel with the post-production stage (editing and the sound and music stage). That is so from the point of view of time, but, in terms of content, they are separate processes with the material created in the production stage being processed at the post-production stage, including dealing with any associated problems that have occurred during the production stage. Walter Murch on the problems arising at each stage:

Every stage leaves a residue of unsolved problems for the next stage – partly because the particular dilemma you're facing cannot be solved in terms of the medium that you're working in right then. For instance, at the script stage there may be issues that have to be left undecided, so the actors can have a fruitful ambiguity to work with. It would be deadly if you did solve all the problems in the script – you do not want to be asking for the gods' help at every stage – because then everything would be a mechanical working out of an already established form. [...]
I think that even when the film is finished, there should be unsolved problems. Because there's another stage, beyond the finished film: when the audience views it. You want the audience to be co-conspirators in the creation of this work, just as much as the editor or the cameraman or the actors are.

72 Ondaatje 2002: 104

If by some chemistry you actually did remove all ambiguity in the final mix – even though it had been ambiguous up to the point – I think you would do the film a disservice.[73]

Murch's conclusions, which are justified, also refer to the role of the audience itself as described in the paragraph on narrative and, from a *content perspective*, produce a slightly different representation.

While Murch still indicates an order in the post-production stage (first editing and then the sound and music stage), thanks to current digital technology it's possible to have those processes running far more concurrently and in a far more integrated fashion, as we will see in the paragraph on the post-production phase.

Whereas, for fiction, post production already begins during the production phase, that is not the case with a documentary. There is no prescribing screenplay to offer any reference frame for initial editing, a concept that explains the topic of the documentary, for example, and the way in which it is to be visualised. A great deal of footage is shot during the production stage. Only once the stage is completed do the director and editor start processing that material. That means a lot of viewing and choosing, making rough cuts, trying out and discussing, side-tracking and experimenting until the final form and structure are achieved. The saying that a documentary is made in the post-production stage is therefore true. Documentary director Coco Schrijber has this to say about the process:

For the editing, I really have a plan, a concept for image and sound. Then we try that out. Talk and discuss a lot. I also collect a lot of sound and music beforehand. We try out things together, so I can't leave it to the editor alone.[74]

73 Ondaatje 2002: 104 – 105

74 Schrijber 2011

general stage

In the general stage, an initial version of the screenplay is developed on the basis of an idea and this is used to submit a request for subsidy or obtain client approval. So it's not yet certain that the production will proceed. As soon as the go-ahead has been given, we go on to the pre-production stage.

In many cases, the composer or sound designer has not yet been involved in developing the screenplay, although that might well have added value. Sound designers Herman Pieëte and Michel Schöpping talk about that possible early involvement:

If you want to use sound to tell the story, then you have to explore that from the very beginning and already start thinking about it at the screenplay stage.[75]

I prefer to be involved from a very early stage. As far as I'm concerned, that could even be before the screenplay is written. That way, I can develop along with the project and influence the writing process.[76]

concept forming

After all, sooner or later, you always need a concept for the film and, consequently, for the sound track, too: a general idea about the functionality, aesthetics, style and genre of the sound track in combination with the visual track. It's important to have an umbrella concept, particularly with audiovisual productions of a specific length, such as feature films and documentaries, so the audience doesn't get the idea that the composer or sound designer has reacted ad hoc to the visual track, but feels there was some kind of vision. A vision that also, to some degree, ensures continuity and consistency. It's important to develop such a concept at an early stage, together with the director. A jointly-developed concept can prevent various visions arising along the way that could be counterproductive. Such concept development should, therefore, already start during the screenplay stage. Unfortunately, though, this rarely happens, as that requires the team (production, screenplay, direction) realising its importance and therefore consciously seeking input for the screenplay from the composer and sound designer. Randy Thom, sound designer for such films as *The Revenant* and *Cast Away*, is someone who clearly pleads this case:

75 Pieëte 2011

76 Schöpping 2011

Thinking about the role and function of sound and music in a narrative should already start during scriptwriting or at least very early on in the production process, when there's still time for sound ideas to percolate up and have an effect on creative ideas in all the other crafts. Because if that doesn't happen, and still today most often it does not happen, filmmakers really only begin to think about sound in serious terms during what's called post production. By that time decisions have been made and implemented in all the other crafts, and this has made narrower and narrower the number of possibilities available to the sound people to participate in the storytelling. And so, finally, on each project sound finds itself in a creative straightjacket in which the only thing it can attempt to do is to decorate what already exists, decorate what's a fait accompli. As far as I know there are no great film sound tracks that have been done that way. Great sound design is not something that you apply cosmetically to an existing piece of work. The question is how to address that. How can you take sound seriously from the beginning? Even starting from the screenplay?[77]

A sound track concept can be developed and ultimately implemented on the basis of the following questions/viewpoints:

- ***Conceptual*** **– what story does the film want to tell and what is the possible role and function of the sound track (remember, for example, the cultural, emotional and dramatic codes from chapter 1) in telling that story?**
- ***Dramatic*** **– at which points, in which scenes and sequences, does the sound track fulfil these specific roles and functions and what does that mean in concrete terms for the dialogue, music and other sound (such as the starting and stopping points for music, the intensity/energy of the music and other sounds)?**
- **Mus*ical or sonic* – which ensemble(s), instruments(s), noise(s), sound(s) and/or musical genres and styles can be deployed to tell the story?**
- ***Sound technology*** **– how do the frequency spectra of music, dialogue and other sound interrelate? In other words: how do we prevent them getting in each other's way?**

These are questions the composer, sound engineer, editor and director will ask from time to time during the various stages of filmmaking. Of one another, but also of themselves, as an 'internal' question.

77 Thom 2011: 103

screenplay

If we look in slightly more depth at the creation of the screenplay we see phasing, with a number of moments at which input can be sought from the composer and sound designer.

Naturally, it starts with an *idea*. Often, that is an anecdote, something the director or screenwriter has experienced, heard or read. Or the idea may come from music. One apt example is the screenplay for P.T. Anderson's film *Magnolia*, which is based on songs by Aimee Mann:

> I sat down to write an adaptation of Aimee Mann songs. Like one would adapt a book for the screen, I had the concept of adapting Aimee's songs into a screenplay [...] For instance, in my original motion picture screenplay, Claudia (played by Melora Walters, with a true sense of Aimee Mann insanity) says, "Now that I've met you, would you object to never seeing me again?" I must come clean. I did not write that line. Aimee Mann wrote that line as the opening of her song, "Deathly", and I wrote backwards from that line.[78]

That initial idea then has to be elaborated upon, as it often represents something more profound or universal: what is the underlying theme? Once that is clear, it allows the original idea (the anecdote, the incident in the paper) to be refined and its dramatic potential further developed.

A subsequent step is the *logline*: a description of the film story in a maximum of three lines. On one hand, such a logline is important for convincing 'the reader' of the story's potential and, on the other, it forces the screenwriter to pinpoint the essence of the story. This logline therefore has to be inspiring enough for the reader to want to know more. At the same time, the logline has to contain all kinds of information: who is the main character? what is the conflict? and so forth. These questions can, in fact, be condensed into three words: *who*, *what* and *how*?

The next step is actually a more extensive version of the logline: the *synopsis*. The synopsis (a maximum of a couple of pages) briefly describes the story: what it's about, who the main character is, where it's set and at what time. The synopsis therefore gives us further insight into the narrative structure and the emotions that will play a role in the story.

78 Anderson 1999

A *step outline* is then worked out, describing the story in steps.[79] The screenwriter divides the story into scenes and describes each scene in a couple of sentences. That gives us more insight into the narrative structure of the film and clarifies whether there are any missing or superfluous scenes.

Another subsequent step is the *treatment*. The treatment details the scenes even further and we gain more insight into not only the story structure and emotions but also the aesthetics of the film: how does the film look? How does the film sound? The treatment does not yet contain any *dialogue*. Once that is added to the treatment and the scenes are detailed slightly further, then that becomes a *screenplay*. Dialogue entails *text* and *subtext*. The text is what a character literally says and the subtext is what the character actually means. The step outline and the treatment can already include initial audio ideas, which will then be elaborated upon in the screenplay. The inclusion of a lot of POV scenes, for example, provides the opportunity to mould that subjective world by means of the sound track.[80]

Once the screenplay is finished, a final step has to be taken: the screenplay must be turned into a *producible script*. Firstly, a *scene list* is made: an overview of the scenes in the treatment, including their content, production requirements and estimated timing. Based on this scene list, the producer can draw up an (provisional) production schedule and budget, to gain an initial indication of the feasibility of the production. This can lead to a revision of the screenplay (fewer foreign locations or a modified scene structure, for instance). Decisions also have to be made with regard to sound, music, carrier,[81] production value[82] and so forth. All these steps and decisions ultimately result in a producible script: a screenplay that has been fully worked out and can be produced within the available production time and budget.

With a documentary, a treatment (also referred to as a documentary plan) is generally the end of the line. In other words, there are

79 Also referred to as the sequence outline or *sequence description*.

80 POV stands for *point of view* and means we actually watch and listen through the eyes and ears of a character, experiencing the character's subjective world.

81 Will it be shot on 35mm film? Which cameras will be used? and so forth.

82 *Production value* means: 'What does the scene as described now in the screenplay add to the story and how does this weigh up against the resulting costs and production problems?'

no detailed dialogues, just a rough idea. This is logical for a film that attempts to represent an aspect of reality, such as politics, society, history or the documentary-maker's personal experiences. For audiovisual productions aimed at branding, such as commercials, though, in addition to the screenplay there will be a detailed *storyboard*.[83] This is intended to provide the client and the crew with more insight into the intended end product, creating more certainty with regard to the proposed commercial. An understandable approach in view of the relatively high budget often entailed in this type of production. In any event, it's easy to make a storyboard for this type of audiovisual production, as they are almost always relatively short productions (between fifteen seconds and five minutes).

Storyboards for feature films, drama series, etc. don't come into play until the pre-production stage, once the production has already been given the green light. Other types of visual material will be provided along with the screenplay in pitches and subsidy requests: *moodboards*, photos of potential locations and the intended cast, for instance.[84] In addition to the screenplay (or treatment in the case of a documentary) and any storyboard and/or moodboards, a *director's statement* is often included, in which the director gives an idea of the look and feel of the film (style, camera technique, acting style, etc.). Finally, there is another specific variant of all the above textual and visual representations, particularly where a *drama series* is concerned. This is the *series bible*, which includes all kinds of information for conveying the idea for the drama series: logline, synopsis, tone, style, genre, length, target group, description of the characters and their mutual relationships, background stories on the characters, a detailed episode and sample scripts. This is all in addition to the visual information such as moodboards and photos.

soundboard

From the past few paragraphs it is clear that, at this stage, textual and visual information is primarily being described and established. The audio aspect is not yet being considered. Up to a certain point, this is

83 A *storyboard* is a number of sketched shots from scenes in a screenplay, as the director foresees them. These are intended to help the cast and crew get a picture of how the scene should look.

84 A *moodboard* is a visualisation of a concept, idea, thought or feeling and, in the case of a film, can give an impression of the film's aesthetics: what kinds of image are we about to see? Dark, mysterious streets? Bucolic landscapes? A lot of extreme close-ups?

understandable, as plans often still have to be submitted to potential subsidisers or clients in writing, so there is only room for textual or visual content.[85] What's more, the majority of producers, directors and screenwriters don't (yet) realise that 'audio content' is also important at this stage, in addition to the visual and textual element.[86] Just as storyboards and moodboards have to be produced, a *soundboard* can be made in which you can hear samples that gives an impression of what direction the sound track for the proposed film will take. This might include specific voices and the way in which they are recorded,[87] the ambiences of certain locations[88] in the screenplay, examples of specific music styles and specific sound effects.

Take the opening scene from P.T. Anderson's *Punch-Drunk Love*, in which we hear, in succession,

- a telephone conversation;
- vague sounds of a skidding car and screaming;
- silence;
- footsteps through a warehouse;
- the garage door of the warehouse opening;
- sounds from 'outside';
- a car starting up and skidding off;
- a Jeep Cherokee turning over, bouncing, stopping and driving off again;
- a Toyota driving up, screeching to a stop, a side door being slid open, a harmonium being set down, the side door being closed again and the Toyota screeching off;
- silence;
- a car tearing by;
- silence;
- footsteps walking back.

INT. WAREHOUSE – EARLY MORNING
CAMERA (STEADICAM) holds on a man in a suit, sitting behind a desk, on the phone: BARRY EGAN (Adam Sandler)

85 At the Dutch Film Fonds [Dutch Film Fund], you have to complete a request form as a digital pdf online and then send a printed copy.

86 This is striking, as the majority of directors say that 'the sound' constitutes 50% (or even more) of the film.

87 Such as the voice-over of Captain Willard in *Apocalypse Now*.

88 The ambiences in David Lynch's *Eraserhead*.

BARRY
…yes I'm still on hold…

OPERATOR
And what was this?

BARRY
I'm looking at your advertisement for the airline promotion and giveaway?

OPERATOR
This is "Fly With Us?"

BARRY
It's hard to understand because it says in addition to but I can't exactly understand in addition to what because there's actually nothing to add it to…

OPERATOR
I think that's a type-o then, that would be a mistake.

BARRY
So, just to clarify, I'm sorry: Ten purchases of any of your Healthy Choice products equals five hundred miles and then with the coupon the same purchases would value one thousand miles --

OPERATOR
That's it.

BARRY
Do you realize that the monetary value of this promotion and the prize is potentially worth more than the purchases?

OPERATOR
I don't know… I mean: I don't know.

OC[89] DISTANT SOUND OF A CAR SKIDDING TO A STOP, SOME VAGUE, DISTANT SCREAMING IS HEARD…THEN SILENCE. Barry hears this, gets distracted, then back to the phone call;

89 OC = off camera, so off screen.

BARRY
Can I call you back if I have any further questions…? Can I get your extension?

OPERATOR
It's extension 215 if you want to try me back.

BARRY
Ok. Thank you.

He hangs up the phone and walks through his warehouse. It's fairly non-descript place, boxing materials, etc. Products seem to be mainly silly novelties (pens that light up, key chains, novelty toilet plungers, etc.).
He lifts a LOADING DOOR and LIGHT POURS INSIDE, WASHES OUT THE FRAME…he's silhouette…CAMERA follows him out…stays overexposed and over his shoulder as he looks down towards the street…
… his business is situated at the end of a common driveway, shared with a few other non-descript places and an Auto mechanic….distant SOUND of a car SPEEDING and SKIDDING….
… hold, then:
… a JEEP CHEROKEE comes FLIPPING into FRAME, far off at the mouth of the alley, on the street. The JEEP ends up landing RIGHT SIDE UP…HOLD…
… Barry flinches a little, stares…the JEEP sits idle for a moment…then it drives off…then: A speeding, small TOYOTA comes into view at the mouth of the alley, screeching to a halt. The passenger side door opens and a small, wooden HARMONIUM (like a portable organ) is placed on the ground. The TOYOTA speeds away…
… a moment or two later another NON-DESCRIPT CAR flies past very fast…
BEAT. Barry squints, looks at the small HARMONIUM sitting alone in the middle of the street.
He hesitates, looks around, holds, then walks back inside his warehouse.[90]

This scene (like the whole film) is clearly written from both a visual and an auditory perspective and includes numerous auditory 'events'. On the basis of such a scene, a sound designer can already develop various ideas and concepts and try them out with the screenwriter and director. These ideas and concepts can be represented with a soundboard like this: an audio file with possible approaches to the scene. Letting a director or screenwriter hear a couple of difference auditive interpreta-

90 Anderson 2002

tions of something as seemingly simple as 'sound from outside' can go a long way towards forming a concept for the entire film. Different types of footsteps can generate totally different characters and different types of silence can either bring calm or create a slightly threatening atmosphere, for instance. Unfortunately, too few screenwriters and directors are aware of the possibilities for creating varying meanings for one and the same event. All too often, they have the idea that it makes little difference what kind of footsteps you give a character. Letting a director or screenwriter hear various *different* auditory options for 'footsteps' or 'silence' can provide insight on the power and the possibilities of sound. That way, they can experience for themselves the *difference in meaning* brought about by using a different 'footstep sound' or a different 'silence atmosphere'. Such a soundboard will undoubtedly also encourage discussion between the various disciplines involved ("No, those footsteps sound like the footsteps of someone who is old, not very energetic… in my view our main character is far younger and far more energetic, in particular"), providing more clarity with regard to the ideas and images everyone has for the scene.

collaboration

Collaboration while writing the screenplay between the director, the screenwriter, the sound designer and the composer can therefore provide the screenplay with far more depth, as various viewpoints can be employed: textual, visual and auditory. The idea is construct the story, the emotional content of that story and the aesthetics of the film: How does the film look and sound? All this has to fit in with the underlying theme: what do we want this film to tell the audience? Deploying 'auditory disciplines' while developing and writing the screenplay can lead to a different relationship between textual, visual and auditory content. It may be possible to formulate a dialogue differently if the visuals and sound are already creating the necessary information and meaning. What's more, the sound designer, in particular, can already contribute to the planning and financial side of the production by advising on sound recordings on set, whether to use ADR, checking out problematic locations with regard to sound and so forth. Finally, involving the sound designer at this stage also provides them with input for the sound design, generating ideas and concepts for the final sound track. Sound designer Nicolas Becker has this to say about the process.

Generally my process is to read the script, meet the director, find some artistic ideas, validate some of the ideas with the director, meet the producer, work on a budget to fit the expenses with the needs, create a team, organize some preproduction meetings with the picture department (picture editor, CGI, DOP)[91] but if needed also meet the 1st AD,[92] the set designer and the costume designer. These pre-production meetings enable me to see if there are any special opportunities for helping the process of the production sound as well as the post production sound. I then make a schedule starting right at the start of the shooting until the end of the sound deliveries. Then I have meetings with the team to organize the way we are going to share the work and meet the special consultants if needed; for example, scientists, musicians, software designers, etc.[93]

It's therefore essential to have the sound designer and composer involved in developing a screenplay from an early stage. The problem is, however, that such a decision rests with the producer and/or director. They need to realise right from the initial idea that, in addition to visual and textual input, auditory input is also important for achieving a meaningful narrative. In most situations, a sound designer or composer will not be aware of the development of an idea into a screenplay and therefore depends on the producer and/or director (and/or possibly the screenwriter) to involve them. As I mentioned earlier, convincing the producer and/or director of the importance of collaborating as early as possible on a proposed new film is good strategy. Sound designers and composers are often, however, only brought in at the production or post-production stage. Not that this automatically leads to poor results, but it does mean a greater risk of problems. This approach allows for only minimal room and time for research and experimentation and, as Randy Thom already said, the sound track will be limited to 'decorating what has already been thought of'. Director Paula van der Oest is highly aware of the importance of involving the sound designer and composer early on in the process:

I really get the impression that if you involve people more in the process you will get more input and feedback from them. As a director, you can think it all up by yourself, but making a film is all about getting the best out of other people

91 *DOP* = 'director of photography', a (kind of) camera director who is responsible for the visual track.

92 *1st AD*, the first assistant director, who organises lots of things for the director and is often the link between the director and the rest of the crew.

93 Albrechtsen 2012

and elevating the project to a higher level. You are still responsible for the results, as the director, so you had better make use of other people's input.[94]

If it's more or less clear beforehand that music can play a specific role, the producer or director will involve a composer in the writing of the screenplay. This often applies to musical films, such as *La La Land*, when music, in the form of songs, structures the narrative and those songs have to be produced beforehand in order to be able to use them while shooting on set. For this type of film, it's therefore essential to involve a composer at the screenplay stage, as you need the expertise of a composer (and possibly a lyricist) to insert songs into a screenplay.[95]

Even when it's not a musical film, it's wise to have a composer involved at the screenplay stage. A composer can then already develop the initial musical ideas and concepts, discuss them with the screenwriter and directors and then turn them into (initial) music sketches. Those sketches can be used to check whether all the parties involved are thinking similarly with regard to the content and form of the film and, in particular, the musical part of the sound track. The composer Gabriel Yared, who wrote music for *The English Patient*, for example, wrote this on the composer's involvement:

I think composers should be involved from the very beginning of the project. There is no way you can help a film if you just devote three months to it. We should be involved in the preparation of the film and propose some themes, for example, during the shooting process. I think this is the only way to produce good music and a beautiful osmosis between the picture and the music, which is there to serve the picture. I can tell you how this worked with one of my well-known works in France, Betty Blue, a 1985 film by Jean-Jacques Beineix. This music was written eight months before the shooting. I talked with the director and we read the script together, exchanging ideas [...] All this work that was done before the shooting made me discover the music, which helped the film as it was shot. The cinematographer would act like a choreographer – listening to the music and shooting at the same time. Being on the picture very early in the process brings to the film and the director many ideas of how to shoot and direct [...] So, for many of the films that I did in France, I wrote the music before the shooting. Then I adapted the themes to fit the picture before delivering the actual score.[96]

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94 van der Oest 2011

95 If the screenwriter isn't writing the lyrics.

96 DesJardins 2006: 276 – 277

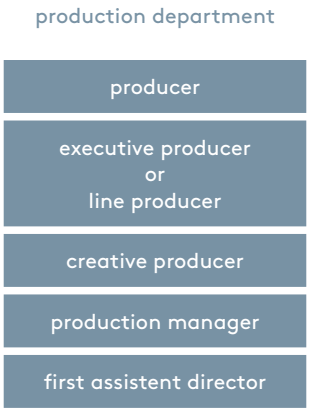
pre-production stage

If the client has given their approval and/or the necessary financing is in place, the pre-production stage can begin. The screenplay is approved and producible from a scheduling and financial point of view, so now the producer needs to set up the necessary organisation. They generally appoint an executive producer (EP), who takes over the project management on behalf of the producer. At this stage, too, the various disciplines are organised into various departments:

- production department
- direction department
- art department
- camera and lighting department
- sound department

departments

As a visual representation, the various roles and tasks within the departments generally look like this:[97]



The *producer* is the one it all starts with and who is responsible for the entire production. They may initiate projects themself, but may also be commissioned by broadcasting companies, advertising agencies and companies to produce an audiovisual production. For the actual execu-

97 Most departments often also have assistants, such as the *runner* for the production department (the assistant who brings everything and everyone together) and highly specific functions, such as the *data loader* in the camera and lighting department, who is responsible for copying the footage shot.

tion of the production (depending on the type and size of the production), they appoint an *executive producer*[98] and/or a *creative producer*. The executive producer compiles the 'skeleton' of the production. The actual execution of the production will be carried out by the *production manager*. For a series, a *creative producer* will often be appointed, who focuses on the content and form (and their continuity).[99] The *first assistant director* is responsible for what happens on the set.

Depending on when, as the composer or sound designer, you become involved in the production, you will be dealing with one or more of the above members of the production department. At the general stage, you will often still be working directly with the producer, while at later stages it will be the executive producer or the production manager. Financing and/contracts may often be the topic of discussion. During shooting (if, for instance, you would like to take a look on set) your contact person will be the production manager. If you are involved in a drama series, there is a good chance you will have substantive discussions with the creative producer, based on the series bible, which sets out the principles for the content of the series.

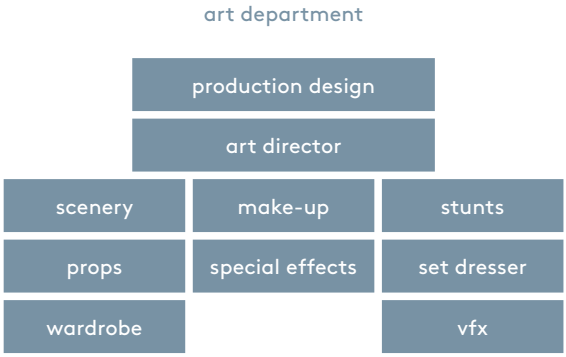
The *first assistant director* is responsible for scheduling for the direction department and manages any extra camera team (second unit) that may be shooting elsewhere at the same time. They can also give actors and extras more assistance in preparing the content of their roles.
In addition, they are responsible for communication and interaction between the production department and the direction department. The *direction assistant* is really the director's right hand, tasked with solving all the 'shit' during shooting, so the director can focus on visuals and the

98 In international productions, the term *line producer* is more common.

99 Increasingly, a *showrunner* is the person responsible for a drama series and is responsible for not only the creative but also the organisational aspects.

acting. *Script continuity* or *script* monitors the continuity of the picture during shooting (is the actor's hair the same in all the takes for one particular scene?), keeps an eye on the length of all takes and records everything in continuity reports.

As a composer or sound designer you will deal mostly with the director. In the case of a long-running TV series, such as a soap, a direction assistant may be the main contact person during the post-production stage. This type of production is approached as efficiently as possible and a tried and tested method is that of working with a number of direction assistants. Direction assistant 1 supervises the editing of the episodes they have shot on the set (as assistant). During editing, direction assistant 2 is then on set (as an assistant) to shoot further episodes, which they will then edit once direction assistant 1 is back on set. At the pre-production stage, there has to be a discussion with the director on the style and approach to the series in a more general sense. During the production and post-production stages, a direction assistant is more likely to be the contact person.

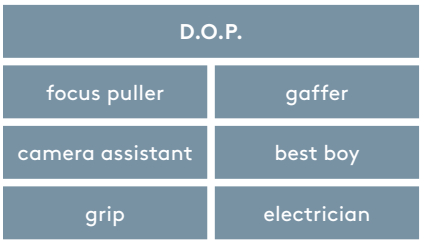


The above disciplines within the art department speak for themselves (vfx stands for visual effects).[100] As a composer or sound designer you won't have much to do with them unless (in the case of a musical film) music has to be played back or recorded on set. In that case, the acoustics of the set can be determinant and it may be necessary to consult with the scenery department for the use of extra absorbent material.

100 Here, there is no hierarchical overview: stunts and make-up, for example, do not come directly under the responsibility of the art director and neither does clothing, generally, but these disciplines do work with the art director.

If a lot of transmitters are being used, it may also be necessary to look at the clothing (are there any clothes that rustle, for example?). This is often done in consultation with the sound department. In addition, the entire design, the look of the film, can provide inspiration and insight for the sound designer and composer.

camera and lighting department



DOP stands for *Director of Photography*, the head of the camera department, who is responsible for 'the picture'. The *focus puller* is responsible for the focus and depth of the camera and the necessary lenses and filters. The *grip* is responsible for securing the camera on any apparatus, such as rails with a dolly or crane, a car mount (which enables the camera to be mounted on a vehicle) or a heli-mount (so a camera can be placed in the door of a helicopter).[101] The *gaffer* is head of the lighting department. They make the lighting plans and discuss the concept for imaging and lighting with the DOP. The *best boy* sets up the lighting on the basis of the lighting plan and is responsible for the logistics for the lighting equipment. The *electricians* are managed by the best boy and, together, they are responsible for the correct lighting on set.

In principle, as a composer or sound designer, you have little to do with the camera or lighting department, although the approach of the camera department, in particular (framing, lens use, etc.) can provide insight into the look of the film. One good example is the drama series *De 9 Dagen van de Gier* [The 9 Days of the Vulture], where the DOP Danny van Elsen stipulated beforehand that he wanted to use dark grading.[102] The composers and sound designers from Soundpalette therefore knew at an early stage how that grading would affect the images they were working with.

101 A *dolly* is a mobile undercarriage for a camera, a *crane* is a kind of see-saw for raising and lowering the camera. Both can be moved horizontally on rails.

102 *Grading* or *colour grading* means adjusting the colour tones and colour strength of the visual track.

These two functions within the sound department are concretely active during the production stage. The *sound recordist* is responsible for all the sound recorded during the production stage. He chooses the microphones and related technology that are to used and ensures that the recorded sound and the accompanying administration are delivered to the sound designer. The *boom operator* operates the boom, a long stick, with a directional microphone on the end, which is used to make as good a recording of the dialogue as possible without the boom being seen. In addition to the boom, transmitter microphones are also regularly used, for total shots, for example, where a boom could easily come into view. Depending on the film, *supports* may also be situated in various places on the set: invisible (shotgun) mics for recording relevant production sound (effects).

The *sound designer* may already be active during the general and pre-production stages. From the post-production stage onwards, other disciplines from within the sound department join in. In the introduction to this book, I already mentioned that we talk of 'the sound designer' and 'the composer'. In practice, though, the sound designer and composer are often surrounded by a team. In the next few paragraphs, I will describe these teams on the basis of practice in the Netherlands.

Evidently, this can't be compared with the US film industry, which has always been quite different and has a separate job description for almost every task.[103] In practice in the Netherlands, a larger, relatively complex film will entail a sound department with the following jobs (in addition to those described above, which play a role during the production stage).

- the *sound designer*, a job that is therefore interpreted in a very different manner. In major US productions, this is generally someone who, on the instructions of the supervising sound editor, creates specific sound effects and ambience based on an artistic and conceptual vision. In such a situation, a sound designer is responsible for a specific type of sound effect or ambience. A sound designer may do all the explosions, for example, and can therefore, if needed, use those explosions to create a certain development in the sound throughout the film. In more European productions (and in this book), the term sound designer is used to designate someone who is in charge of the sound in the film from a creative point of view. They may, therefore, outsource the actual making of the sound effects and ambiences, the dialogue editing, the creation of Foley sounds and so forth to specific editors, or they may do (some of) this themselves. The bottom line is that, from an artistic and conceptual point of view, they are responsible for the total sonic image of the film.
- the *supervising sound editor*, a job that is often more organisational but may also be creative in terms of content. The supervising sound editor is generally the contact person for the director and the producer when it comes to the sound design as a whole. This, in fact, corresponds with the job description of sound designer as described above. Tellingly, in many international films the supervising sound editor is credited as sound designer in the opening credits and then as supervising sound editor in the closing credits. In the Netherlands, this more organisational role is often filled by the sound designer, who is responsible for both content and organisational aspects.
- the *re-recording mixer*, or dubbing mixer, who mixes (all the premixes of) the dialogue, music and other sound into the final sound track. Really big, complex productions often have three re-recording mixers, corresponding with the three aforementioned elements of the sound track. For smaller-scale productions, as in the Netherlands, one

103 The credits for US films give a good idea of this differentiation: the various department have a list as long as your arm of jobs that are established and protected by the unions.

re-recording mixer generally suffices. The sound designer or supervising sound designer may also assume the task of re-recording mixer. Generally, though, there is a collaboration between the sound designer, who has created all the sound material for the sound track based on a particular vision and concept (or has supervised the job) and the re-recording mixer, who puts all that sound material into the right perspective and creates the final sound track.

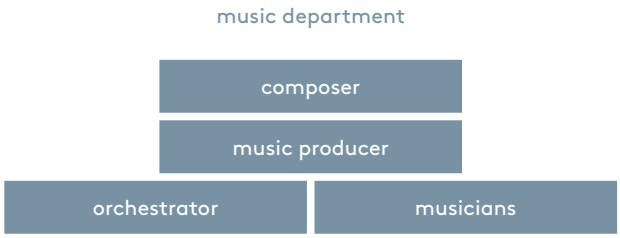
- the *dialogue editor*, a highly specific job, which often goes unmentioned if the work is done well but is immediately criticised if not. The dialogue editor has to ensure the dialogue runs smoothly during the various shots, that the dialogues can be clearly understood and that they match the right physical and emotional perspective. They also decide whether ADR is needed.
- the *ADR editor* (sometimes together with an ADR recordist and/or ADR mixer), who is responsible for the ADR process, including directing the actors. Depending on the complexity of the ADR, these ADR jobs may be carried out by one or by several people, such as the editor, the recordist, the mixer and, possibly, an ADR supervisor.[104]
- the *Foley artist* (often together with a Foley mixer or Foley editor), who creates all the sounds relating to the human actions in real time. These might be footsteps or the rustling of clothing, for example. A Foley artist will also regularly create (or help create) effects that are unrelated to any of the characters. The sound of equipment, machines, doors, the sounds of nature, for instance.
- the *sound effects editor*, who may often also make their own sound effects and so is, in that sense, a sound designer. Primarily, however, they collect sound effects and ambiences from sound libraries and adapt them to the visual material, process sound recordings and so forth.

Whether or not these job descriptions are allocated and how they are interpreted varies according to the production, the country and the (film) culture. Jobs are often combined and the associated tasks vary from film to film, depending on the genre. The sonic images required for a thriller with a lot of action scenes and chases and for a psychological drama with only two actors are quite different, so the sound design process will be different, too. What's more, digital technology has made it easier for 'sound people' to do several jobs within the sound depart-

104 And for scenes with a lot of actors? Are there specific requirements for actors having to deliver lines while carrying out all kinds of physical actions, such as running or jumping off a roof?

ment. One example of this is 'mixing in the box': mixing the sound track in the same DAW in which all the sound and music editing has been done.[105]
In that same (big, complex) Dutch film, if music is needed, the music department can look like this:

- the *composer*, who composes the film score and is responsible for the film music in terms of not only content but also organisation and finance. Alternatively, existing music can be used in the film.
- the *orchestrator* who, in the case of acoustic instruments, elaborates on the composer's music sketches for a specific musical setting, such as a symphony orchestra.
- the *music producer*, who deals with all the organisational, financial and copyright issues regarding the film music.
- the *musicians* (in addition to the composer, who often plays the music himself), who play the music in a recording studio.



There may also be a conductor, someone who writes out the parts, someone who contracts all the musicians, recording and mixing engineers and so forth. As in the sound department, jobs may be combined or interpreted differently, depending on the type of film, the style and genres of the film music, the budget available, etc.

sound and music departments

Clearly, good communication within and between the sound and music departments is important, as they are jointly responsible for the sound track. That communication will be both contentual and technical. At this stage, content discussions within the sound department may be about

105 DAW stands for Digital Audio Workstation, such as ProTools, Abletone Live, Cubase and Logic.

specific scenes in which the sound track is expected to play an important role. The sound designer may therefore make some specific sound recordings at a number of locations in advance, at the pre-production stage, as it is already clear at this point that those specific sounds will be needed in post-production. Alternatively, the sound department may record those sound during shooting, but there is often insufficient time for that as the focus is primarily on ensuring good recordings of the dialogue. To create a typical London ambience, for example, after shooting a number of scenes in Trafalgar Square the sound department may record a few minutes of set noise. The drawback to such a recording is that it will include all kinds of sounds (the roaring of buses and taxis, pigeons, buskers and so forth), which are difficult to edit, move or eliminate. A better approach would be to make a sound recording of Trafalgar Square when it's quiet, early in the morning for example, and then make recordings of those specific auditory events, such as passing buses and taxis. This way, you build up a library of 'basic ambience' and specific London sounds that can be added at any time, while controlling the level, tone colour, duration and so forth. This can prevent the sound of a passing bus cutting through a dialogue, for example.

The technical agreements within the sound department will often concern the way in which the set sound and the associated administration (sound reports) are delivered to the sound designer. In the case of a musical film, for example, music will probably have to be played back on the set, while the cast mimes. In such a situation, prior to the production stage the composer will compose and produce *mock-ups* with the correct timing, which are close, in terms of total sound, to the desired end result.[106] The right timing and sound is important, as the actors record their vocals in advance, on the basis of the mock-ups. They need to have the right musical context to ensure that their singing is fits.[107] During post-production, a final version will be produced, using musicians (if the budget allows), based on the timing of the mock-up. Vocal tracks can be re-recorded, as long as the timing still corresponds. If that causes problems, an editor can see whether they can find a creative work-around. A different shot can be used, for example, if the timing is no longer right.

106 A *mock-up* is a provisional performance of a (film music) composition, using samples.

107 It's not advisable to record the vocal track for a real heavy metal song in *Metallica* style on the basis of a mock-up made with acoustic guitar samples.

Alternatively, the actors may sing live on set, rather than miming. In that case, the composer will have to supply a backing track (the song minus the vocals) and substantial technical preparations need to be made on set to be able to make good vocal recordings. It's also possible to record the whole thing live on set (vocals plus orchestra or ensemble), a situation that demands a great deal of preparation and communication from and between the composer and the sound department (and, possibly, the art department if acoustic adjustments need to be made to the set).

Even if the film isn't a musical or anything similar, a director may still wish to play back 'the film music' on set while shooting. This may be to create a specific atmosphere or emotion for the acting or to give the right rhythm to a scene. Such an approach automatically means ADR in post-production. It also means the composer will already need to have completed a number of compositions (at the very least) in the form of mock-ups, which will be played back during shooting. Well-known examples of such an approach are Ennio Morricone's music for Sergio Leone's *Once Upon a Time in The West* and Jon Brion's music for P.T. Anderson's *Punch-Drunk Love*. Morricone and Leone had already worked together on a couple of films and Leone wanted to have the music in advance, to play on set to guide the actors' performances. This worked successfully for the first time with *Once Upon a Time in The West* and the effect is evident: the tempo and rhythm in which the actors move are clearly influenced by the music playing at that point. The editing is also clearly guided by the music and, as a result, *Once Upon a Time in the West* is frequently referred to as a cinematic opera. A more recent example is the film *Punch-Drunk Love*. P.T. Anderson asked for some rhythm tracks to use on set while shooting. Jon Brion produced a number of loops with all kinds of strange percussive sounds, which the director played back on set to make the actor Adam Sandler, in particular, feel harassed: a state of mind that suited the character he was playing.

To summarise, the sound designer or composer has dealings with the production department primarily to make financial and organisational agreements, with the direction department for content discussions, possibly with the camera and lighting department to gain insight into the look of the film and with 'colleague departments' (the sound and music departments) for both technical and content agreements.[108] Finally, it's important to realise that, when the production is relatively simple or low budget, jobs are often (necessarily) combined.

breakdown

The screenplay is worked out in more detail at the pre-production stage in a *breakdown*. This establishes the *who*, *what*, *where* and *how* for each scene in detail, so all those involved know exactly where they have to be and when and what they then have to do there. Together with the sound department, the sound designer can play an important role in the breakdown. All being well, at the screenplay stage a check has already been done to see whether any locations or scenes make it difficult or impossible to make good dialogue recordings. At the pre-production stage, the actual locations are determined on the recommendation of the *location scout*.[109] In principle, the sound department or the sound designer will visit all locations to see whether there might be any problems recording dialogue. This can result in a location being abandoned or acoustically adapted or the decision to only record a *guide track* while shooting and then replace it with ADR during post-production.[110] Such a decision has to be made at as early a stage as possible, as it will have consequences. From a financial viewpoint: ADR costs extra money (on the other hand, you can make do with simple and therefore cheaper sound equipment on set). From an organisational viewpoint: the cast has to be available for the ADR sessions after shooting. There are even implications for musical films: for those scenes where music has to be played back on set, special sound equipment has to be rented. If an orchestra or ensemble is being recorded, extra recording equipment will have to be rented.

108 This type of agreement is discussed in chapter 5.

109 Someone who looks for the specific locations for a film.

110 A *guide track* is a dialogue recording made on the set, which serves as a guide for the ADR sessions at the post-production stage.

Depending on the director and the complexity of the film, a storyboard may be created for the entire film or for a number of relevant scenes. Often, this relates to complex scenes in terms of camerawork or films that take place not in modern reality but in the past or the future. A storyboard for the entire film plus the screenplay can provide the sound designer and composer with the information on the visual content of the film that is necessary for creating the sound track.

If the production is complex then, in principle, there will be weekly meetings with heads of departments during the pre-production stage, to discuss progress and any problems. In practice, though, this is difficult, as those heads of department are generally also busy with other productions. Meeting regularly is a must for ensuring that the various departments remain adequately coordinated. For a simpler production, one big pre-production meeting (*PPM*) will suffice.[111] A PPM can be interesting for the sound designer and composer, as the style of and approach to the film will be discussed.

To summarise, the pre-production stage of entertainment productions, such as feature films and drama series, can provide the necessary input and therefore inspiration for the sound designer and composer, as the director Paula van der Oest says:

I generally have individual discussions with the sound designer and the composer, although I do prefer a meeting at which everyone is present. During the film Moonlight, we had those meetings before shooting, including music and editing. Perfect! And inspiring for everyone.[112]

The sound designer and composer can contribute to forming ideas, concepts and the screenplay when it comes to the question of how the film will sound, too. A composer can also make a specific contribution if music is already necessary during shooting. For other forms of entertainment, such as quiz or chat programmes, a composer will generally have designed a library of musical leaders, bridges, atmospheres and stingers, plus any sound effects.[113] Such a library provides the programme with an

111 A 100-minute international feature film can't be compared with a 25-second regional advertising spot from a production viewpoint.

112 van der Oest 2011

113 A *stinger* is a musical sound effect, which is often used to accentuate something in a TV programme or film.

auditory identity. Even then, it's still important for the composer to be promptly informed of the visual style and content of the programme.

The pre-production stage of a documentary may be slightly simpler, as there are generally no actors. In addition, it is often preferable to work with as small a crew as possible, to enable rapid, flexible response to unexpected developments during shooting. When it comes to designing the sound track, there is little difference between a feature film and a documentary during the pre-production stage. The suitability of locations also has to be examined. A storyboard may be created to make the style of the film clear to all concerned. In this case, too, a composer needs to be involved contentually if music is to play a role during shooting. One example of involving the sound department in such a production is Jos de Putter's documentary *Het is een schone dag geweest* [It's Been a Good Day]. Before shooting, it was decided to record the sound with both transmitter mics and the traditional boom. Consequently, in post-production, it was possible to combine the footage of wide shots with the laboured breathing of the ageing farmer featured in the documentary, which was recorded with a transmitter.

Audiovisual branding productions, such as TV commercials, are generally relatively short, so the pre-production stage will also be relatively short. Naturally, there are big advertising campaigns by global brands that generate TV, cinema or online commercials of a limited length (25 – 90 seconds), but those demand intensive pre-production, possibly due to an extreme number of locations spread across the world, complex film sets or a large number of (extremely short) scenes. The use of music and, consequently, the involvement of sound and music at the pre-production stage in branding can vary from zero to maximum. Zero of, for example, only a voice-over praising the product is used for the sound track and the voice artist has been selected and recorded during post-production. Maximum if the advertising campaign is based on a specific composition written during pre-production to serve as an inspiration source and guide track during shooting. One well-known example from Dutch advertising history is the song *15 Miljoen Mensen* [15 Million People] by the composers Fluitsma & Van Tijn, with lyrics by the publicist Frank Pels, for an advertising spot for the Dutch Postbank. All kinds of visual

material was shot and combined with existing image material, after which the commercial and the associated song became a big hit.

Going back to the example of the feature film, towards the end of the pre-production stage, there will be a number of final deliverables, such as the script, the recording schedule and the call sheets.[114] After that, the production stage can begin.

production stage

During the production stage, during shooting, the actual filming is done at the location and/or in a studio. Where sound is concerned, the focus is on producing the best possible recording of the dialogue. For the sound designer and composer, this stage can provide more insight into the style of the film, allowing them to visit the set and get an idea of the set dressing, acting style and camerawork. Agreements may be made by the sound designer and the sound department with regard to specific location sounds. Once those recordings have been made, the sound designer can start work if necessary. Another option is for the sound designer to make their own sound recordings at specific locations. As I already mentioned, the composer may be involved at this stage if their music has to play a role during shooting.

post-production stage

As we already saw in the introduction to this chapter, the post-production stage frequently begins after the first day of the production stage. That day's recordings (image and sound) are uploaded to a secure server, after which the editor downloads the files and starts editing on the basis of the screenplay and any storyboard. At the same time, the editor can also 'check' the footage. Is the quality of both image and sound okay and have any errors been made? This way of working means an initial version of the editing will be ready a couple of days after completion of the production stage.

114 The *script* lists all the details of each shot on pre-printed script pages. A *call sheet* contains all the practical details for a day's shooting: shooting times, contact details for the crew, location addresses, what is to be filmed and with whom and anything else that might be necessary.

Music and sound can, in many ways, have a huge impact on the meaning and perception of a scene, as we saw in chapter 1. Not all editors are aware of this (particularly young, inexperienced editors), which can result in a montage based solely on image content, without allowing for the possibilities of the sound track. This can result in a montage that consistently cuts too rapidly away from shots as no consideration has been given to the focus and meaning sound and music can create in a scene.[115] Most editing software also has numerous audio facilities, however, and those editors who are aware of the influence of the sound track will often, themselves, start working with sound and music to support their editing. All kinds of sound effects and ambiences are then loaded from pre-existing libraries and existing music is used as a temp track.

composer and editor

Temp track is an abbreviation of temporary track, which is initially used to support the visual editing. At the same time, that 'temporary music' is often used to show the rough cuts of the film to the producer, the client and any test audience. By experimenting with various music cues as a temp track, an editor and director can also develop a concept for the final film score and, using the temp track, this concept can be demonstrated to the composer. The advantage of working with existing music as a temp track is that there is a huge amount and, therefore, an enormous choice. What's more, as that music is already completed, there is no possibility of any unpleasant 'surprises': what you hear is what you get. Many directors feel music is still the most elusive part of film and working with temp tracks soon gives them the feeling of being in control.

There is also a clear flip side to the temp track: it often doesn't exactly 'fit' the image, so the combination doesn't work 100%. In that case, it can be counterproductive as it means a strange fade-out is needed, which is distracting. If the temp track does work well, then there is the risk of getting used to it and the composer will finally have no choice but

115 It is an established fact that inexperienced editors frequently cut too quickly from one shot to another. The moment music and/or sound is added (in addition to the dialogue), however, they notice that the scene in question can actually last longer, as this has given it a far greater significance or a totally different meaning.

to compose a sound-like.[116] Another risk of the temp track is that it may raise unrealistic expectations. Full orchestral scores by composers such as John Williams and Howard Shore are used as temp tracks when editing low-budget films for which there is only, ultimately, a few hundred euros available for the composer. Even if the composer in question has extensive orchestral sample libraries at their disposal, it is unrealistic to request an orchestral score on such a budget. Composing such a score is already highly labour-intensive and using sample libraries to produce it takes a long time, as editing samples is still time consuming.

One possible solution for the above problems is to involve the composer in selecting music cues as a possible temp track. In principle, a composer has better musical insight and a broader knowledge of repertoire than the average editor. They can also draw on the repertoire they have built up in the past. Regardless of which working method is chosen, it is essential to thoroughly analyse just why the temp track 'works', to prevent the composer having to produce a sound-alike. What effect does this temp track actually have on this scene? Which aspect or aspects of the music combined with the image cause this effect? The dipole model in chapter 1 may be useful for this type of analysis. There are also other important aspects in which the sound track functions in relation to the visual track. The outcome of such analysis may be that the music has a recognisable, predictable structure but, at the same time, it clearly undergoes a development as the instrumentation becomes increasingly extensive and full, giving the audience the impression that the story is reaching a climax. Such analysis affords the composer the necessary compositional freedom to stay away from the sound-alike. In the view of the American film composer Mark Isham, the ability to make this type of analysis is one of the necessary skills of a film composer, but he acknowledges that it also makes demands of the director:

I think it is a skill to know what music does and be able to duplicate it in a different way. Of course, that is one of the big things a film composer has to do that most other musicians never have to think about. There is somewhat of an objective result from a piece of music used in a certain way, and that same objective result needs to occur with a different piece of music. To a certain degree, it's the responsibility of a director, too, to be willing to look

116 This is also referred to as *temp love*.

at something newly and know whether the overall same objective result is being achieved, even with a different piece of music.[117]

It's even better if the composer can present their own (initial) musical ideas and sketches from the beginning of the production stage and therefore, actually, create their own temp track. Evidently, these can also be sketches they have composed at the screenplay stage, on the condition that they have been worked out to a certain degree, from a production point of view. A solo-piano version of a composition that will eventually be an orchestral piece doesn't work, as it will demand too much of the editor and director's imagination. It's also useful to supply various separate layers of a music sketch as, while editing a scene, an editor will treat the temp track or sketches as 'material', cutting, reversing, repeating, speeding up, slowing down and combining them, for instance, in which case[118] it's handy to be able to use the various layers individually. The editor Wouter Jansen has this to say about this method:

As soon as I know who the composer is, I try and contact them as quickly as possible to discuss the post-production process […] I want to have their music sketches as soon as possible so I can use them for my editing and not have to use a temp track […] I let the composer know well in advance that I'm going to 'abuse' their sketches by cutting them into pieces and turning them round, for instance. As soon as I use the modified sketches in a scene, I send the result to the composer so they can continue working on them. That way, you both make something highly specific that hangs together […] I wouldn't want to work any other way now.[119]

The editor 'abusing' the music cues in various ways can, in turn, inspire the composer to make their own modifications or even produce new compositions. The composer Han Otten says about the interaction between editor and composer:

An editor can certainly come up with extremely interesting, surprising ideas and approaches while experimenting with your music. They have to be trained to do it correctly and musically, though.[120]

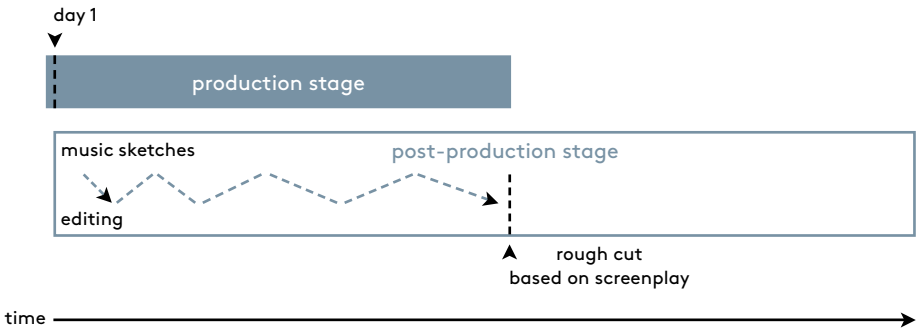
117 DesJardins 2006: 138

118 Editing software also offers a lot of audio options, so this kind of editing is fairly simple.

119 Jansen 2011

120 Otten 2011

This is not a one-way street: the composer can also ask the editor to modify the editing if, for example, it would make it that bit easier to fit in a specific music cue. Or if they notice that the music changes the meaning of the scene, which then requires a different visual sequence. Consistent use of this working method leads to continual interaction between editor and composer who, through experimenting and ping-ponging back and forth, end up with scenes and, ultimately, a rough cut, including an initial version of the music. During this process, that desired initial version will generally assume an increasingly concrete form and the degree of interaction between editor and composer can ease off. The composer will then be busy refining their sketches, while the editor works on the finer cutting of the rough cut. Represented visually, it looks like this:



Naturally, a composer can reject this kind of interactive collaboration, preferring to compose on the basis of that first version, for example. The advantage is that the composer has little or no involvement in the prior process and can watch the film from a fresh perspective as a relative outsider, bringing new energy into the process. Such an approach need not necessarily mean the composer has not been involved in developing the original idea for the screenplay, though. The choice has simply been made not to interact with the film during the production stage or the first part of the post-production stage but to respond to what has been created during those stages. The BBC presenter Neil Brand says the film composer Hans Zimmer prefers to work like this:

He said when you first meet the director, you discuss the film – you're both incredibly fired up about the film, because if you weren't fired up by it you wouldn't take the job. The director then goes off to make the film and when he comes back he's a beaten man. He's been through hell. And he (Zimmer) said, 'My job is to remind him just how we felt about the project at the beginning.' Hans is very much one of your six-week men,[121] but that struck me as an interesting idea, that the composer coming late to a project can revitalise it and can bring in a whole new energy that wasn't there before. And after a year or two year's work that may be no bad thing.[122]

Of course, there are all kinds of possible mixed forms of using the temp track and the composer's music sketches, as the film director Martin Koolhoven suggests:

We only the temp track solely for the editing. We sent the composer the rough cuts of specific scenes and sequences without the temp track. Based on that information, he composed musical material in the form of themes and suites.[123]

The exchange of 'material' between editor and composer from the beginning of the post-production stage undeniably gives the most time and room for researching and developing possible interesting combinations of image and music. That way, you can get the most out of the possibilities of both disciplines.

sound designer and editor

Apart from the temp track and/or music sketches, an editor will also use sound effects and ambiences for editing. All being well, the production sound he has been supplied with only contains dialogue. In this situation, too, the editor will have the tendency to cut quickly to the next shot as little or no meaning is being generated by the sound track. A lot of editors therefore consult sound effect libraries and, themselves, sample pieces from the sound tracks of other films to fill out their edited scenes from an auditory perspective. The sound designer Erik Griekspoor says this about the phenomenon:

121 This comment refers to the more old-fashioned situation where a film composer was generally given roughly six weeks to compose and produce a score.

122 Deutsch, Sider, Power 2014: 9

123 Koolhoven 2011

Editors are increasingly using sound effects and ambiences themselves behind their editing, so you could talk about temp sound design. They then spend months doing the editing and get really attached to those sounds. As soon as we start removing their sounds, they think "Whoa!! Where's my film gone?"[124]

Just as the composer has the temp track, the editor has their *temp sound design*, resulting in temp love, as we saw in Griekspoor's quote. The sound designer, too, may supply sketches from the beginning of the post-production stage onwards, in the form of (temporary) sound effects and ambiences. The same kind of interactive collaboration can also arise between editor and sound designer.

One good example of interaction between the sound designer and the visual track, in this case a visual sequence, can be found in the film *Contact*. It contains a famous scene, the wormhole sequences, in which the actress Jodie Foster, in the role of an astronomer, takes a trip through a number of wormholes to another part of the universe. Sound designer Randy Thom on the interaction between him and the visual department for this scene:

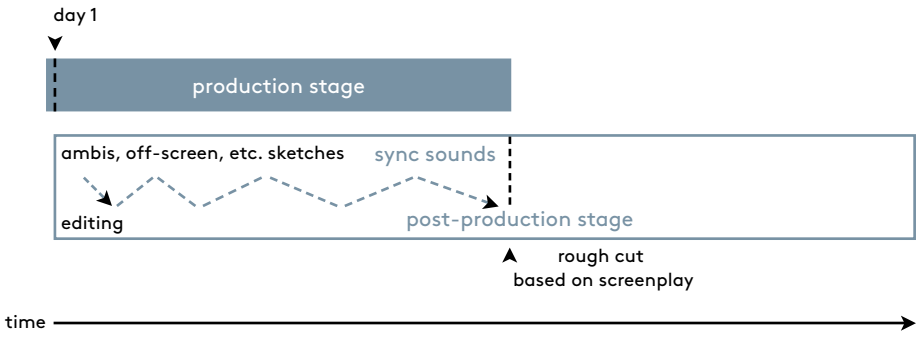
This film is an example of the craft of sound influencing other crafts from an early stage. I had a chance to see some early experiments for the visual effects for that sequence. When I began to look at what the visual effects artists were doing with this wormhole sequence, I became a bit scared by it because there were hundreds of things flashing by at the same time, and none of these objects were brighter than any of the others. I knew it was going to be a problem for me because in order to get some sense of sonic movement I needed to be able to create a kind of artificial Doppler shift, where the pitch of an object changes as it flies by, like a car horn or a train horn passing you. You can't do a perceptible Doppler shift on twenty simultaneous sounds. So I meekly suggested to the director that maybe some of these objects flying by should be much brighter than others. Then, sonically, I can concentrate on and do Doppler shifts for those which would really enhance the feeling of movement. And, lucky for me, I think Bob Zemeckis was thinking exactly the same thing before I even said anything.
I bring it up because it's an example of a suggestion coming from sound that affects the visual aspect of the movie. I think that should happen more often because the central tragedy of movie sound is that sound is affected

124 Griekspoor 2019

by all the other crafts, but has very few opportunities to affect them. Better to collaborate instead of being the caboose on the train, which we too often still are.[125]

There is, however, a difference in the collaboration between editor and sound designer and that between editor and composer in the sense that sound effects generally have to run simultaneously with the image, while that is less true for music, certainly at the start of editing. This is where a potential problem arises: creating synchronised footsteps, for example, is time consuming, as a Foley artist has to be hired. A similar situation arises when the set dialogue has to be replaced with the aid of ADR. The actors involved have to be hired, as does a sound recording studio plus engineer. Both sound design elements (we will call them 'sync sounds' for the moment) are therefore dealt with at a later stage because, as long as the editing is still in process, certain scenes may still have to be edited or even scrapped.

When it comes to ambiences, off-screen sounds or sound effects that don't really have to be 'hard synced', it's quite possible to use sketches during the initial stage of editing. There may then be an interactive collaboration between editor and sound designer comparable to that between the editor and the composer. When it comes to 'hard sync' sounds, it's always a question of weighing things up: is it worth using Foley and ADR at an early stage to get an idea of whether the scene in question will work? Taking all this into consideration, the collaboration between editor and sound designer can lead to a rough cut looking something like this:



125 Thom 2011: 111

The sound designer Klas Dykhoff on such a collaboration:

When I'm happy with a sketch I send it back to the editor. If they don't like it, I get to know that right away, so I can try something else. On the other hand, if they like it, it stays in the scene in the editor's computer, and editing continues with my sound in the scene. This will help both the picture editor to make crucial decisions concerning how long to keep a shot before cutting away, or if a line of dialogue is needed or not.[126]

The sound designer Michel Schöpping also likes to work parallel with the visual editing and supplies the editor with material he has produced specifically for that scene or sequence. He delivers the material without any instructions, though, giving the editor free rein, which can result in unexpected ideas and combinations.

sound designer and composer

In the initial period of the post-production stage, the composer and sound designer have to achieve a form of collaboration so that, at the end of the post-production stage, you don't suddenly discover that the music and sound design are wholly incompatible. Neil Brand talks about the opinions of Randy Thom in that respect:

Randy said that what tends to happen is that the director goes to the composer and says, you have one hundred percent of the storytelling in the sound at this point, off you go. And the composer goes, well thank you, that's wonderful. Then the director goes to the sound designer and says you have one hundred per cent of the storytelling in this film, off you go. And the sound designer says, thank you that's wonderful. And the two of them come back bringing what they have to the mix and the result is horrific, because they haven't discussed anything. Now Michael Giacchino said he dealt completely with Randy Thom continuously through the work he was doing with Pixar, Carter Burwell said the same working with Skip Lievsay – he and Skip were totally working together. He would actually say: "Are you going to take it or shall I?" Which is how it should be.[127]

126 Dykhoff 2016: 58

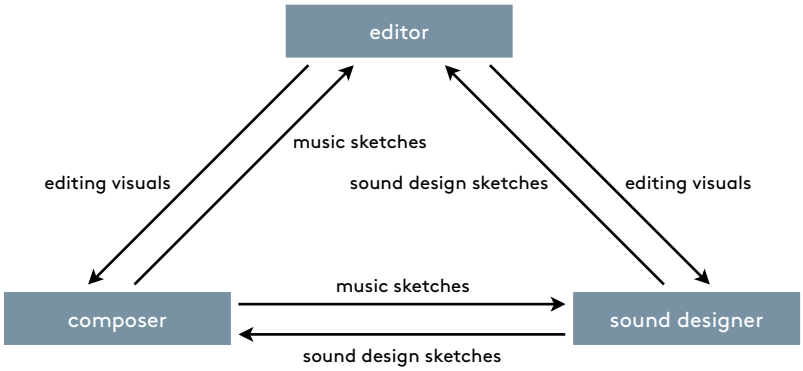
127 Deutsch, Sider, Power 2014: 8 – 9

Analogous with the above visual representations, the collaboration between sound designer and composer can consist of exchanging sketches, creating a collaboration triangle between the editor, sound designer and composer. The four issues mentioned earlier regarding the forming of ideas and concepts for the sound track will frequently arise. The director doesn't yet play any role at this stage, as they are still on the set. From that point of view, it's important to realise that the editor sets the tone of the visual track at this stage, also deciding which takes of each shot are to be used. Naturally, the director can always look at other takes and choose from them at a later date. Clearly, though, with the rough cut, the editor is mapping out the direction of the film, greatly influencing the further progression of the post-production stage. Composer Han Otten, editor Wouter Jansen and director Martin Koolhoven describe the role and position of the editor as follows:

The editor is the linchpin.[128]

The essence of the film is born in the edit room. This is where the tempo and content of the story are created.[129]

I've seen a director change the way they film as a result of the rough cuts they got from the editor during shooting. The editor was also involved in all aspects after the shoot: the music, the grading, etc.[130]



128 Otten 2011

129 Jansen 2011

130 Koolhoven 2011

sound designer, composer, editor and director

After the production stage, the director is also part of post-production. The director's main role is as a frame of reference for the film as a whole as they are one of the few people involved from start to finish. The director is also distinct from the other disciplines at the post-production stage because they don't, themselves, create any concrete material. This allows them to view the designing and creating of the auditory and visual material from a slight distance. Walter Murch describes the relationship with the director Francis Ford Coppola in that respect:

In the broad sweep of the creative process, I would say that Francis is a reactive participant, and that he is fairly impatient with the minutiae – the back and forth aspects of both editing and sound. Like directors such as John Huston, he prefers to sit in the theatre and see the totality of it, then react to the totality rather than to get involved in the specific issues of 'Should that be 2 dB louder in the left back?' He never, never goes in that direction.[131]

That position allows the director to make the right decisions. As director, they are responsible for the final result and they will be less concerned with all the details. Setting up and organising the process, including the collaboration between the disciplines involved in post-production, is also often a job for those disciplines themselves and, possibly, a post-production supervisor.[132]

In concrete terms, therefore, the collaboration between the three disciplines is complemented by a fourth discipline, the director, who makes the final decisions. Walter Murch defines it as follows:

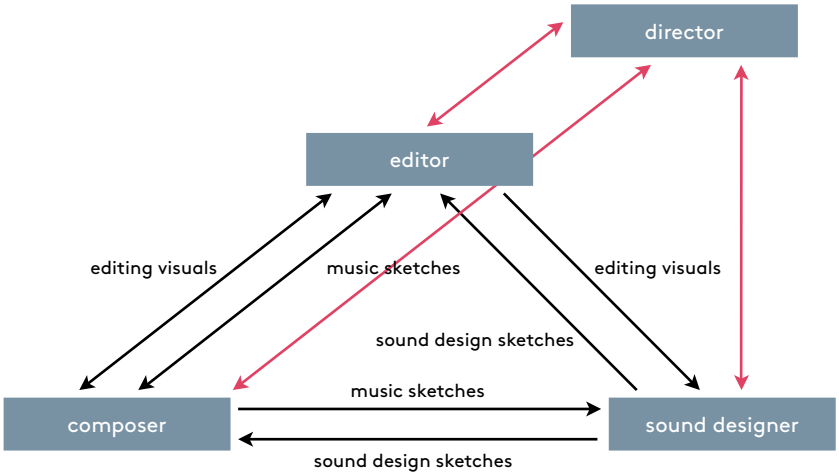
A talented director lays out opportunities that can be seized by other people – by other heads of departments, and by the actors, who are in effect heads of their own departments. This is the real function of a director, I believe. And then to protect that communal vision by accepting or rejecting certain contributions. The director is ultimately the immune system of the film.[133]

131 Horner, Murch: 11

132 A *post-production supervisor* is often employed for audiovisual productions that are particularly complicated at the post-production stage because of complex CGI (Computer Generated Images), for example. The job is chiefly organisational and supportive, rather than creative.

133 Ondaatje 2002: 28

See the illustration below in which the red arrows represent the communication between the director and the other disciplines.



In practice, the director will work primarily with the editor to ultimately produce the final cut. Understandably, as, in principle, editing the visual track is simple and the director can actively participate ("Could you swap those two shots around? Maybe that might work better" and so forth). In that collaboration, the editor can also fulfil a specific function for the director. Josef Valusiak, editor, on the collaboration between director and editor and that specific position:

Editing is the basic principle of filmmaking and we could talk for a long time about the creative force function of the shot-by-shot shooting. Sometimes the director edits his film by himself and I know of some good ones made in this way. But the educated editor brings new, fresh eyes to the film process, he is not influenced by the stress of the shooting or by the plans and purposes as the director is. Basically the editor can see what really is in the material, not what was supposed to be there, so that he can find new variants and possibilities that the director who is fixed in his imaginings cannot see. Also the editor comes with his specific experiences, skills, talent, sensibility for image and sound expression, for the rhythm and tempo, combination and association thinking, etc. And when the director and editor are close in their intellectual, creative and also personal side, and they are also close to the subject matter of the film then their participation in the result is not just added but multiplied.[134]

134 Crittenden 2006: 237

In the latter half of post-production (from the moment the director arrives, in other words), there will be more communication and interaction between the composer and sound designer and the director and editor, with the editor, as we said, making the final decisions. Again, the four issues/perspectives will guide this process. One example of such a design process and the associated interaction can be found in the creation of the film *Barton Fink*, by the Coen Brothers, as the composer Carter Burwell describes it:

> And the important thing to me about Barton Fink is the way that the score and the sound design work together. Joel and Ethan thought that maybe there was no place for music in the movie, that maybe it would be entirely sound effects, but when they heard the theme that I had for Barton, they liked it. And Skip Lievsay, the sound designer – or 'supervising sound effects editor' – and I decided that we would spot the film together. And it really is, still, for me, the best example of how that can work. The sound effects are incredibly important, and they're also non-naturalistic. [...]. And I chose instruments and tried to write a score that would work with most of the significant sound effects. [...] And we would go through this, scene by scene. Skip would say, 'Well, I've got a mosquito here', and I'd say, 'Well, OK, I'll give you the high frequencies, but I'd like to do something down below'. Or he'd say, 'Well, I'm kind of interested in having a banging sound here', I'd say, 'Well, great, I won't do any percussion, but I'll do some low bed of dissonant trombones'. And I'd say, 'Well, I've got a piano melody that happens here', and he'd say, 'OK, well, I'll take the low frequencies'.[135]

When we analyse the above quote based on the four issues/perspectives, we come to the following conclusions about the various collaborations:

- **At a conceptual level between composer and director: "Joel and Ethan thought that maybe there was no place for music in the movie, that maybe it would be entirely sound effects";**
- **At a musical level between composer and director, with implications for the conceptual approach. The initial idea was to not use any music but once they had heard the music sketches the concept was modified: "But when they heard the theme that I had for Barton, they liked it";**

135 Burwell 2003: 199 – 200

- At a sound technology level between composer and sound designer, with implications for the musical approach: "Or he'd say, 'Well, I'm kind of interested in having a banging sound here', I'd say, 'Well, great, I won't do any percussion, but I'll do some low bed of dissonant trombones";
- At a conceptual and dramatic level between composer and sound designer, with implications for the music and the sound technology approach: "The sound effects are incredibly important, and they're also non-naturalistic [...] And I chose instruments and tried to write a score that would work with most of the significant of the sound effects".

With regard to the interaction and collaboration between director and composer we have already discussed a number of methods (temp track, music sketches for the editing, combinations of these methods). Regardless of the method, the essential thing is that they have to decide jointly what the role of music could be in the film story; they have to have a discussion from the conceptual and dramatic perspective. All being well, this has already happened while the screenplay was being written, for example. Now, they have to have that conversation again, but this time on the basis of concrete material. the rough cut. The composer Elmer Bernstein says the following:

I spot a film strictly as a dramatist. I'm not thinking of music at all when I spot a film. I look at the scene and say, Should this scene have music? Why should it have music? If it does have music, what is the music supposed to be doing?[136]

This approach is clearly from the conceptual and dramatic perspective. The composer will have to turn the results of their interaction with the director into music. Composers have the tendency, though, to withdraw into their composition process and only re-emerge once the music is finished. An understandable inclination, as the deadlines are often tight and interaction with an editor takes time. Time the composer could otherwise be spending on composing music. On top of which, according to the researchers Phalip and Edmonds, composers are not generally trained to communicate with other disciplines regarding their work:

136 Davis 1999: 261

Film scoring requires a wide set of skills. It requires not only understanding music, the picture, and its correlations to music, but also being open-minded and developing social skills to handle creative communication with people from diverse backgrounds. To this day, there is no school or institution teaching these social skills, apart maybe from some obvious recommendations based on common sense.[137]

To arrive at the right decisions regarding the music in a film, it is essential for the composer to involve the director in their composition process. If the director is allowed to hear various musical options for a specific scene, they gain fundamental insight into the possible effect of music in film, as they can experience the various combinations of image and music for themselves. If the composer makes their own choice from the various musical options for that scene and then presents it to the director, that is far more likely to generate resistance, as the director has no idea how any other music would work in the scene in question. That doesn't mean that kind of consultation between the composer and the director is necessary for every single music cue, but it is a fruitful way of working for a number of key scenes in a film, for example. Fruitful because it provides the director with insight into the effect of music in film, as the director gets the impression that there is a choice and because the composer makes the director jointly responsible for the final musical choices.

The interaction between the director and the sound designer is, to some extent, comparable with that between the director and the composer. In this case, too, there needs to be discussion at a conceptual and dramatic level. For a number of key scenes, the sound designer can use the same approach as the composer, too. There are a number of differences, though. A sound designer will still regularly be approached by a director from a facilitatory and/or technological perspective. Gary Rydstrom, sound designer for such films as *Saving Private Ryan* and *Titanic*, says the following:

The main attitude people have to change is that sound is a technical part. People think of it as negative cutting, it's the technical step at the end where you put the door slams, the cat meow, and the traffic in – then you have a finished film. [...] It matters what it sounds like. It matters if it's emotionally

137 Phalip and Edmonds 2007

correct for the moment. You should use whatever's right. Your first responsibility is to the emotional and dramatic elements of the film. Secondly, you make sure there are no glitches and technically it's as pristine as you can make it. People think you're a sound designer if you make weird and wonderful sounds. Ben Burtt is a sound designer because he made laser swords and Tie Fighters, but that's not really it – that's sound creation. He was a sound designer because he was involved at the very beginning in discussions about the philosophy of the sound track. [...] Everyone thinks that a sound designer is only needed for science fiction or bizarre films, when it should be seen as more akin to a production designer. A sound designer follows through all the different sound crafts and gives it a common philosophy and a common goal.[138]

Such a facilitatory approach is understandable to some degree, as a director can simply take the view that 'a door closing has to be given the sound of a closing door'. Here, too, the sound designer can clarify the difference in meaning between closing doors by demonstrating various sounds within the same scene. When the director themself hears this, they will realise that sound can have a substantial effect on the meaning of a scene and, in that sense, the perspective is not purely facilitatory or technological. It's important for the sound designer to position themself correctly, though, and not act solely as a facilitator. Ultimately, the discussion between the director and the sound engineer concerns issues such as: "What story do we want to tell and how can we use sound to tell that story?". Gary Rydstrom in the same interview:

If the sound person talks to a director about the sounds that are going to be in a scene, you often end up pointing out obvious things like a door close and a car horn, but it's more important to talk about what the director is trying to say and what they're trying to withhold from the audience. In Single White Female there are moments when it suddenly dawns on the audience that the Jennifer Jason Leigh character is nuts. So then you can try some very subtle things with the sound. [...] At all times the sound is just supporting what the rest of the film is trying to do. We're not showing off or adding things for the sake of a neat sound – it should all be enslaved to the dramatic moment.[139]

138 LoBrutto 1994: 245 – 246

139 LoBrutto 1994: 230

An illustrative example of the way sound generates meaning (in this case dialogue) and the resulting consequences for the music can be found in the film *The Mosquito Coast*. The quality of the original set recordings of Harrison Ford's voice during the death scene wasn't good enough: there was too much distracting noise. Harrison Ford then did an ADR session, which didn't generate the desired intensity and emotion when compared with the set recordings:

It really never worked for Peter [Peter Weir, the director of the film]. So he felt in order to make the scene stronger he had to have music, and that in order to have music in reel eleven to lead up to it he had to have music in reel ten during the storm sequence.[140]

Then, as a last attempt, the sound designer Mark Berger tried to make a final version by combining words and part sentences from various takes of the set footage:

He [Peter Weir] was completely blown away: the entire end of the movie changed, because we had managed to preserve so much of the original intensity of Harrison's performance. Having achieved this clean, intense, non-distracting version of the end death scene meant to Peter that now the movie finally came together, that is was working, that you could finally get into Harrison and concentrate on the subtleties of his performance. He had thought that we would have to do it in ADR and if you do it in ADR you lose ninety percent of what the original performance was about. So having achieved this then we said, "Well, we can lose the music in reel eleven now, when they're drifting down the stream, because it's so quiet and his performance is so powerful that we don't need it. And taking out the music in reel eleven we don't have to have the music in the storm because it's not adding anything." So this one change at the end had its repercussions and echoed back all the way through the film.[141]

temp mix

Another difference between the interaction and collaboration between the director and the sound engineer and that between the director and the composer is due to the difference in the products the sound designer and composer produce. While the composer actually only delivers one

140 Pasquariello 1996: 123

141 Pasquariello 1996: 124 – 125

final product, namely the film music, the sound designer delivers a large variety of end products, such as the various dialogues, ambiences and so forth, which only gain their ultimate form, content and mutual relationships during the final mix. This makes it harder for the sound designer to let the director hear various different sound design alternatives for a scene. Naturally, it can be done when it comes to choosing between possible options for a specific, distinctive sound, but in the majority of cases the discussion will be about the total sonic image for a scene. You therefore actually need to listen to various temp mixes that incorporate all the possible sound elements (including music).[142] Often, the same applies here as to the composer: making and listening to those temp mixes takes time that the sound designer could otherwise be using to get on with their work. On the other hand, the insight gained at a conceptual and dramatic level by making and listening to temp mixes makes it worthwhile. Not only for the sound designer and the director, but for all the disciplines involved. Experiencing a temp mix can provide the composer with insight on the level at which their music will probably be used in the mix and what other sounds will also be significant in the scene in question. All too often, a composer only has the set recordings (the dialogue) as sound to work with in the design process and doesn't get to hear all the ambiences, Foley and sound effects until the final mix. Consequently, the music regularly has to be removed, with a sigh from the composer, as Han Otten describes it:

> If I had known earlier that these sound effects and ambiences were going to be in this scene and that they were going to be mixed like that, I would have composed different music.[143]

One example is a scene in which a character is pacing up and down a room. The set recording will probably only contain the dialogue. With the use of sound, however, that scene can generate a great deal of meaning with regard to that character. Foley can be used to create specific footsteps, for example, giving the impression that the character in question is at the end of their life. If those footsteps are clearly audible in the mix, this will also create a certain rhythm. If the composer has

142 A *temp mix* is an interim mix of the sound track, which can provide the insight needed into the desired effect of the sound track, possible problems, etc. At a later stage during post-production, a temp mix can also be used for test screenings: the film is shown to a test audience, to see how they experience it.

143 Otten 2011

composed music with a clear rhythmic content, based on the dialogue alone, then the two can clash badly.

An indication of the level at which the music will probably be used in the final mix is also important information for the composer. If the sound level is low, then the low frequencies in their music will be lost in comparison with the mid and higher range. If they are aware of this, then the composer can take it into account in their composition and music mixing.

By attending a temp mix, the editor can see for themself that they may have to adjust the editing due to the meaning generated by the (temporary) sound track. In principle, that will only be done on the basis of temp mixes done before the picture lock. There is less likely to be any editing of the visual track after the picture lock, partly because it will often have far-reaching implications for the sound track. Editor Wouter Jansen has this to say:

When all the elements (picture, sound, music) come together, you see that, one way or another, almost everything has to be re-edited. It's something you would also like to do with the visual editing, too, but in most cases there's no time for that. What's more, re-editing the visual track can have major consequences for the audio components, which would take even more time.[144]

A temp mix gives the editor insight into the degree to which the scene 'works' and corresponds with the story the film is aiming to tell. Working with temp mixes for a key scene, for example, has to be extended as quickly as possible to a temp mix for the entire film and in the correct spatial setting, which will often be a surround setting (5.1 minimum). The sound designer Michel Schöpping:

I work as soon as possible in surround, because space is an important dimension in film.[145]

Often, the advantage of working like this is that it gives all the disciplines involved more insight into the direction and concept of the film and how the story is going to be told. If the direction and concept are

144 Jansen 2011

145 Schöpping 2011

unclear and only emerge during the final mix, for example, then the sound designer will have the tendency to want to cover everything with regard to sound. It wouldn't be the first time that a director asked during the final mix: 'Where's the sound of the dog?' while the sound designer had the impression that the dog wasn't at all important. Richard Anderson, supervising sound editor for such films as *Being John Malkovich* and *Dante's Peak*, on the absence of a clear concept, resulting in everything in shot having 'sound':

Q: When you are preparing the sound track for the final mix, do you cover everything in the film even if there is going to be music?

A: Yes, pretty much. There was a scone in The Color Purple where Mr. (Danny Glover's character name) is stalking the young sister, who later goes off to Africa. He's riding a horse while she's walking on a parallel road through the woods, and they're looking at each other through the trees. I figured, "Nobody's talking, this is a musical scene if there ever was one." Well, for some reason Spielberg decided that he didn't want to use the music. We had pre-dubbed the sequence with fewer effects in it, relying on a layer of music. All of a sudden we were "naked", and we had to make it a lot more dense and threatening. So we went back and redid that scene. I had to add more things like a chattering squirrel, birds that sounded ominous and scary, and sounds that normally the music would have completely covered up. Also we redubbed Mr.'s horse to make the cuts more extreme, so that when you're close to him versus close to the little girl, the change in the sound difference was much greater and more dynamic. If there was music over it, we could have had less fluctuation because the music would be the main thing and the effects would be kind of an undercurrent. So much as possible we try to cover everything because you never know.[146]

Working with temp mixes where all disciplines are involved has the added advantage of all those disciplines being able to interact at the same time. All too often, though, because of time or budget pressure, there is no such interaction and any problems are pushed back to the final mix, when all the glitches become visible and audible. Walter Murch talks about how necessary this is, though:

146 LoBrutto 1994: 171

That we now do much more preliminary mixing, what's called temp mixing. This is so we can preview the film earlier than we ever would have thought of doing before. [...] The result is that there are generally fewer surprises in the final mix.[147]

The Dutch sound designer Herman Pieëte confirms this with his working method:

Before anything gets mixed, I do viewings so we can say, "Okay, all the necessary elements are there... we can tell the story with these elements".[148]

integration of dialogue, music and other sound

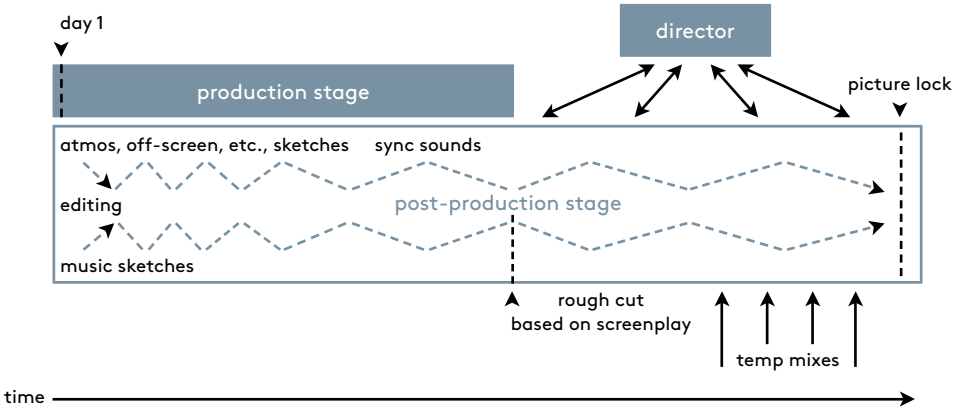
Good collaboration between the sound designer and the composer is also essential, as the boundaries between music and sound design in film are becoming increasingly blurred. The researcher Kassabian talks of this increasing integration of dialogue, music and other sound in the sound track:

The evaporating segregation of sound, noise and music has had a pronounced effect on film sound editing and scoring practices. For example, Daniel Falck (n.d.) has argued that speech in The Thin Red Line (Terrence Malick, 1998; music by Hans Zimmer) is often deprivileged and/or mumbled; it can be thought of, after Michel Chion (1994), as 'emanation speech...a line of contour of a speaking body...in the same way as a silhouette is a line of contour of a visual body'. Falck makes the case that music, speech and sound in The Thin Red Line are leveled out and used together to create a world not dependent a priori on the images. His observation is one among many examples of the dissolving boundaries among kinds of sounds in which I am interested.[149]

As you can see, once the production stage is complete, the director will participate in the post-production stage. All being well, material will continue to be ping-ponged back and forth between the editor, the composer and the sound designer, with the director as the central figure making the final decisions. In principle, this process continues up until the picture lock. After the picture lock, there is still time to finalise the music and sound design and produce a final mix. The process up until the final mix (which we discuss in the paragraphs below) looks like this:

147 Ondaatje 2002: 104 – 105

148 Pieëte 2011



After the picture lock, the 'ingredients' for the sound track can be finalised and the final mix can be done. That primarily entails doing premixes mixing numerous tracks (sometimes hundreds) down to a number that will be easier to work with in the final mix. In principle, the material for these premixes and, therefore, for the final mix consists of:

- *dialogue tracks:* each character has, in principle, their own dialogue track, which, in turn, can be made up of multiple tracks (set recording, ADR). It can also be handy to put parts of the dialogue that take place at a specific location with specific acoustics, onto a separate track, with equalisation specific for that location.
- *Foley tracks*: these are generally ranked by 'sound type', such as footsteps and doors, and, in the case of footsteps, for example, by character. The Foley sounds themselves are also often a combination (a premix, in other words) of various sounds. Those premixes can still be modified in the final mix, if necessary.
- *ambience tracks*: these are more continuous sound layers that are often built up from a number of tracks (including set noise), providing a specific context for each scene.
- *sound effect tracks*: these are more specific sound effects that, all together, can constitute a large number of tracks They might be explosions, gunshots, car chases or machine noises, for example. Often, these sound are made up of various sound effects, so each sound already constitutes a premix that, where necessary, can be modified in the final mix.

- *music tracks*: this is the film score (and any songs) that the composer(s) deliver(s) in layers, or stems, for the final mix, in which you want to maintain as much control as possible up to the last moment and be able to intervene in the mutual balances within a music cue, for example, and the placing of the various stems.

The above categorisation is, in principle, also that for the final mix and is, therefore, actually based on the classification of 'dialogue, music and other sound'. Other classifications are also possible, depending on the complexity, the film genre and the recording mixer's preferences.[150]

final mix

The final mix is the very last step in the film production process. This is the last chance to try things out but, primarily, it's the last chance to solve any problems. Walter Murch:

> The mix is still really the final stage at which any last opportunity can be seized or any last insoluble problem solved. If you're lucky, and if you have the right approach, a certain blend of music and sound can sometimes solve problems that could not be solved in any other way. That's part of the filmmaking process. Every stage leaves a residue of unsolved problems for the next stage partly because the particular dilemma you're facing cannot be solved in terms of the medium that you're working in right then. […] But because the sound mix is the very final stage – and because it's very flexible – there's a tremendous amount of variety you can call upon during the mix, by both eliminating things you thought were absolutely essential or, at the last minute, bringing some new element in.[151]

Ideally, all four disciplines from the post-production stage (director, editor, composer and sound designer) will be there. Often, though, that is not possible, as they are already working on another production and/or because the producer hasn't budgeted for their presence. As we already saw, there will frequently also be a fifth discipline present, the

149 Kassabian 2003: 92 – 93

150 Action films, such as the *James Bond* and *Mission Impossible* series, will have a far more complex breakdown than a thriller such as *Den Skyldige*, in which we spend roughly an hour and a half in a room with a man with a telephone.

151 Ondaatje 2002: 104

re-recording mixer, who will actually do the final mix.[152] The advantage of a new discipline is that they have 'fresh eyes and ears'. Someone who hasn't been through the entire design and production process can watch and listen to the film with a certain detachment and give useful feedback on the its consistency, or on scenes that are perhaps not entirely clear or comprehensible.[153] Sound designers Marc Lizier and Erik Griekspoor on working with a re-recording mixer:

It's great to share the responsibilities so, as a sound designer, I like working with a re-recording mixer. When that's not possible, it's really difficult to distance yourself from your own work.[154]

If you've done the sound design and then have to mix, I generally find that hard, especially when it's really soon afterwards. I like to hand it over to someone else at some point. Then it feels like 'being driven home in a taxi'.[155]

In smaller productions, the sound designer will often also do the final mix. On one hand, the advantage is that the sound designer can carry through the developed concept to the end, but, on the other hand, the sound designer may attach too much importance to their own work in relation to the composer's film score, for example. All being well, however, there will be that concept on the basis of which decisions can be made and there will already have been a number of temp mixes that will have increasingly clarified the concept.

In the case of a cinema film, the final mix will be done in a mix stage, a relatively big hall with the right acoustics, speaker system and projection, so the mixing can be done at the sound level of high-end cinemas.[156] The transition from the edit room to the mix stage often poses problems, as the director and editor suddenly hear all kinds of

152 In big (often American) productions, there may be as many as three re-recording mixers responsible for the familiar categories of dialogue, music and other sound.

153 The advantage of 'fresh eyes and ears' is evident when mixing dialogue, for instance. Whereas the other parties involved probably known the lines off by heart by this time, having already heard them a million, the re-recording mixer will be hearing the dialogues for the first time and is therefore capable of deciding whether they are comprehensible and what volume, equalisation and so forth is needed for the final mix.

154 Lizier 2011

155 Griekspoor 2019

156 Sometimes, the final mix is done with a DAW. A mix stage will then still be hired to check the final mix.

things in the sound track that they hadn't heard before, because an editing suite isn't generally adapted in terms of acoustics and sound equipment. At best, it will be a relatively small space with two good speakers, sufficient to create a reasonably accurate stereo image. Often, it's not possible to listen to a surround playback or at the sound level of a cinema, so there is even less chance of the space being acoustically adapted. Sound designer Michel Schöpping on the transition from the edit room to the mix stage:

At the editing stage, the sound quality is often relatively poor, due to poor acoustics, for instance, and other elements in the edit room. Consequently, when the film gets to the mixing stage with an initial version of the sound track produced by the editor and the director, you always hear the editor and the director saying there are things they've never heard before. They're so used to hearing that temporary sound track that it will often take them weeks to get used to the new 'content'.[157]

This often-problematic transition can be smoother if there have already been temp mixes at the post-production stage.[158]

The material for the final mix as described above is, in principle, treated as 'raw material', certainly if there have been no temp mixes. Sound designer Randy Thom:

Everything is raw material, and so the music that you do for this scene is very likely to be ripped out of that scene and used in another scene where you didn't intend it to be used at all. And the same thing certainly happens all the time with sound effects.[159]

If there have been the necessary temp mixes, then there will also have been the necessary coordination between the sound designer, composer, editor and director, so there will be fewer problems. It's therefore highly advisable to incorporate the time and space needed for this at the post-production stage. Composer Carter Burwell on the effect van premixes:

157 Schöpping 2011

158 A better-equipped edit room with better acoustics also makes the transition to the mix stage easier.

159 Thom 2003: 130

And when we got to the film mix, perhaps for the first time in my experience and perhaps the last, we all knew what everyone else was bringing to the film mix; there were no big surprises, and it was one of the most pleasant mixes I ever did. Everything's very clean, clear, it was a beautiful sound environment that was created, and it was because of planning. And there's no reason why composers and sound effects people can't do this all the time, it's just tradition and the fact that there appear to be different departments to a lot of producers.[160]

Nonetheless, despite a number of temp mixes, there can still be problems during the final mix because, for instance, those mixes were done at another location with different listening facilities. Intervention in the premixes of dialogue, effects and so forth is then still possible. As far as the music is concerned, the stems that have been delivered offer opportunities to make some adjustments. The American film composer Jeff Rona on stems:

As you are mixing your music, you don't really know how it will sound when played along with the final dialogue and effects on the dub stage. So music is mixed into several small groups, called stems [...]. The number of tracks to mix onto, and how to split out different parts is a decision that changes on each project. Some dubbing mixers want as many splits (another term for stems) as they can get. Some mixes I've done have taken up as many as 32 tracks. Some have been as little as 2, but most have been between 8 and 16. Any part that might need special handling or might be viewed as controversial is best kept separate from other stems.[161]

Working with stems does pose a couple of specific problems, though. The composer will compose and produce each cue as a musical entity, including the associated 'signal processing', such as limiting and compression, which are used to make the cue sound like an entity. The feeling of unity and the associated impact can soon disappear if the balance between the various stems is altered, if the stems are left out or modified or if stems from another cue are added. Composers try to avoid such changes during the final mix by using temp mixes so, hopefully, there are no more surprises (read changes) during the final mix. The composer will also supply a stereo reference track for the cue, which gives the re-recording mixer information on the sound image the composer was aiming for.

160 Burwell 2003: 200

161 Rona 2000: 130 – 132

For most films, the final mix will be built up with the dialogue as the central point. Tom Fleischman, responsible for the final mix for films such as *The Silence of the Lambs* and *Philadelphia*, underpins that choice as follows:

Everything is balanced against the dialogue. The dialogue is the key because that's where the information is – that's the story, so people have to hear that. […] If I have a dialogue that's "perfect", then I usually try to do the ambience part of the sound effects track along with the dialogue and balance any kind of room tone or bird or air or traffic beds against the dialogue. Then once I've got that, I can add the Foley, any specific sound effects, like cars or buses, and balance that against the dialogue. […] The music is the last thing that goes in.[162]

Depending on the type of film, the director's vision and the content of the film, sound effects and ambience will be brought to the fore or pushed into the background. Analogous with the dipole model in chapter 1, sound effects and ambiences that are almost inaudible can, for example, create a desired 'unstable situation', generating the necessary suspense. The film *No Country for Old Men* is considered to be a quiet but, consequently, enormously suspenseful thriller. Little dialogue, no 'real' music, but meticulously designed sound effects and ambiences that create an almost unbearable tension because the audience doesn't consciously experience them, but they nevertheless stir and direct the audience's fantasy and imagination. The (almost complete) absence of dialogue, the most extreme form of encoded sound, leaves room for the other elements of the sound track, as Walter Murch concluded after working on the film *The Conversation*:

The other thing, I think – and strangely enough I didn't realize this until after I'd finished the film – is that about half way through the story, people stop talking. There are some shouts and we hear the conversation played over and over again, but 'normal' dialogue becomes minimal after the warehouse party. And I think when that happens in a film, it's the equivalent of looking at the night sky when there is no moon. Suddenly you notice the stars! But when the dialogue is present it's like a bright moon that hogs all the attention. When the moon isn't there, the stars come into their own. So for a good 45 or 50 minutes people are left to their own moon-less devices

162 LoBrutto 1994: 179

regarding the sound. There is not a lot of significant dialogue for them to focus on, and so they start to really listen to the sounds, because they want to extract meaning from what they're looking at and listening to.[163]

Mixing music into the sound track frequently leads to sonic problems: a mix that doesn't sound clear, that sounds 'muddy' and ill defined. Often, there is too much sound energy in the low mid and/or really low range. Such problems have generally already been tackled by means of temp mixes. Nonetheless, they can still arise during the final mix, because it was simply not possible to hear them while listening at the editing stage.[164] Composer Johan Hoogewijs mentions yet another possible problem with the music during the final mix:

And then there's the problem of the level of the music in the mix [...] Often, the music is too loud, so they don't think it 'works'. When I let them hear the music at the level I'd originally had in mind, they suddenly understand and agree.[165]

Care is always taken in placing the various elements of the sound track in the space: at all times, you need to avoid the audience being distracted by something unnatural happening in the sound track. In many cases, therefore, the dialogue will be placed in the centre, regardless of the position of the actors on the screen. Increasingly, however, successful experiments are being conducted with alternative spatial placing of the dialogue. A film such as *The Hurt Locker* uses this method to strongly emphasise its point-of-view character. Sound designer and re-recording mixer Paul Ottoson on mixing the dialogue and the associated Foley in that film:

It was important to be able to differentiate the main character from the others. Even when the camera's moving, I was doing things mixers usually would not do. I would pan dialog and Foley with him, so I needed a lot of coverage because often they stick Foley in the center and it lives there because that's where the dialogue is sitting and usually people don't pan dialogue because it becomes a nightmare. But I said we needed to do that because We're playing it from the perspective of you being this person, so when the guy is talking from the left I want to hear it from the left, and then when the

163 Costantini 2010: 39

164 It's the lower frequency ranges that relatively soon become problematic during playback due to the acoustics of the room.

165 Hoogewijs 2011

camera moves over we bring it into the center, and whatever Foley we had needed to follow that. But then we also needed Foley for the guy on the right side, so mixing it was not easy because you had to really differentiate what sounds came from where.[166]

As we already saw in chapter 1, ambiences, music, echo and so forth are generally placed in the stereo and surround spectrum, as those sound categories are not hard-synced with the visual track. Sound effects are not generally placed to the extreme left or right; a door visibly closing on the left side of the screen is placed not on the extreme left but somewhere between left and centre, otherwise, the sound effect is far too quiet for those sitting on the right side of the first few rows. Analogously, specific events in the visual track, where a lot of movement is occurring, are panned in the space, over the audience from left to back right, for example.[167]

This creates an initial version of the final mix, analogous with the editor's first cut. Richard Portman, re-recording mixer, has this to say:

What is best for me is that we make a mix. We lay down a mix the way I think it ought to be one time, and then the director looks at that. This is the way I thought it was, these were my natural tastes and inclinations. Now from that point on, anything in his taste that's different from mine, he has to tell me what that is.

Q: What you're describing sounds similar to a film editor's first cut.

A: Yes. So I have my first cut. Now the director comes along and he thinks I played the music a little too low. Well fine, I'll raise it, but he's going to tell me when I've raised it enough. So I'll try it again a little higher. Then I'm working and I'll say, "Is that okay?" He'll say, "Ah, that's perfect," or "No, that's not, a little higher," because now I'm not working for me, I'm trying to hear what they hear. One of the things a re-recording mixer has to learn is how to hear what the director hears.[168]

166 Isaza 2010

167 Things such as helicopters, cars screeching past, trains and planes.

168 LoBrutto 1994: 49 – 50

Based on this first cut, the final mix can be continued with the editor making the final decisions, as we mentioned earlier, ideally with the other disciplines involved (editing, sound design, music) present, too, to provide their own input. Cecilia Hall, sound designer for such films as *The Hunt for Red October* and *Patriot Games*, recognises a clear role division in that respect during the final mix:

The person who has the final say in that decision is obviously the director or whoever the director has designated if they can't be there. One of the things I've learned over the years that's been a very valuable lesson to me – and luckily I learned it fairly early – is that you get to work on their movie. To me, it's a gift. You get to be part of that process. You get to have your input. You get to express yourself creatively, but at some point you have to back off and realize that it's their movie. Sometimes that can be tough because you have such a big investment in the film, but it is their movie. So part of the movie gets to be yours, part of it gets to be the mixer's, part of it gets to be the picture editor's, but all of it gets to be the director's. So ultimately they have the final say. I think it's my responsibility to express my beliefs, my feelings, and my opinions, sometimes more strongly than at other times, but ultimately the director has the final say.[169]

Cecilia Hall describes the roles and responsibilities of the various disciplines during the final mix. Everyone is expected to express their beliefs, feelings and opinions. That way, the editor gets all kinds of input on which to base their decisions. We're not talking about such director decisions as: "The sound of that moped has to be 2 dB softer," but more the perception of the whole thing as an 'observer'. Sound designer Gary Rydstrom describes it as follows:

For me in the mix the director's job most importantly is to be at that point, funny enough, the most objective observer of the mix of that movie to see what's working and make sure that we are helping the movie, not hurting it.[170]

If the final mix is planned well, there will also be enough time for a viewing of the entire film with the final sound track, to get a good idea of the entire arc of suspense. It's even better if such a viewing can be held sometime after the final mix so that all those involved are able to

169 LoBrutto 1994: 196 – 197

170 Sergi 2004: 176

distance themselves from the film to some degree. It's therefore wise to plan an extra final mix session, as such a viewing will almost certainly lead to a number of corrections. Dutch director Martin Koolhoven on this approach:

During the mixing stage of one of my latest films, at some point we had a mix that everybody involved felt was good. All the same, we watched and listened to that mix at another location once everyone had some distance from the film. We all agreed it was okay but it could be better.[171]

The final sound track can be delivered in various ways, depending on how the film is to be distributed and screened. A feature film is mixed in a calibrated mix stage, generally with a consultant, where the final mix is done in a *DCP* (Digital Cinema Package). Often, though, the final mix is delivered in a variety of formats for distribution via DVD, Blu-ray, TV, YouTube, etc. There is software and hardware that can convert a 5.1 mix into a 2.0 (stereo) mix, for example, but in most cases the re-recording mixer is still needed to deliver the right mix for the various formats.[172] That's often not possible, though, as Walter Murch says:

It's always a compromise because you can produce only one mix. It has to be a mix that will play in both small theaters and large theaters. It just so happens that large theaters are less forgiving than small theaters. If you mix for a large theater, it will tend to play all right in a small theater. You can get into very serious trouble going the other way, mostly with dynamic range. The balance between the energy of average dialogue versus the loudest sounds in the film has to be very carefully controlled for a large theater. The large theater will suck up dialogue and yet reproduce sound effects and music very efficiently because of the energizing of the field that happens with music. Music is continuous, and, thus, it's like it sets up a reverberant pattern that resonates within the theater. Dialogue is individual words separated by silence. They aren't capable of energizing all of the cubic feet of a large theater with the same efficiency that music is. Compared to music, you have to raise the dialogue relatively loudly if you're mixing for a large room.[173]

171 Koolhoven 2011

172 It's not relevant in the context of this book to explore in detail all the possible formats and associated technical preconditions, partly because of the continual technological developments. For specific books on these topics: see the bibliography.

173 Jarrett 2000

In addition to the various formats, an M&E mix is frequently necessary, for dubbing the dialogue into other languages.[174]

possible improvements

We have now analysed the ideal progression of the entire process from idea to film. The word 'ideal' is significant here. As I mentioned, this description is based on authors' cinema, in which case there is already more space and time for consultation and collaboration, but the process described represents an ideal scenario which is not, unfortunately, always the case in practice. There are two important conclusions with regard to that difference between the ideal and what happens in practice: involving the sound designer and composer at an early stage in the process is more the exception than the rule. Much, therefore, needs to be done in that respect with regard to all the parties involved. The second conclusion is that the interaction (discussion, exchange of material) between the various disciplines takes *time*. That has a direct effect on the way the entire process is organised: this is still based on the 'old' linear way of working. So this is where improvements can be made. Director Paula van der Oest on that improvement and the time factor:

I'm also seeing the radical, rapid changes in post-production [...] A well-thought-through approach is essential, in my view, and that requires thorough consideration and forward planning. That's a job for the director and those who are responsible for post-production [...] There has to be time enough for making mistakes, for going the wrong way, for going back and starting again from scratch.[175]

As far as changing the organisation of the process is concerned, the film industry could learn a thing or two from the game industry, where the disciplines are forced to work together, as all disciplines have to continuously interact in the design process for a game. Karen Collins, author of the trendsetting book *Game Sound – An Introduction to the History, Theory, and Practice of Video Game Music and Sound Design*, describes the interaction as follows:

174 *M&E* stands for music and effects and such a mix is used in countries where films are dubbed rather than subtitled (Germany, for example).

175 van der Oest 2011

As game audio develops, the roles involved are becoming more and more specific and dedicated. Whereas one person used to be responsible for all aspects of audio production and implementation, there are now teams of people with a variety of levels of artistic and technical skills. What needs to be stressed is that game audio is a collaborative process; the programmer cannot implement without the music, and the music, as was shown, depends to a significant extent on how it is implemented. Sound design must take into account the dialogue, and so on. The teamwork involved in creating game audio suggests an important reconstruction (or reduction) of the notion of "author". As shown, sound design, dialogue, and music are as much about integration as they are about composition, and the ways in which the sound is implemented greatly affect the ways these sounds are received. To some extent such a relationship exists in film, but it is taken to an extreme in games. Music must adjust to the player's action, in real time, to other audio in the same scene, and so on.[176]

A more interactive process, including the earlier involvement of the composer and sound designer, doesn't necessarily need to be more expensive. It's also a question of deploying the available time differently, which again affects the organisation of the post-production stage, in particular. Michel Schöpping on time:[177]

I want to be sure that the sound has enough time and opportunities. The biggest problem is that sound/music takes time. Our visual brains are quick but superficial, our auditory brains go deep but take a lot of time [...] Time distribution is important. Not two weeks in succession, but one week working, a week standing back and then another week working. Distancing yourself takes time.

In the following chapters I examine the individual design processes for the composer and sound designer and how they handle factors such as time.

176 Collins 2008: 164

177 Schöpping 2011


you can fill a scene
with sound

but you can also
use it to narrate

the composer's design process

introduction

In this chapter, I explore in detail the specific design process for the composer, based on the context of a feature film, as in chapter 2. Any differences in the design process from that in other contexts relating to branding and information are dealt with here in a separate paragraph and in chapter 5. Questions such as: 'How do you prepare? Where do you get your ideas? How do you develop a concept? How do you come up with ideas for the final filmscore? What do you do when you get writer's block?' are dealt with in the following paragraphs. As with the audiovisual production as a whole, there are various different stages that can be distinguished but, in general, it is far more an *iterative process*, so you sometimes have to go back to an earlier stage that you thought you'd already completed. Halfway through the design process, you may, therefore, discover that, in addition to the two main themes you have already developed and elaborated upon, you need a third, which suddenly takes you back to the 'start situation': you have to create a new musical idea and new musical material.

First of all, let's examine possible start situations for a composer. In chapter 2 I mentioned that there can be advantages to the composer being closely involved at certain points during the general stage and at the pre-production stage. Nonetheless, due to circumstances or a conscious choice on the part of the composer, they may not be involved

until the picture lock. The undeniable advantage is that there is then an established frame of reference, namely the visual track, with which to identify the function of music. Take any scene from a film, remove the sound and add various compositions and it will immediately become clear which perceptions, emotions and associations those compositions generate in conjunction with that fixed image. Those perceptions, emotions and associations are largely unambiguous: few films have been made that will have half the audience in tears while the other half is laughing.

The big advantage working like this, though, is that, evidently, the visual track has largely set down the narrative. Nothing has been attempted in the way of combining image and music; the degree to which music can tell the story, the degree to which music influences the visual track and vice versa. The visual track has first been designed and it can now be supported by the music. This book assumes a different kind of collaboration between the sound track and the visual track and, therefore, a different kind of collaboration between the composer and the other disciplines involved. I also apply this point of view in the coming paragraphs to describe the composer's design process.

design in a general sense

It's important to be conscious of how you go about the design process on a daily basis. A good *workstation*, suited to the way you work, is important, for instance. That entails, on one hand, a number of physical requirements with regard to the screen(s), office chair, keyboard, instruments and air climate and, on the other, the specific DAW set-ups you use. It can, however, also mean having no computer, laptop, tablet or mobile phone with internet access on your workstation, as it's a given fact that social media (Facebook, Instagram, Twitter, e-mail, WhatsApp, etc.) can be distracting. At the same time, it's wise to take enough breaks in your composing, especially as it's sedentary work. Working for an hour and then taking a five-minute break to relax and move around a bit is a good rule. In any event, it's simply impossible to generate new musical ideas eight hours a day, so it's smart to plan in various types of musical activity. Not just generating new ideas but also, for example, working out those ideas more concretely, looking for or generating specific sounds and writing out parts. Depending on the time of day you

prefer to compose, you can create new musical ideas in the morning, for instance, and do more of the crafting and/or production work at other times of the day. Planning your day like this is not only advisable for composers; it applies generally to creative work, as we see in the writer Kim van Kooten's story about the stress she experienced while writing her first book:

'I could get really grumpy and cross, get the kids off to school and then spend the whole day at the computer. Not eating, not getting up, I started hurting all over and my wrists became inflamed. I hardly every ask my dad for help, but at some point I asked him, 'How should I be doing this?' He said, 'Work two hours a day. But then two hours really focused'. That's what I'm doing now with the book. I work on it from nine to eleven and it's actually going really well'.[178]

Focus and *discipline* are two core concepts in creative work, as you can see by the above quote. It's better to focus on working on new musical ideas for two hours than to sit at the computer all day out of some kind of obligation. Focused work can also help you get into the flow: the feeling that creating is almost automatic, that time flies and there are no bodily impulses (such as hunger).[179] *Planning* is indispensable for finding the calm for that focus and discipline. Once you know *how much time* there is for the entire design process and (roughly) *how much music* has to be composed and produced, it's also clear (roughly) how much music has to be composed and produced each day or each week. There is a distinction between the amount of musical ideas needed and their various elaborations, too. Such an overview, which can also be broken down in detail (preparing scores, consultation moments, answering emails, etc.) instils structure and calm into the design process.

One last word on the following paragraphs and the planning of the design process. The book is a linear story, so you might think the various elements of the design process I describe in the coming paragraphs take place neatly one after another. Nothing could be further from the truth. The important thing is the situation, the state, the *mode* you are in at that moment. You might be busy sketching and then, suddenly, spend an hour 'collecting' (or vice versa).

178 Veen 2015

179 The flow theory was developed by Mihaly Csikszentmihalyi: https://nl.wikipedia.org/wiki/Flow_(mentale_toestand)

preparing, searching and collecting

So I'm assuming a situation in which the composer already starts working before the picture lock. Before any musical material can be created, most musicians (and most creative artists) find preparing for the forthcoming design process important. Over the years, almost everyone develops certain *rituals* for this, prior to the actual creation, such as clearing your workstation and doing your administration. It's often a combination of 'putting it off' and 'clearing your head' to make room for something new. Such rituals are often paired with what you might call *searching* & *collecting*. The searching is mainly about 'getting a feel for what's possible, without looking for anything in particular'.[180] This can take the form of listening to specific music or watching specific films without any clear connection between that music and those films and the film you for which you have to compose music. Searching can also take the form of going for a long walk, to get your thoughts flowing freely. Collecting, on the other hand, is far more focused: it can mean collecting, reading, watching and listening to all kinds of repertoire, such as literature, films and music, related to the film for which you will be composing. Evidently, the boundary between searching and collecting is subtle, which is why I name them in the same breath.

getting started, sketching, standing back and validating

A common question from novice film composers is, 'How do I start?' The most fundamental answer to that question is *just get started*. In this case, 'getting started' means taking the first musical steps by generating musical material and/or developing a musical/dramatic concept. By *musical material* I mean the first musical 'scraps', such as a certain sound, sonic development, harmony, harmonic progression, a rhythmic riff or a little melody that, one way or another, you associate with the film or with a specific scene. The composer Jocelyn Pook on 'starting small':

> I start with a small idea. It may be a melody, a group of chords, or even just a drone. It is always something very simple and small like that.[181]

180 IJzermans 2019

181 DesJardins 2006: 195

By a *musical/dramatic concept* I mean the role and function of the music in the film. The questions to ask are, 'What is the theme of the film?' 'How is the story constructed?' 'What can the music add to and bring about in that story?' Does the story lend itself to the use of leitmotifs or should I work scene by scene?[182] Should my music concentrate on emotions or, rather, on the narrative, or particular actions or the main character? Which scenes are specifically suited to music? Where and how does the music start and end? How many themes, motifs, etc. does the film need? What kind of instrumentation, what kinds of sounds, rhythm and harmony? There are lots of questions that refer, amongst other things, to the various codes discussed in chapter 1 and to which you may have to find answers in a (rough) concept. Composer Mychael Danna on concept forming:

The most important thing is to take a lot of time and talk to the director before you write a single note. It's really important to come up with a concept – to really let things kind of form together, especially in the subconscious, which I feel is a major part of the creative process.[183]

Two approaches, material – concept, determine the entire design process; in fact, you continually switch from one to the other and the two continually influence one another.

If you are brought in at the beginning of the design process (screenplay, pre-production), it goes without saying that your work will be more concept-based. Starting to create musically at that point often means working 'in a vacuum', as there is probably not yet enough to grasp hold of in terms of narrative and style. It can be more convenient to work with existing music to establish the possible musical approaches and styles. To get some kind of grip on a situation in which you have to compose music for a ninety-minute feature film, for example ('How

182 A *leitmotiv* is a musical theme that recurs each time a particular character or object or a particular idea appears. In all the *Indiana Jones* films, for example, Indiana Jones's whip is accompanied by a leitmotiv by the film composer John Williams.

183 DesJardins 2006: 55

on earth am I going to go about this?'), a good strategy is to develop a concept. You might do this by analysing the screenplay, using the dipole model in chapter 1. That analysis can lead to such conclusions as: I'm going to accompany this type of scene with this motif; when this main character appears you will always hear this sound or this leitmotiv; I'll use this kind of rhythm for the passage of time, and so forth. This can generate a graphic overview of the major events, actions and emotions, for example, in which you can indicate: when there should be music, what that music should contribute to the story, the characteristics of that music and where that same music (or a variation) recurs in the film, whether the music is linked to characters of focused on developing the narrative, whether the music has to provide information on time and place, and so forth. This gives you an idea of the number of themes, motifs and suchlike that you need for a film.

At the same time, developing a concept is a purely intellectual exercise: alone, or in conjunction with the director and other parties involved, such as the sound designer, you are developing a vision of the musical part of the sound track, which has not yet been tested in practice. In many cases, things will turn out differently in practice and the concept will work only partially or perhaps not at all, or a completely different, far better concept will emerge.

The opposite approach, as I mentioned above, is to initially develop musical material with any form of concept. Often, it will be difficult or impossible to develop a concept at an early stage. One good strategy, in that case, is to simply start working on a scene from the film (or screenplay) that appeals to you. At least you are creating material, which will often generate ideas for other scenes and can sometimes be used verbatim (or in variations) in other scenes. A concept then eventually develops as you go along.

To conclude, working with a concept can provide you with some kind of handhold and you need a concept to express ideas for the musical element of the sound track clearly and consistently. The concept does, however, need to be used with a sense of perspective. It can provide a handhold, but if new, better ideas come along in practice, then you're better off modifying the concept rather than throwing away those

better ideas just because they don't correspond with it. In other words: the concept isn't sacred; if, in practice, the actual music dictates changes, those changes must be made.

sketching

You will find yourself wondering how to 'get started' when it comes to the actual music. These are issues related to *sketching*. 'Where do I get musical material from?' 'How do I come up with a musical idea?' Depending on how you are accustomed to working, you can use a piano, keyboard, guitar, laptop, etc. to generate notes and/or sounds based on your associations with the film. If those associations are based on the screenplay, discussions with the director and/or input from the art department, then you won't be able to test them with the visuals yet, as they simply don't yet exist. That doesn't prevent you from starting to generate musical ideas, though. Even if there is only the above input available and there are still no moving pictures, you do have some information, such as: 'This film is about an older couple who have decided to end their lives together', or 'This is a road movie about a young woman travelling alone through South America, where she meets the love of her life'. The first example clearly involves drama, whereas the second is in the familiar road movie genre, combined with a romcom. These typologies have associated musical approaches. Depending on how thick you want to lay it on, drama calls for a dramatic melody played on strings or a minimalist piece of piano music. The road movie is characterised by an 'on the road' feel: a lone (slide) guitar, possibly supported by a trucking rhythm. A romcom easily translates into recognisable, stable music with an agreeable rhythm and harmony. Clichés aplenty, but as a composer you shouldn't be afraid of that at this stage: you simply have to produce the first notes and/or sounds. 'Getting started' can, for example, result in a simple musical motif of three repeated notes, a snippet of melody, still incomplete, but catchy, a sound development that evokes certain associations, a sound recording with interesting layers or a (combination of) vinyl samples, for instance.[184] Compare it with trying to find a good riff in pop music or song-writing. It's important at this stage not to be critical of yourself

184 By sound recordings we mean field recordings: recordings not made in a studio, which can be either natural or man-made sounds.

or the material you're creating. What you're actually doing is musical brainstorming, so any musical idea is worth investigating. Composer Louis Andriessen has this to say:

And yet, at some point, you write something down without feeling that it's a brainwave. You just have to get on that bike and start pedalling. Lifting your leg, without exaggeration, takes an extraordinary amount of effort, but once you write something down, one morning – and it's generally wrong, too, inspiration or no inspiration – then at last you're on the move, in any event you're going faster than standing still next to your bike.[185]

standing back and validating

Then, you have to ask yourself an important question: 'Have these notes and/or sounds got anything to do with the film?' This is the questions that takes the longest to answer. As a composer, you need to take time to *stand back* from that motif, that melody, that sound and leave it for a day before listening to it again. If it still evokes the same feeling and association the next day, then evidently it is material that – for you at least – has something to do with the film. You can get on with other work while you're standing back from the material, further increasing your distance from what you have created. That other work could be elaborating on music sketches you made earlier, creating other musical material, or installing a new set-up in your DAW, for example. Answering the above question ('Have these notes and/or sounds got anything to do with the film?') is also referred to as *validating*: establishing whether what you have done 'works'.[186] Louis Andriessen in conversation with Elmer Schönberger:

Question: So you play the whole thing through?

Answer: Sometimes. Once or twice during the week. It's a bit like what they call a run-through in theatre. You do it at a tactful moment, not just when you're blocked, but when things are going well, too. So you do it to start rather than finish off a composing day. A run-through allows you to stand back and put yourself in the position of the listener.[187]

185 Schönberger 1981: 29

186 IJzermans 2019

187 Schönberger 1981: 30

Louis Andriessen validates his work by playing through his composition. This is like playing back your composition in your sequencer. Another way that gives a different kind of impression, not time but graphic related, is to study and evaluate the score for the composition. If you're still at the stage of 'a musical idea', then the score for that idea won't generally provide you with much insight. If your idea has been fleshed out, though, a printout of the score will give you a whole different view of the music, as you have a total overview at a glance. You can easily see whether the music is only moving in certain registers or whether it covers a far wider frequency range. Counterpoint, harmony and rhythm can also easily be recognised and analysed.[188]

The method described in the previous paragraphs actually boils down to 'jamming and improvising on an instrument', inspired by what the composer has read, heard and seen in the screenplay, in discussions with the director and other departments and in any rough cuts. Such a method can be even more efficient and effective when working as a duo, with the composer creating and the other facilitating, leaving the composer free to create. One good example of such a collaboration is the duo I already mentioned, Trent Reznor and Atticus Ross, in their design process for the film *The Social Network*. Their 'sketching' consisted of Trent Reznor spending hours jamming on his guitar and synths, fuelled by his ideas and associations related to the film. Atticus Ross recorded Reznor's improvisations and put markers at those moments he felt something interesting was happening musically. Whenever Reznor got fed up or frustrated, he stopped and went and did something else (standing back) and the roles reversed. Ross compiled various rough compositions from fragments of Reznor's improvisations, which he reworked (pitch shift, time stretch, etc.). Sometime later, Reznor came back again and listened to what Ross had chosen and created, then they continued to work on the raw material together.

A collaboration aimed at generating musical material can be structured in other ways, too. You could organise a studio session, with a number of musicians improvising within specific musical constraints, based on a musical idea or an initial musical concept. Of course, it's important to invite musicians who are good at improvising and actively proposing

188 *Counterpoint* views music horizontally, in time, in musical phrases of equal value, whereby consonance can also be important. Unlike *harmony*, which views music from the perspective of vertical consonance: as chords and chord progressions.

musical ideas. Musical ideas generated in such sessions may lead to new compositions without using any of the actual material created, but samples of specific phrases, rhythms and instruments may well used for composing. The composer Ryan Shore on working like this for the film *Vulgar*:

In the rape scene I used a recording technique that I had never tried before. I didn't give any of the musicians any written sheet music at all. Instead, I recorded them individually as overdubs, and only gave them musical directions through their headphones based on pacing, volume, and intensity. We didn't use a click track. I started with the drums and, while I watched the movie, I had him play completely free, giving him directions only about the emotions and the arc of the piece, but with nothing specific to play. The cue was seven minutes long, and after those seven minutes were done, I did the same exact thing with the bass player. However, I didn't let the bass player hear what the drummer had done. The bass player heard only his own instrument and created his own little musical story based on my same directions over the seven minutes. I did the same with each of the instruments. Nobody heard each other's performances because I didn't want them to play off of each other, which is what jazz musicians are used to doing – one musician does one thing, and another responds to it. In this case, I didn't want any of that type of interplay because I wanted the sound to be as free and disoriented as possible. The only common thread among the musicians was the arc of their performance, how their intensity was shaped throughout the scene. It seemed like an appropriate way to score the raping of a clown.[189]

Yet another method for getting ideas and sketching is to work with existing material. This might be music you've made yourself in the past for other productions, or musical ideas you've saved from previous sessions and productions, but it could very well be music by other composers. In the paragraphs on 'preparing, searching and collecting' we already saw that you can fuel and inspire yourself with all kinds of music that, for you, somehow has something to do with the film. This can help you find new ideas and approaches. After all, the scope of any one composer's ideas is limited. If any visual material has already been edited, then experimenting with existing music alongside a scene can work very well. This is something akin to what an editor does with a temp track, only you're now doing it as a composer. The big advantage

189 DesJardins 2006: 249 – 250

of using existing material over trying out one musical idea, is that you can test all kinds of different music for a scene and experiment with how it's placed. This can result in entirely new ideas and insights you would never have come up with by yourself. Once you've found a combination of visuals and music that works, though, it's important to analyse just what it is in that music that makes it work. This helps avoid the risk of producing a sound-alike. That analysis can be done on the basis of the dipole model, although that focuses primarily on the narrative effect of music and sometimes it's good to focus on the emotional aspect (the emotional codes). If you start working on the basis of a composition for solo violin with large intervals in the melody, played with the necessary intensity and vibrato, then your own composition is likely to call for a similar approach in terms of intensity of playing, without having the same melody. If it's actually the character of the melody that is largely responsible for the successful collaboration between visuals and music, then the harmonisation of your melody may be different. So it's essential to conduct as thorough an analysis as possible to find out which elements need to be present in your composition and which are less significant and therefore leave you more freedom for composition.

Another way to sketch is to use technology. There is plenty of software that generates musical material in the form of either sounds or notes. Nowadays, this is generally aided by artificial intelligence (AI). You can enter specific style characteristics and other pre-conditions (tempo, rhythm, atmosphere, etc.) and, on that basis, the software will generate a composition[190] that you, as a composer, can then use as raw material. This type of software can be seen as a kind of intelligent composition assistant and it enables you to produce a great deal of interesting material in a relatively short space of time, especially if it also presents the composition as a MIDI file.

Working with technology does have its downside, though; the DAW default setting (4/4 time at 100 bpm) can easily tempt you to only produce cues with those characteristics, which is something to be aware of during the process.

190 An application such as *YouCompose*.

Even if there is already a rough cut available while you are creating the initial musical material, my advice is still to sketch and create away from the visual material. The rough cuts are far from finalised, so there is little point in allowing them to directly influence your composing. In any event, experience has taught us that composing straight 'to the picture' is limiting. As a composer, you then have to tackle 'issues' concerning the relationship between image and music in addition to any musical 'issues' that need solving. It's wiser to initially focus on the music and then see how it works in combination with the visuals, so first create musical material based on your own associations and impressions. That material will often also have a greater internal musical consistency than a composition that is constantly 'reacting' to the picture. The composer Klaus Badelt, who wrote the music for *Pirates of the Caribbean*, for example talks about how he works:

I never actually write the themes to the picture. My way of writing is like this: I get involved early on in the film, sometimes even before the script or when the script is being written. I read it or watch the film maybe once or twice. I don't look at it for a while and just try to have it sink in, and write the themes or maybe a few pieces. If I have the time, I'll take ten days or three weeks maybe, to write these themes, maybe longer if I have the time, because it's defining the vocabulary. Then, after I do all of this without the picture, I put the picture back up and see if it sticks somehow – if I wrote for the right film or not. This way, for me, I don't get stuck in details. I don't try to do the twists and turns of the film yet. So I have time to create emotionally valid material. Then I can adjust it.[191]

Where rough cuts of the visual track can be helpful is in finding suitable tempos and, perhaps, rhythms. Visual editors often have a 'hidden' rhythm in their editing and you can discover it by simply running a click track along with a scene. Try various tempos and, at some point, you will find one that, one way or another, fits exactly with the visuals. I'm not talking about emotional or narrative similarities here, of course, just the possible links between the rhythm in the visuals and the rhythm in the sound. You can then take that tempo (there may even be a number of tempos that fit the visuals), and work on from there.

191 DesJardins 2006: 9

elaboration

There is a huge arsenal of composition and music production technology available for elaborating on musical ideas, which are potentially suited to film music. The major criterion for film music is that 'it works': that the music has the desired effect in combination with the scene/film for which it is intended. This criterion allows a great deal of freedom to use composition and music production technology of various styles and genres in all kinds of combinations, as long as 'it works'. In the following paragraphs I explore a number of composition and music production technologies and a number of ways of turning a simple musical idea into a detailed music cue.

trial and error

Let's assume you've generated a couple of musical ideas you feel are related to the film in one way or another. As soon as there is a rough cut of a scene your material could fit into, you can fairly easily test your idea by repeating the piece of music a number of times and playing it over the visuals at that length.[192] You don't need to immediately add variations, as this is just an initial check to see whether, somehow, it works with the visuals. You can also try the music at various different moments in the scene, testing the effect of the combined visuals and music. It will soon become clear when the best moment is to start and stop the music and what further elaboration the music requires: variation, development, combination with a second musical idea, etc.

One subsequent step is to try out this basic composition on other scenes. Don't focus too much at this stage; try out the music in a number of scenes and at various points in those scenes. There will always be surprises: (parts of) scenes will suddenly take on a whole different, unexpected meaning. Likewise, you can find that the musical idea you thought would work well for a particular scene fails to do it justice. So it's essential to acknowledge the importance of research at this stage: it can provide you, as a composer, with innumerable new ideas and insight that can only be gained by trying out all the possible combinations of the visuals and music. These can then result in a (change to the original) concept for the entire film. What you're actually doing here is what a (good) editor will also be doing with your compositions later on

192 So here, we are actually validating.

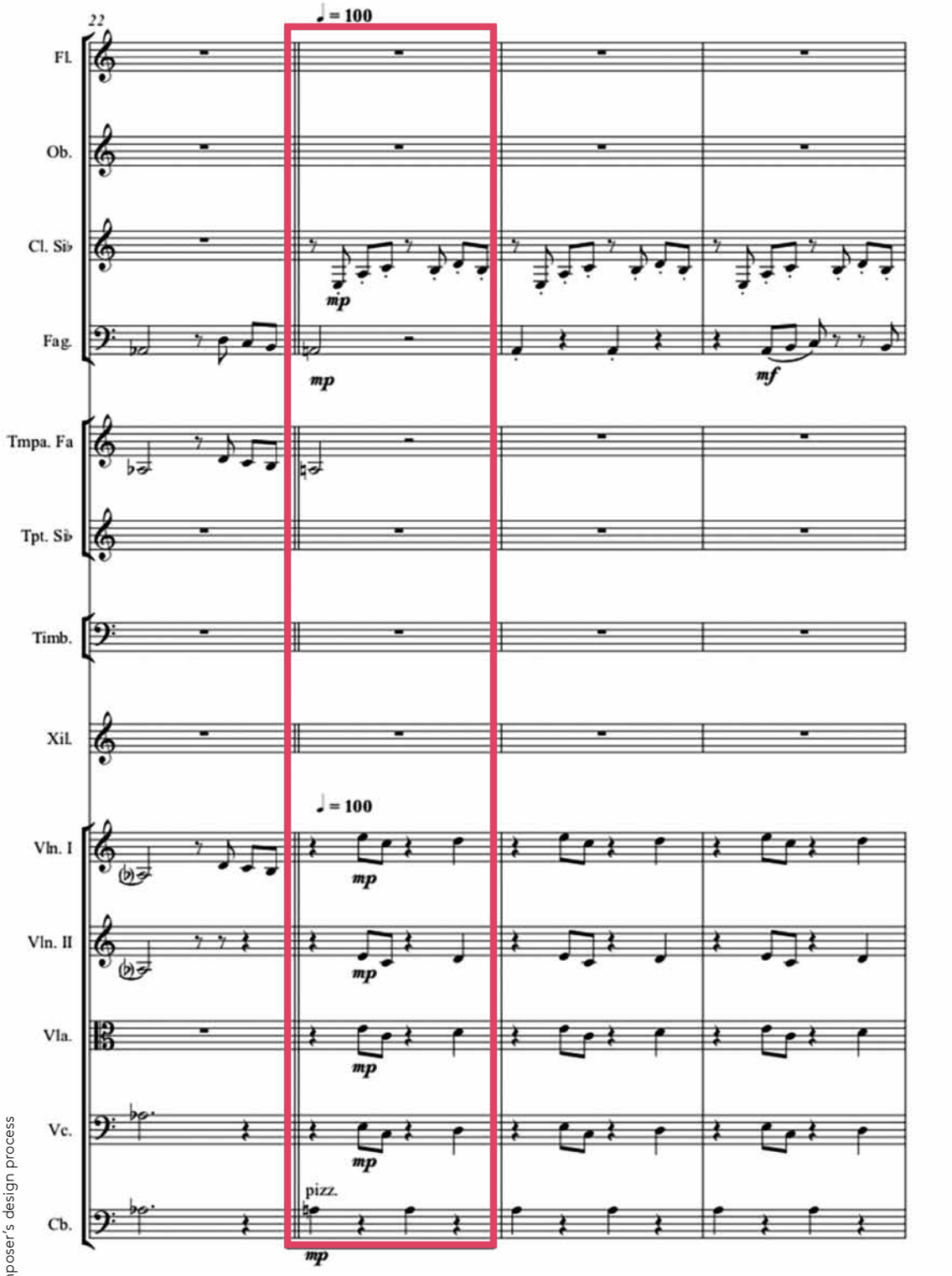
in the process: trying them out in all kinds of ways at various moments throughout the film.

musical cells

Generated material (in the form of a musical motif, melody, rhythmic riff, sound, etc.) is highly suitable for a composition technique that is extremely common in film music: working with *musical cells*. A cell is a small group of notes or sounds. Such a cell must be, and remain, recognisable so, in principle, it changes little if at all. The duration of a cell is often only a few seconds. An example can be seen below in bar 23 (outlined in red) of the score on the next page for the music cue *A Little Library Music*, by the composer Jon Brion, from the film *Magnolia*. The cell is introduced in bar 23, in bar 24 we see a virtually literal repeat of bar 23, in bar 25 there is a minor variation but the musical cell is still present and bar 26 and the subsequent bars (not seen in this excerpt) are based entirely on the basic cell from bar 23. In the film, the entire cue last roughly 25 minutes, making it one of the longest music cues in film history. The cue as a whole is based on this one musical cell and on a common composition technique in film music: *repeat* and *variation*.

The film composer Bernard Herrmann was the one who introduced working with such cells into film music. The big advantage is that you can relatively easily play around all kinds of other auditory events. In chapter 2, we saw that the dialogue is almost always clearly intelligible. If there is a music cue, as in the above example, and a dialogue starts at some point, then you can relatively easily accommodate it by 'thinning out' the bar in which the dialogue begins, for example, leaving out a number of instruments or playing certain parts an octave lower so they don't obscure the voices. It's essential for the basic idea of that cell to remain intact, keeping the cue consistent from a musical point of view. That necessitates retaining the rhythmic content of the cell, in particular. The composer Arnold Schoenberg on the principle of repetition and variation and the importance of rhythm:[193]

193 Here, Schoenberg talks about 'the motif'. A cell is generally made of one or more motifs and, in the example above, the cell (bar 28) consists of 2 motifs. For Schoenberg's assertion, however, it makes no difference whether we talk of a motif or a cell.


22
♩ = 100
Fl.
Ob.
Cl. Sb
mp
Fag.
mp
mf
Tmpa. Fa
Tpt. Sb
Timb.
Xil.
♩ = 100
Vln. I
mp
Vln. II
mp
Vla.
mp
Vc.
mp
pizz.
Cb.
mp

> The motive generally appears in a characteristic and impressive manner at the beginning of a piece. The features of a motive are intervals and rhythms, combined to produce a memorable shape or contour which usually implies an inherent harmony. [...] A motive appears constantly throughout a piece: it is repeated. Repetition alone often gives rise to monotony. Monotony can only be overcome by variation. Variation means change. But changing every feature produces something foreign, incoherent, illogical. It destroys the basic shape of the motive. Accordingly, variation requires changing some of the less important features and preserving some of the more important ones. Preservation of rhythmic features effectively produces coherence (though monotony cannot be avoided without slight changes).[194]

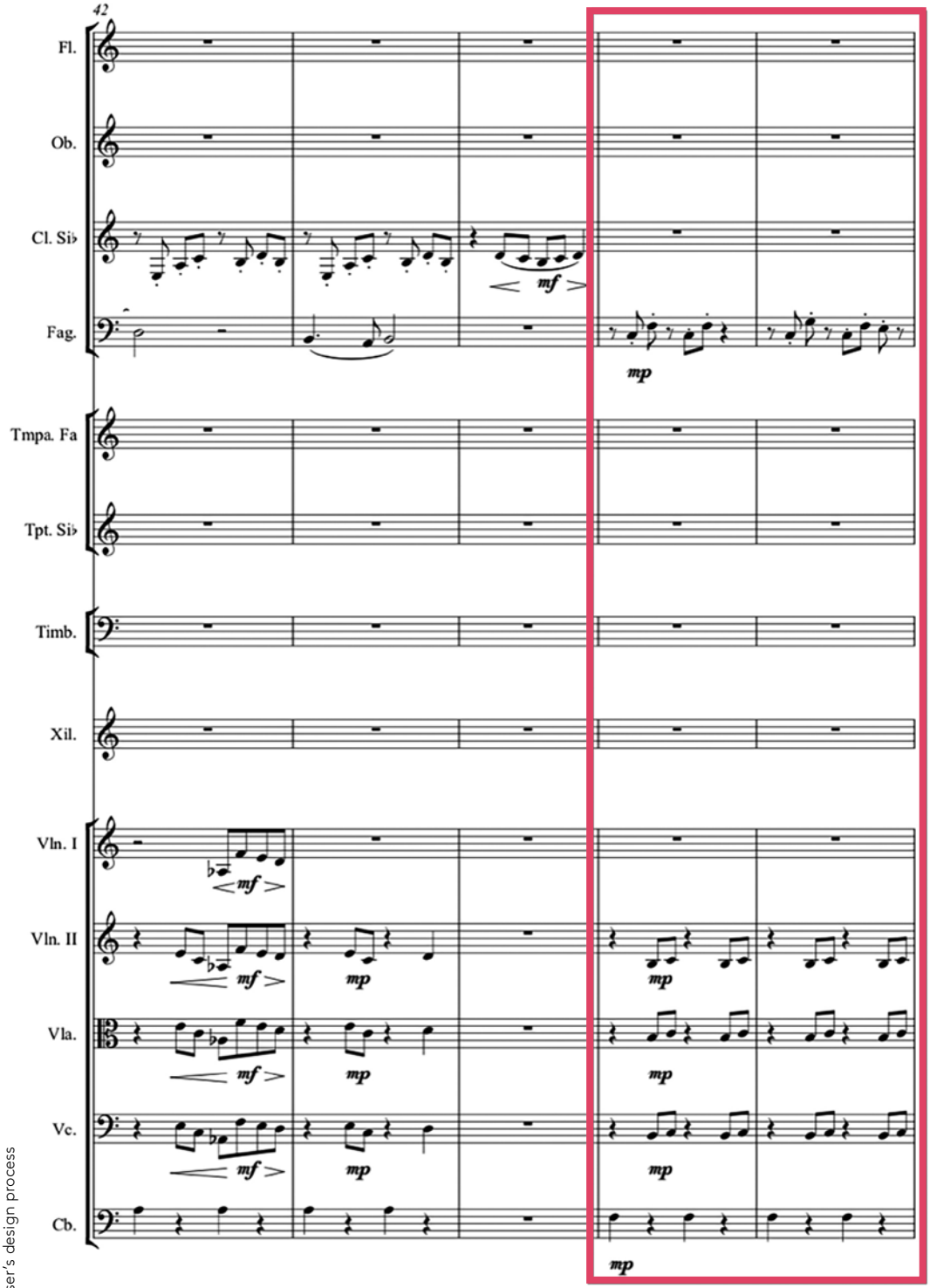
So Schoenberg is telling us that the rhythmic content of the cell is the most important element. It's therefore better to initially add variations to the melodic or harmonic content, which is exactly what happens in bars 45 and 46 of the cue *A Little Library Music* on page 144: the rhythm, the pulse, remains the same; only the melodic and harmonic content is altered. The continuous rhythmic pulse of the cue, which is used in the film over a montage of seven different story lines, keeps propelling the story along, while the variation in the melodic and/or harmonic content prevents it from becoming monotonous.

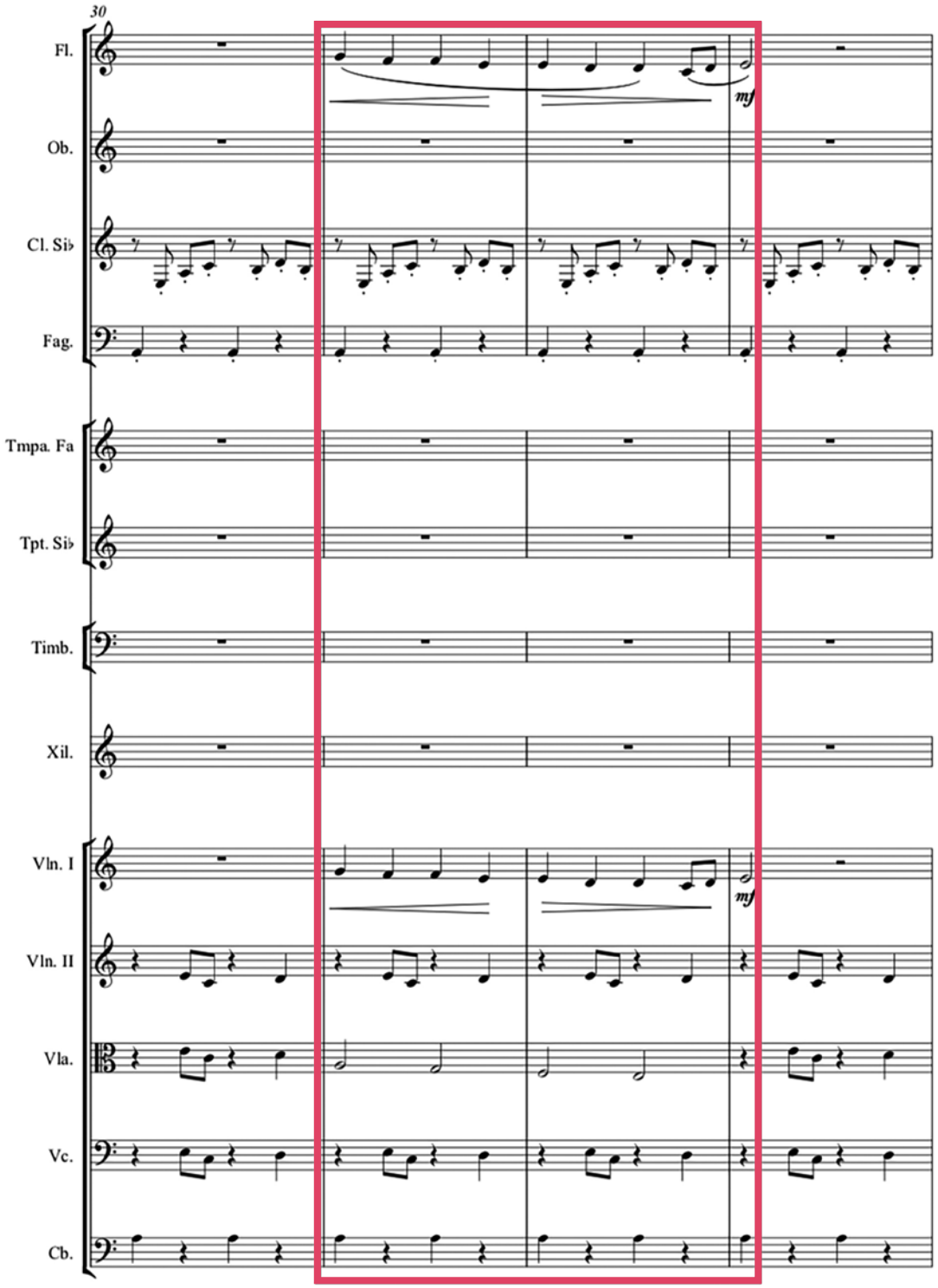
At points where there is space in the dialogue, the flutes and first violins even lay a melody over the rhythmic pulse (bars 31 – 33 on page 145).

minimal music

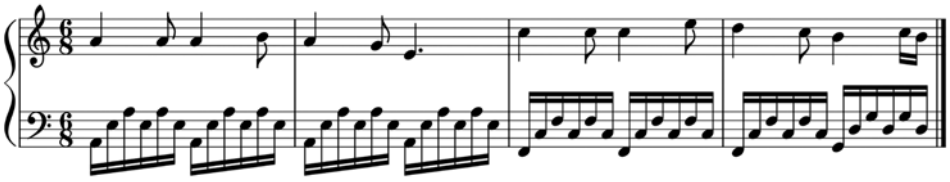
One specific variation on the repetition-and-variation principle is *minimal music*, also referred to as repetitive music. Characteristic of this music are the minimal musical raw material, the long compositions in relation to that minimal material and the use of much repetition and gradual changes. Composers such as Philip Glass and Michael Nyman wrote film music in this style for such films as *The Hours* and *The Piano*.

194 Schoenberg 1970: 8


42
Fl.
Ob.
Cl. Si♭
Fag.
Tmpa. Fa
Tpt. Si♭
Timb.
Xil.
Vln. I
Vln. II
Vla.
Vc.
Cb.
mf
mp

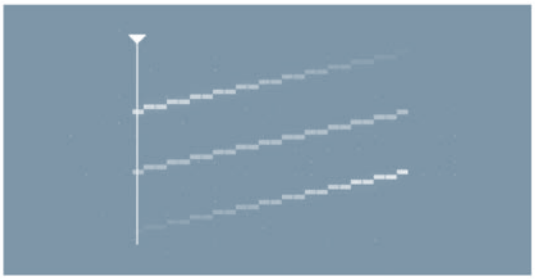

30
Fl.
Ob.
Cl. Si♭
Fag.
Tmpa. Fa
Tpt. Si♭
Timb.
Xil.
Vln. I
Vln. II
Vla.
Vc.
Cb.
mf
mf

While the original minimal music draws its strength from the length of the composition, though, often generating a meditative effect, in film there is generally no time for that. You can still work with recurring rhythmic patterns, in particular, creating a compelling pulse, but there is considerably more melody and harmony present. In the simplified transcription of an excerpt of *The Piano* below, the (simple) melody and harmony are clearly visible, in addition to the rapid left hand, which generates a strong pulse that pushes the story onwards.



Shepard tone

Another variation on the repetition and variation principle is the *Shepard tone*. The Shepard tone is named after Roger Shepard, who invented this audio illusion. Take three chromatic scales, each an octave apart. While all three scales are played upwards, the highest scale diminishes in volume, the middle scale remains constant in volume and the lowest scale increases in volume. This gives it a seemingly continuously ascending line. Once the highest scale has died away, it starts again and gradually assumes the leading position from the lowest scale. You can also do this with sound, with three tones an octave apart (it's then known as the *Shepard-Risset Glissando*) and you can make it move in the opposite direction, in other words downwards. The effect, in terms of the dipole model, is highly dynamic: music with an unending vector. It's frequently used: by Hans Zimmer in the film *Dunkirk* and David Julyan in the film T*he Prestige*, but also for the 'endless stairs' in the game *Super Mario 64* and in the number *Echoes* by Pink Floyd. Visually, it can be likened to a barber's pole, which appears to be constantly moving upwards as it revolves (or downwards if it's turning in the other direction).

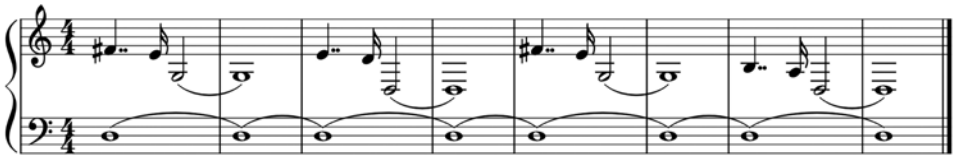


melodies

The musical idea you've created may also include a melody, or it may be made up of a number of motifs or cells to be elaborated into a melody. The advantage of working with small musical cells has already been mentioned above: it makes it relatively easy to play around all kinds of event in the visual and/or sound track. The risk with melody is that someone in the film may start talking halfway through it, so your melody will be turned down or even muted in the final mix. Even more risky is when the melody is based on a familiar musical structure such as those in songs. The chosen musical structure can then soon clash with the narrative structure of the film. If you want to use a 16-bar blues scheme, then you have to be sure that it fits with the structure of the story and the scene in question. Adapting the blues scheme to the story structure later is problematic, as the audience is bound to feel that you are attempting to squeeze a 16-bar sequence into 15 and a quarter bars, because the editing has altered and those 16 bars no longer fit with the visuals.

Longer melodies are therefore relatively rare in film music. You can use them over the starting and end credits, in scenes without dialogue, in films where the aim is to launch the drama with a melody and in scenes and/or films that are really built on music. One classic example of the last category is the western I already mentioned, Sergio Leone's *Once Upon a Time in The West*, for which Ennio Morricone composed the music prior to shooting. In post-production, the editing was done to the music. Consequently, there are relatively long scenes in the film where little or nothing is happening visually, but plenty of meaning is being created by the music.

Above, I talked about working with musical cells from the perspective of instrumental music.[195] Evidently, the above principles also apply to electronic music, which is often impossible to represent as a score. It's possible to identify cells in that electronic music, too, but then in a particular sound or sonic development, for example. You can then, again, work with repetition and variation. Finally, there is the combination of instrumental and electronic music, which is quite common in film music these days. With electronic music (possibly combined with instrumental music), it's easier make a link with sound design, so the sound track is experienced more as a single entity. There are numerous examples of such combinations. One highly illustrative example can be found in the film *The Social Network* with music by Trent Reznor and Atticus Ross. Represented as a score, the main theme looks like this:



In this representation, the note D in the lowest staff could, for example, be continuously bowed by a number of cellos or double basses. It's an electronically-generated drone, however, which is continually in motion and is like a kind of guttural sound, but it does have the pitch D as a constant. The notes in the uppermost staff are played by a solo piano. Altogether, this creates a relatively simple harmony: a G6 chord (G-B-D-E), in which the B is largely absent but can be heard briefly in bar seven, followed by a D maj chord (D-F#-A, in which the F# is actually absent). The continuous drone in D creates the strong impression that it's the root of the whole piece, so this is actually a tonic effect (5-1), which we will discuss in the following paragraphs. It's all very simple musical material, but it works, because that solo piano perfectly illustrates the sense of loneliness revealed during the film, while the D drone creates a threatening feeling. The combination of the two generates an interesting tension. That electronic underlayer also constitutes a possible link to the sound design, or with the other music in *The Social Network*, which consists almost entirely of electronic layers and elements.

195 Music produced by (traditional) musical instruments.

playing with tonality

Before further exploring concepts such as the tonic effect, it might be handy to define a few things. *Tonality* in the broadest sense of the word applies to music that focuses on a central tone, the root or tonic, and is built up around that tonic.[196] The focus on that tonic takes the form of associated scales and triads originating from those scales. If that tonic, the associated scales and the triads are clearly defined, then we speak of *classical tonality*, in which only two scales are used (the major and minor scales). Much of popular music is based on this tonality. If the tonic is C, for example, then the major scale is: C(1) – D – E – F(4) – G(5) – A – B – C. Associated triads are therefore C-E-G (1), F-A-C (4) en G-B-D (5), with the numbers indicating the lowest note in the triad and its position in the scale. In popular music, you will come across many songs based on those 1, 4 and 5 triads, with the final chord progression in the song often being 4, 5, 1. The final chord is experienced as a 'resolution', a 'completion' of the musical path that has been travelled. This is referred to as the *tonic effect*: during such a musical 'walk' the need arises to return to the basis, the root or tonic. The example of *The Social Network* in the previous paragraph (a G6 chord followed by a D major chord) is a 5-1 chord progression, with the D major as the calming final chord. In addition to the two scales in classical tonality, there are also *floating* and *dilated tonality*, where the music departs further and more often from the tonic by using other kinds of scales, modulating frequently and adding outside notes, for instance.[197] Finally, there is *atonality*, in which all chromatic notes are of equal value, so there is no longer any tonic or root.[198]

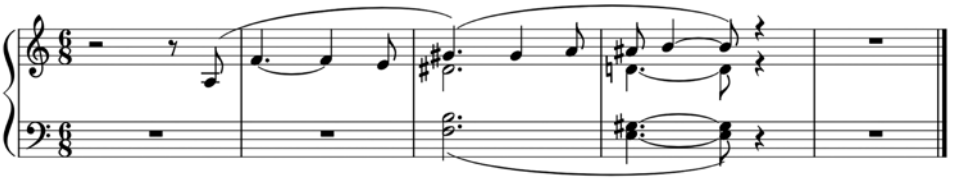
All these types of tonality are quite common in film music, as you could – in a nutshell – compare the above tonic effect with the dynamic situation in the dipole model ('there is a development underway') in which there is a need for a stable situation ('there is calm and stability'). That tonic effect can be dosed by working with floating and dilated tonality: the *whole tone* and *octotonic* scales, for example, are scales within which a clear tonic is, to say the least, difficult to establish. Both are therefore good for creating instability. Atonal music is the most extreme variety in that respect. This music offers no handhold: all tones are of equal value and there is no tonic effect, no root to serve as a beacon.

196 The *root* is also referred to as the *tonic*.

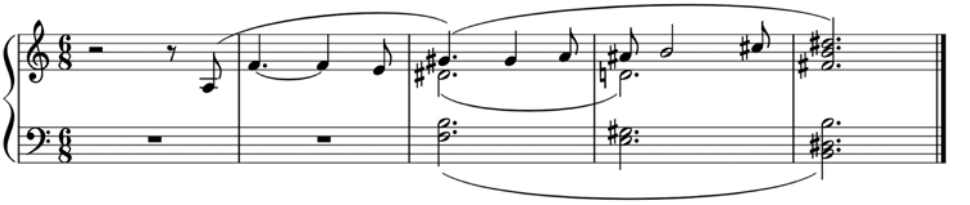
197 Also referred to as *diatonic scales*.

198 A *chromatic scale* contains all twelve notes in the octave.

You can play with tonality by moving towards the tonic in a chord progression but never actually completing that movement with a resolution. The composer Richard Wagner gave a good example of this technique in his opera *Tristan and Isolde*, in which he defines the theme below in the overture.



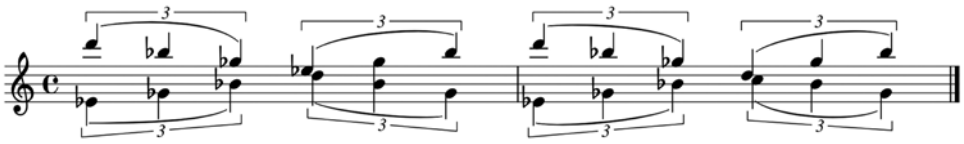
The theme has a clear direction, a vector, due to the harmony and the ascending melody in the third and forth bars, but the final 'resolution' the tonic and the associated chord (B major), is postponed throughout the entire opera and only sounds in the final chord (see below).



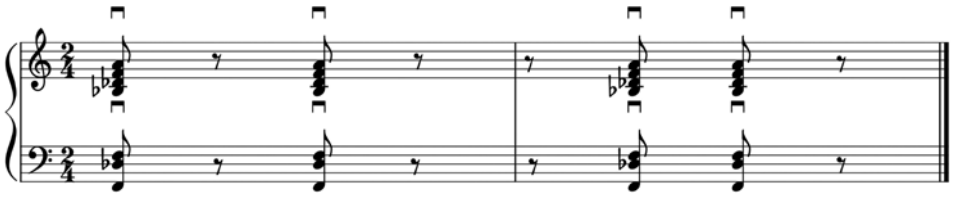
Consequently, as you listen, you continually experience that tonic effect: the need to arrive at that resting point, that resolution. Wagner uses various techniques (spreading notes, playing with time, etc.), so that tonic effect is not heavily present and you're not aware of it, but it does play a role in the emotional effect of the music.

In film music, you will almost never place the resting point, the tonic, at the end of a music cue. The moment you finish on a tonic somewhere in the middle of the story, you are inserting a musical full stop at a point when the film story simply continues. So you can only use it when there is really a (temporary) stable situation.

Alternatively, you can do the opposite: not employing a tonic effect but using a static harmony. In addition to his use of small musical cells, Bernard Herrmann was a master of this technique. In films such as *Psycho* and *Vertifo*, he uses chord progressions that actually lead nowhere but repeat (almost compulsively) and are often based on playing with tonality, as with the musical cell from *Vertigo* below. The entire piece is seemingly be based on an alternation between an Eb minor maj7 chord (Eb-Gb-Bb-D) and a D augmented dominant chord (D-F#-A#-C). You could also, however, see it as variations on an Eb minor chord, which shows there is no clear tonality, no clear tonic. In the film music for *Vertigo*, this musical cell is also often repeated, giving the impression of being in a kind of musical vortex; you never get out, it just keeps going.



He does something similar in *Psycho* with what, in itself, is a less ambiguous chord, in which he 'hovers' (see below). It's actually a Bb minor maj7 chord (Bb-Db-F-A) but because of the inversion, the order in which Bernard Herrmann chooses to place the notes, you could also see it as a combination of a Bb minor triad (Bb-Db-D) and a Db augmented chord (Db-F-A). It gives it an ambivalent feel. This is playing with tonality. As a result, using all kinds of variations, Herrmann stays on this chord for several minutes, producing a (kind of) obsessive music.



In both cases (*Vertigo* and *Psycho*), this creates a static situation which, due to the length of a cue, becomes increasingly unstable. As the viewer/listener's longing to get out of that vortex intensifies, they experience a mounting suspense. If you want to create a certain tension (static with increasing instability), this kind of ambivalent chord or chord progression that turn in a circle can work well.
Playing with tonality entails a number of simple techniques for creating varying degrees of ambivalence in the harmony. Herrmann uses a completely dissonant chord (Eb-E-F-F#) for the famous shower murder in *Psycho*. He reduces the dissonance, though, by spreading the chord over a large number of octaves, allocating them to the various string sections (violins, violas, cellos and basses). The four notes are not, therefore, played in one octave, which creates a more ambivalent form of dissonance. The audience feels: 'This is really not a nice chord, but he hasn't just plonk four adjacent notes on the piano'.

A similar effect can be achieved by working with *bitonality*, in other words using two keys at the same time.[199] You can then determine the degree of dissonance this creates by using a specific combination of keys: C major and Db major, for example, only have two common notes (C and F), so this can generate a high degree of dissonance.

A combination of C major and Eb major results in three common notes (F, C and D) and is therefore less dissonant.

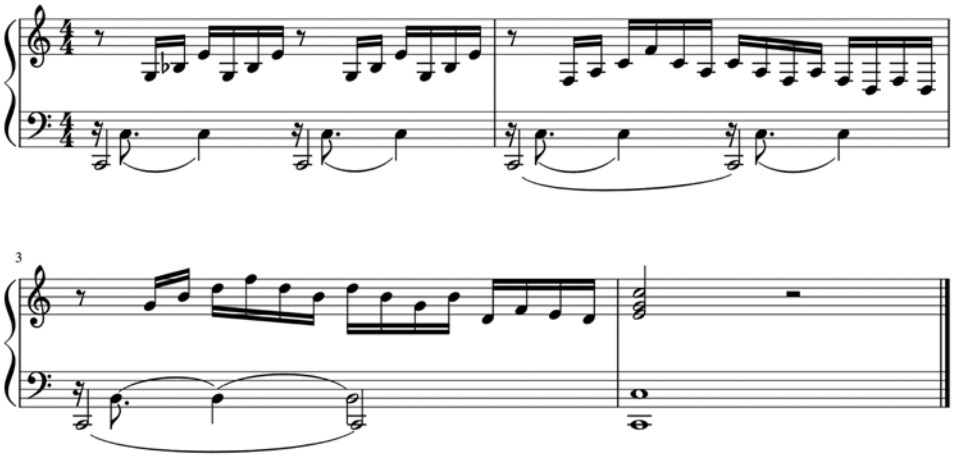
199 The composer Igor Stravinsky often used bitonality in his work, as in *Le Sacre Du Printemps*, where he combines an E chord with an Eb7 chord.

If you use two different keys in the same octave, that usually generates a hard form of dissonance. If you spread the keys over a number of octaves, it will still grate, but to a lesser degree and, again, you create a more ambivalent form of dissonance. In other words, the degree of dissonance is determined by the chosen combination of keys and by the distance between the two keys.

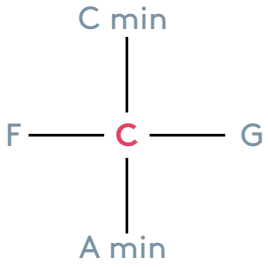
Atonality, which I mentioned earlier, and possible variations, such as Schoenberg's twelve-tone technique, or dodecaphony, described below, and the serial technique can be effectively deployed in scenes where you want to avoid providing any point of reference. These could be scenes and films where the core theme is mental instability, suspense of some kind and/or horror. The film composer Leonard Rosenman already used these technique in the 1955 film *The Cobweb*, so you could hear in the music what was happening in the characters' heads.[200] Schoenberg's twelve-tone technique and the serial technique are elaborations on atonality, using specific organisation systems. With the twelve-tone technique, an order of the twelve tones in the octave is established beforehand, which is then used and constantly applied throughout the entire composition. The serial technique uses a similar organisation of other elements of a note, such as the duration and tone colour. As a film composer, you are not obliged to apply these rules strictly; what matters, ultimately, is whether it works or not.

Another popular composition technique for film music is the use of the *pedal note*; the *organ point* or *pedal point*. This is a sustained note, generally in the bass, but sometimes in the higher registers, such as a sustained note in the first violins. You can lay all kinds of harmonic developments over it, including dissonant harmonies. that sustained note acts as a kind of 'harmonic anchor'. Such a note has a highly tonal effect and, in fact, keeps trying to bring the harmony back to its roots. Whether you yield or not gives the audience a sense of suspense of relief. As an example, in the final bars of a composition by Bach, you can see that the pedal note is a low C. The harmonic progression is C7 – F – G7 – C, where the B in the G7 chord in bar three doesn't really sound nice and, due to the continuously sustained C in the bass, is almost 'forced' to resolve to the final C chord.

200 The film *The Cobweb* is set in a psychiatric hospital.



Another tonality-related method that works well in film music is *modulation*, changing key. There are several ways of doing this: subtly, particularly if you want to retain the effect of the composition in relation to the visuals but don't want to emphasise any specific moment in the narrative, or expressly if there is a specific moment you would like to stress in the story, such as a twist. In the example below based on the key of C major, you can see the related keys to which you can modulate relatively easily.



You modulate to such a related key using a pivot chord, one that occurs in both keys. A chord scheme in which you begin in C and end in Amin, for instance, looks like this: C – F – G7 – C – Amin – Dmin – E7 – Amin. Of course, you can try out and apply many other options, depending on how subtly or emphatically you want to deploy that modulation.

playing with sound

Over the years, sound in the broadest sense of the word has become increasingly important in film music. The film composer Mark Isham on the role of sound in his creative process:

To me, it starts with the sonic vocabulary, to use the metaphor of the score. One of the beauties and challenges of modern composition is that it's limitless now. If you were writing a hundred years ago, you had a finite vocabulary of sound you could choose from. Well, with the advent of electronics and recorded music and everything else in the last hundred years, obviously that's been changing, and we reach a point now in this new century where it's totally infinite. The first step for me is to pare this down, because if I leave it wide open for myself, as I go, it's liable to just become chaotic. The sounds can so much dictate the type of composition that's going to evolve. The first sort of experimental phase to me is pinning down the sound of the movie. What sonic colors match the story, match the images, match the tempo, the cutting, match the characters, and fundamentally match the emotions of the film? Not to say this won't evolve, or that I'll not throw it out halfway through and start all over. This is a very positive first step for me that can involve just sitting down with five sound designers and saying, "Let's build a new vocabulary here," or sitting down with my orchestrators, and saying, "All right, let's not use a traditional orchestra, let's just write for ten violas and three basses." I just try to get an idea of what vocabulary is going to be needed. And that, for me, just will start the flow. It just always does. I've never found that to be an ineffective way of starting.[201]

If a composition, a musical structure, has to develop in time and it therefore takes time to create a certain suspense, then sound can bring this about more rapidly. Sound generally works immediately, as it can evoke all kinds of associations. Looking briefly at the cultural codes in chapter 1, there are familiar clichés, such as bagpipes, which immediately make it clear that we are in Scotland. You can also quickly set up an unstable situation by using high-pitched or highly dynamic sounds, for example. In instrumental film music it was, again, Herrmann who first recognised the importance of and started experimenting with sound, by abandoning the use the traditional symphony orchestra, for example. In *Citizen Kane*, he used a lot of low wind instruments, such as bass clarinets, contrabassoons and bass flutes. in *Psycho* he only

201 DesJardins 2006: 133

worked with strings and, in *Sisters* by the director Brian de Palma, he worked with two Moog synthesizers, horns, strings and a glockenspiel, for example.[202] Such combinations of instruments can create a highly individual sound world specific to one film. In principle, no instrumentation or sound world is too crazy, as long as it works for the story being told. For David Cronenberg's film *Crash*, the composer Howard Shore used a lot of electronically-modified guitars, harps and percussion, to give the film a cold, metallic atmosphere, in line with the theme.[203] The director Inarritu asked Antonio Sanchez to make a film score using drums alone for his film *Birdman*. The film *Paris Texas* gave the road movie genre a new sound world with acoustic slide guitar and accompanying guitar effects by Ry Cooder. In *Dunkirk*, for the rhythm of his film music Hans Zimmer uses noises related to military sounds, such as machine-gun fire, making the distinction between music and sound almost imperceptible. I could name dozens of film scores that all have their very own sound world; a world related to the story and the associated emotions and atmospheres. As a film composer you are therefore not limited to standard ensembles, instrumentations or instrumentation techniques. Anything goes, as long as it helps tell the story.

There are a number of ways to create stable and unstable situations. When it comes to sound, stability can best be created by working with standard instrumentations and instrumentation and production techniques, to create a musical situation familiar to audiences. The instruments are familiar, they are played in the usual manner and the mix gives a reasonably natural (sonic) image of the ensemble you have used: the instruments relate naturally to each other in the mix.

In addition to the strategies in chapter 1, you can work with electronic sounds generated with synthesis techniques, such as FM synthesis, physical modelling and granular synthesis, to create instability.[204] These techniques are frequently used in film music, as the source of such sounds impossible to deduce, so they offer no reference point. Unlike a note played on a violin, where everyone will recognise the sound source.

202 Herrmann regularly hit the roof during the recording sessions, as Moog synthesizers were far from stable and went out of tune all the time.

203 The film *Crash* is an adaptation of the novel of the same name by J.G. Ballard, about a group of people who get sexually excited by car crashes.

204 These synthesis techniques are explained in chapter 4.

If you want to work with instruments (or a combination of instruments and electronics), then the sound field music referred to in chapter 1 is an option. A sound field is a musical situation that is both harmonically and rhythmically static.[205] Most sound fields are highly dissonant, as they are built on not a regular scale but a chromatic scale: all twelve notes in the octave. If, in the sound field, those notes are very close together, this is known as a cluster. That close proximity makes it impossible to hear the notes individually and they merge into a total sound. Rhythmically, a sound field is generally characterised by long, sustained and/or repeated notes and recurring brief rhythmic patterns, emphasising that static character. In Ligeti's composition *Atmosphères*, the strings are entirely separated, with all the violins, violas, cellos and basses playing individual scores with varying dynamics. This is how Ligeti creates a cluster in which there are shifts, as some string players go from *pp* to *fff*, for example, while others go through the opposite motion, but there is no clear development, no vector. You can therefore use a sound field to create a static, unstable atmosphere, just what you need for suspense scenes, for example.

Another way of creating instability is to work with sound layers. You might have a number of musical elements of a composition played by different instruments or sound sources, for instance. A repeated chord originally played on the piano can then played by another type of synth sound or on an electronically-distorted vibraphone. The degree of alienation in the sound of this repeated chord can be adjusted in the final mix. If the piano remains the most recognisable, that gives the audience a certain reference point. If the synth and the distorted vibraphone determine the sound, there may still be a vague association with a piano, but there is less to grasp hold of.

You can move back and forth along the 'static – dynamic' dipole with sound by working with sound development. That can also encompass the total sound of the ensemble you have compiled. You can do this by thickening (adding parts, having parts played by several instruments, etc.) and thinning (removing parts, placing parts in other octaves to make them less present, allocating parts to other, 'thinner' instruments, etc.). With electronic music or electronic layers combined with instruments you can, for example, work with filtering, turning specific filters on and

205 de Ruiter 1993: 149

off, so the overtones emerge or disappear. The composer David Shire wrote a piano score for Francis Ford Coppola's film *The Conversation*, in which he gradually distorted the sound of the piano by filtering and sending the piano part through an ARP 2600 synthesizer. This illustrated the emotions developing in the head of the main character, Harry Call, over the course of the story. Another method for developing sound is *(sound) morphing*. You could compare this with modulation, changing key, in tonal music. Morphing entails the frequency spectrum of one sound transitioning to the spectrum of another sound. The speed and manner in which this happens can be programmed and adjusted using software, changing the parameters of one sound in such a way that the other sound appears.

When working with sound you can also make references to the sound design of the film. As far back as the 1950s, Pierre Schaeffer conducted the first experiments with *musique concrete* in film scores.[206] In 1963, for the film *The Birds*, the director Alfred Hitchcock used the mixtur-trautonium, a polyphonic electronic instrument designed by Friedrich Trautwein and Oskar Sala. Hitchcock asked Sala and Remi Gassmann to compose an 'electronic soundtrack', with electronically-generated bird sounds and ambiences mixed with real bird sounds.[207]

Depending on the film's desired sound world, for your composition you can use sound material the sound designer has recorded for their sound design, for example. A very literal example can be found in the opening scene of the film *Atonement*: the realistic sound of a typewriter heard at the beginning of the film becomes, at one point, a musical (and primarily rhythmic) element of the film music that begins later in the scene. Naturally, you can do something similar more subtly, by modifying the sound material before integrating it into your composition.

Finally, sound in the sense of how a music cue is produced and ultimately sounds, is a highly-determinant factor for the *impact* the music makes. Whether you use a solo cello, an electronic sound field, a hybrid ensemble of instruments and electronic sound or a symphony orchestra, the music must be 'full screen' and generate the desired impact.'

206 *Musique concrète* is a form of electronic music in which recordings of generally environmental sounds are used as sound material. You compose by assembling and modifying the sound material: sounds are repeated, played backwards, played at different speeds, etc.

207 Both feature in the film credits as 'electronic sound production and composition'.

Full screen' because that solo cello must be in proportion to the big screen in a cinema. A regular recording of a solo cello will not be usable for film music and there will often be major dynamic differences in the music and the acoustics of the concert hall in which the recording was made. A solo cello can have an impact in film music and be 'full-screen' when you get the feeling that your head is *inside* that cello, as it were. You can only achieve that by micing up the cello in a specific way and using certain forms of compression, for example. These are techniques that are used in pop music, too, in which there is often the most diverse collection of sound combinations, which produces a specific impact through mixing and mastering. While, in a classical setting, a symphony orchestra will be recorded with a limited number of microphones to capture the total sound, in a film music setting the same orchestra will have a number of separate recording sessions. The sections will be recorded individually in those sessions, so that they can be individually modified in the final mix.[208] Double basses, for example, are regularly thickened with samples, so they are also picked up by the subwoofer in a 5.1 playback system, to ensure the music has the necessary impact in that layer.

playing with rhythm

You can use rhythm to create both stable and unstable situations. A regular rhythm, combined with a simple consonant harmony, can add stability and therefore calm to a scene. Continually-changing rhythmic patterns and/or complex polyrhythm[209] with all kinds of syncopation[210] and varying time signatures will produce a rhythm that is entirely unpredictable, creating an unstable situation.

You can also use an *ostinato* to bring some degree of instability to a scene. As I already mentioned, an ostinato is a recurring brief musical motif.[211] In that sense, it corresponds with the musical cell we discussed

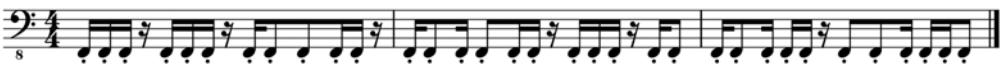
208 This is known as *striping*: recording the various sections (instrument groups) individually.

209 *Polyrhythm* refers to using various rhythms at the same time or such a rhythm that it can be heard in various different ways.

210 *Syncopation* is rhythm where one or more notes do not fall on the beat or pulse, shifting one or more normal accents. Syncopation is used in music to shift accents to somewhere other than the usual or expected position.

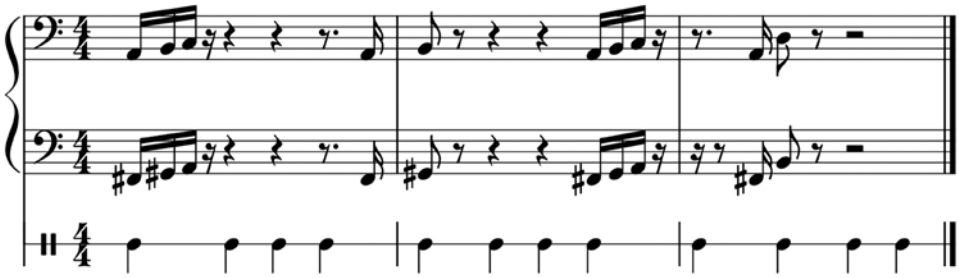
211 The term *ostinato* is derived from the Italian, meaning obstinate. A meaning that clearly corresponds with the effect of an ostinato in a composition: the motif simply continues repeating whatever else happens.

earlier. While the musical cell is, generally, a short musical motif (or a combination of motifs) played by all the instruments, though, an ostinato is often a motif played by just one or a couple of instruments; the other instruments don't participate in the ostinato. There are also various different types of ostinato. Some consistently have the same rhythm and pitch, some remain constant only in terms of rhythm and others only in terms of pitch. Most ostinatos are played in the lower octaves (bass guitar or double bass, for example) but higher pitches are also, certainly, feasible. The effect of an ostinato in a piece of music can be compared with the effect of the pedal tone we discussed earlier. If the ostinato consists of a chord and remains the same, it can soon produce a tonic effect, as it then starts functioning as a (kind of) pedal tone. If the ostinato consists of just a single note, then the tonic effect will be less, as there is then no direct harmony seeking resolution. One example of such an ostinato can be found in Ennio Morricone's music for the film *The Untouchables*.



The musical figure above is played on a bass guitar. The three bars differ slightly in rhythm, but together form a motif that is repeated every three bars. The pitch remains constant, but percussive instruments enhance the specific accents in the ostinato while wind instruments play a dissonant harmonic phrase, which is increasingly thickened as the strings enter. The scene featuring this music is known as *Waiting at the border*: a small group of policemen, led by Elliot Ness, is waiting at the border between Canada and the USA for an illegal alcohol transport. The essence of this scene is the waiting, the passage of time and the associated mounting suspense. The audience is watching with them, aware that something is about to happen, but whether that will turn out to be positive or negative for our heroes is entirely unclear. Morricone adds meaning to these two narrative aspects with the above musical elements. The audience experiences the continually recurring bass pattern, the bass ostinato, as 'waiting': a static situation. The increasingly intense dissonant harmony is experienced as mounting tension: a dynamic situation. The combination of the two produces an unstable situation, inevitably culminating in the moment 'it' happens.

Morricone uses an even simpler ostinato in the same film in, for example, the opening music, in which he adds a snare-drum to each beat of a 4/4 time signature. There are no accent differences, each beat is equally loud, making it the simplest ostinato you can imagine. Over those beats he then lays rhythmic accents with the piano and other instruments, in the manner below, for instance.



The whole thing creates the feeling of a kind of military operation, with the snare-drum beats acting almost like gunshots.

Another way of creating ostinatos is the use of *series*. The film composer Lalo Schifrin uses the Fibonacci series, for example, which begins with 0 and 1, after which each successive element of the series is the sum of the two previous elements. The first few elements in the series are therefore: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55. You can use those numbers for the number of times you repeat a rhythmic motif. This formula means the numbers in the series have a certain relationship, rather than being unrelated, arbitrary repetitions. Naturally, you can use other types of series for this.[212]

Yet another way of creating seemingly irregular rhythms is to work with *hemiolas*. A hemiola is created when, in the notation of a specific time signature (4/4, for example), another, unrelated time signature (5/4, for example) is notated. If you 'count' it, you get the following rhythm:

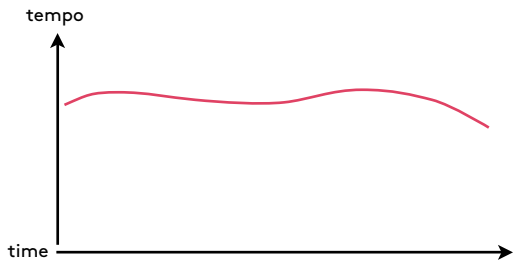
| ONE two three four | one TWO three four | one two THREE four | one two three FOUR | etc.

212 Schifrin 2011: 37

Such hemiolas create syncopation. You can also combine various hemiolas, which again, for the audience, produces an unpredictable rhythm, although it still has a certain degree of internal consistency.

It's therefore possible to determine the extent of (in)stability by the degree to which you deploy and/or combine the above methods. This is in addition to the methods discussed in the paragraph on tonality and sound.

One final comment with regard to rhythm concerns the *tempo* of a cue. Working with DAWs and sequencers can easily tempt you to use one single tempo in a cue. In many cases, this is no problem. Often, however, it is desirable to add more 'breath' to the tempo, or a tempo may be needed that moves along slightly more with the tempo of the scene in question. Naturally, you can programme accelerations and decelerations in the DAW/sequencer.[213] One way is to play in a basic track for the cue yourself, while watching the scene, directly incorporating the tempo of the scene into the music you are creating. In fact, you are responding on the basis of the emotion you experience at that moment, as the viewer. You can do this on any instrument, as long as you can later distil a click track from your basic track.[214] That click track constitutes the tempo basis for the final cue and can even be used as a click track for the conductor, when the finalised cue is being produced using a symphony orchestra or other type of acoustic ensemble. The progress of the tempo and the associated click track can look like this, for example:



bar	tempo
1	120.3
2	121.0
3	121.5
4	122.0
5	122.0
6	122.0
7	122.3
8	121.9
9	121.8
10	121.5
11	121.0
12	120.6
13	120.5
14	120.1
15	119.7
16	119.4
17	119.4
18	119.6
19	120.2
20	120.7
etc.	etc.

213 The traditional terms in music theory are *accelerando* (acceleration) and *rallentando* (deceleration).

214 A *click track* is actually an electronically-generated metronome that can therefore set all kinds of tempo variation, unlike a traditional metronome that can only set one tempo at a time.

playing with silence

As I already mentioned earlier in this book, the use of *silence* can be highly effective; working with silences gives rein to the audience's imagination, rather than getting the music to tell them what is happening. There are innumerable examples of the use of silence in music history, with John Cage's composition 4'33'' as the most extreme example: four minutes and thirty-three seconds of silence. Silence is deployed at various levels in film. At the level of the sound track, there are well-known examples on the 'static – dynamic' dipole, where all elements of the sound track fade out during a scene leaving just one significant sound element. I already mentioned an example of such a dynamic sound track: the Do Lung Bridge scene from the film *Apocalypse Now*. In this scene, slowly but surely, all the sounds disappear from the sound track, while we still see flashes of light and suchlike, eventually leaving the lone voice of the Vietcong fighter calling out. When it comes to film music, as a composer you can insert silences where the scene in question dictates, or if another element of the sound track comes better into its own in that silence. This can draw extra attention to a certain line in a dialogue or a specific sound effect. Silence in your music can be real silence, when the music stops altogether. Alternatively, silence can be musical silence if it is part of the composition. If, for example, the music contains a particular rhythm, a pulse, that pulse will appear to continue for some time after the music has fallen silent. In terms of tonality, too, after a harmonic development that isn't quite completed, you will give the impression that the development continues briefly in the silence. Finally, employing silence in your compositions is highly efficient from a purely pragmatic viewpoint: you get on more quickly.

playing with time

In chapter 1, we saw how the sound track can influence the perception of time. This is useful information for you as a composer. From time to time, a director will ask you to help them with a specific scene. There may be a scene that is dragging, because it is actually too long and progressing too slowly, but it contains a number of dialogues that are simply necessary for providing essential information. The director and editor have tried everything in the editing and now they are asking you to see whether you can use music (and/or sound) to influence the

perception of the scene to make the audience unaware, or less aware, that it is dragging. The solution is not to add very rapid or busy music, which might be your initial response, but to do the opposite: add slow, clearly-structured music with the minimum of information to the scene, as referred to in chapter 1.

playing with clichés

For most film genres, we can identify a number of characteristics of the associated film music and it's easy to get bogged down in clichés when describing both. On one hand, we want to avoid clichés in our work as far as possible but, on the other hand, those clichés have proven themselves; otherwise they would never have become clichés. So let's look at a number, but from the perspective of the dipole model, which gives a broader spectrum of possible musical interpretations.

For scenes and films that can be typified as 'feel-good' you will chiefly be in the stable and static quadrant. That quadrant can be musically interpreted with, for example, simple and reasonably-predictable harmony and rhythm, clear and transparent sound use (so no dark, sinister sound layers) and, possibly, a calming melody without any large intervals. As opposed to the suspense, horror and action genre, where instability is combined with the static-dynamic dipole. In musical terms this is often expressed in chase music with rapid, alternating tempos with complex rhythms and changes of time signature, with all kinds of dissonant and/or complex harmony, with little or no melody but more use (and repetition) of motifs and musical cells, with sounds that are difficult to recognise and define and with extreme inversions. For drama, in which the characters' emotions individually and in their interactions often rise to great heights, the music will be more in the stable domain, combined with the static-dynamic dipole. This can be expressed in a melody with large intervals, for instance, and sometimes a compelling harmony, but also in minimal notes for a solo instrument, little rhythm and, generally, no electronic sounds but the express deployment of acoustic, recognisable instruments.

As I mentioned, it's easy to get stuck in clichés when composing film music. Here, too, as when working with existing material, it's important to

thoroughly analyse why a specific musical cliché works in a specific scene: which musical elements play a major role and which are less important? You are also playing with the audience's expectations: on one hand you want to fulfil their expectations, so the audience is not 'shocked' by your film music, but you don't want to get stuck in clichés and, as a film composer, you are always seeking your own voice within the functionality expected of film music. That dilemma touches on the question, 'What is the secret of good notes?', which was the subject of a documentary series on Dutch television. The answer given by Louis Andriessen in the documentary is that 'wrong notes are actually the right notes'. In other words: you have to first confirm a film music cliché and then attempt to explode it by taking a number of surprising steps within that cliché. The cliché (read: functionality) should still be present and functional, but assume a surprising form as a result of a number of 'wrong notes'.

elaborating to the visuals

There is always a moment in the process when, as composer, you see the film as a whole for the first time. Frequently, this will be a few days after shooting has finished, once the editor has made a rough cut based on the screenplay. It may, alternatively, happen further along in the post-production stage, depending on the agreements that have been made.[215] This 'first time' can be a great source of information for not only you as the composer but also the editor and director, as you will generally be the first person to see the film in its entirety. It's therefore important to somehow note what you experience while watching the film for the first time.[216] What you should note is any emotions you experience, but also such conclusions as: 'I don't really understand what this scene is about' and 'This scene lasts far too long, in my opinion'. After all, this 'first time' will be the only 'first time': every other time after that you will be watching as a composer and no longer as a neutral observer. All your conclusions and emotions are therefore a source of information for the editor and director. You, yourself, will gain more insight into the possibilities and limitations for music in the film. Editor and sound designer Walter Murch already makes such notes while watching the dailies,[217] or rushes:

215 An editor may not be able to start editing until later in the shooting, so there will be no rough cut immediately after shooting.

216 These rough cuts generally still have a visible time code, so you can always make notes including that code, such as "37'40'' = I don't know what's happening here.

217 The footage shot during the day's filming.

I write down whatever occurs to me about what I see on the screen. And that text appears in the left-hand column of my database. These are the emotional responses: How does the shot make me feel when I see it for the first time? Are there any associations? If, say, the image of a banana occurs to me for some reason. I write "banana", even if I have no idea why. Maybe later I'll find out the reason – but at the moment I don't question any of these things. I try to remain completely open to whatever is going through my mind.[218]

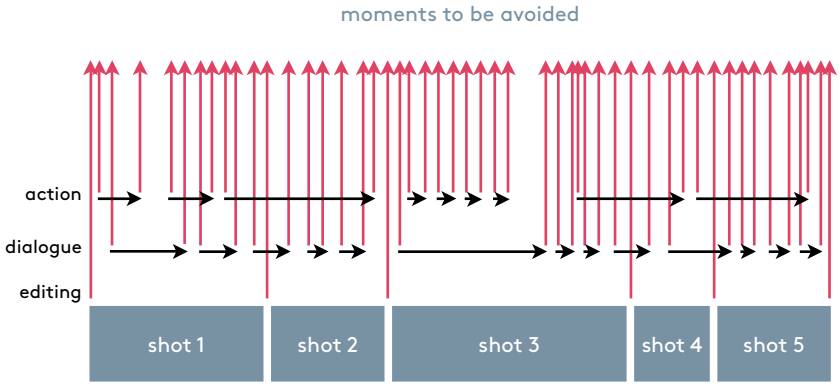
The moment you actually start 'attaching' a composition to a scene and are keen to elaborate on that composition specifically in relation to that scene, a number of issues come into play. Music has a structure with, naturally, a beginning and an end but often also recognisable, structuring elements such as a musical meter and a musical phrase (often made up of several bars), but also elements at micro level, such as a motif. In a composition we, naturally, recognise the beginning and the end, but during the course of the composition we will recognise structures, such as the beginning and/or end of a B section, or the beginning and/or end of a modulation, or a change of rhythm. In what one might refer to as regular western music, you can even recognise the structure at bar level. To put it simply: everyone 'feels' where the first beat in the bar is.

All these recognisable 'points' in a composition can be important when placing the music in relation to the picture. One of the effects of music on visuals is that the start and end points of a composition emphasis what can be seen at that moment; a piece of music beginning when a certain event takes place in shot lends extra emphasis to that event. A man stands still for a while and then suddenly starts walking. If music begins at the moment he starts walking, then that walking gains more significance: an expectation is raised; evidently something is about to happen. Consequently, the start and end points of a piece of music for a scene have to be carefully determined, as they generate meaning in conjunction with the image, like it or not. You generally want to avoid the start of the music emphasising the image. One possible solution is to allow the music to begin with one single note, serving as a kind of fade-in, making it difficult or impossible to deduce the exact moment the music starts. The same applies to the end of a composition. Often, dialogue or another sound is used to mask the beginning of the music and to prevent the audience lending significance to a specific moment

218 Ondaatje 2002: 44

in a scene. The music just has to be there at some point, without the audience pinpointing exactly where it starts or ends.

If you do want a clear start and/or end point, you need to look carefully at where that start or end point can be placed. The illustration below shows an imaginary scene with both visual and auditory events. Visually, the scene is a montage of a number of shots. In general, no music will be started or ended on a transition between shots, as this emphasises the editing, an aspect that is best not emphasised, as we want to create the impression that film is a continuous medium.[219] In the figure below, the start and end times of actions are also indicated, as they will be seen in the various shots (starting and stopping walking, for example, in the representation designated as 'action'). These are often moments you will not want to emphasise with music. The same applies to the beginning and end of a dialogue. All in all, therefore, a scene is full of moments that are unsuitable for the start or finish of music. At first glance, it might appear simple to find start and end moments for music in a scene, but the number of possibilities is limited and demands serious consideration in order to avoid generating any undesired effects.



As we have seen, a piece of music generally has not only start and end points but also recognisable internal changes in the musical structure that can generate meaning when they coincide with a particular event in the visual track, such as a montage moment or the beginning of an action, for example.

219 One exception to this approach can be a horror film, in which you do actually want to place a musical emphasis on montage moments (such as when the corpse falls out of the cupboard) to give the audience an even bigger fright.

Strong accents in the music or the beginning of a modulation, for example. The moments in the figure on the other page that should be avoided when placing the music include not only the start and end moments but also those internal structural moments in the music, which makes placing even more complicated.

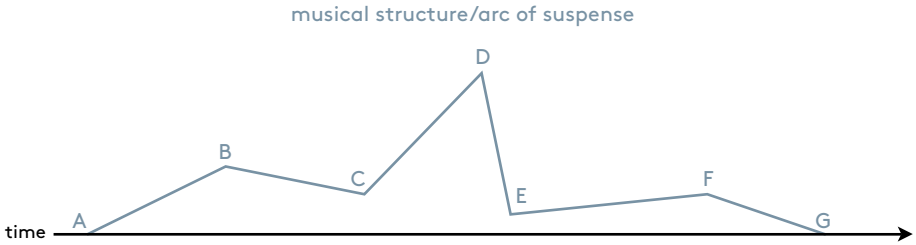
In addition to these more technical considerations there are, naturally, the purely content-related considerations in the choice of where to start and end music in a scene, regarding the structures of the narrative (the dramatic codes from chapter 1) and the emotional codes. Where the latter is concerned, the recurring question is where exactly the music should be placed: prior to an emotional scene, over an emotional scene or once its' finished? There are no fixed rules, as factors such as genre, the dramatic concept and the acting level play a major role in such decisions. Although, in many standard films and series, a decision is made to put the music over an emotional scene, this approach can feel like manipulation and it goes against the approach where the audience also participates in constructing the story and the associated emotions. 'Prior to' such a scene can be effective, but it will also frequently detract from the possible emotional impact of the scene, as the viewer is prepared for what comes next. Music at the end of the scene can fulfil a specific function, as Walter Murch describes with regard to a scene from *The Godfather*:

> The gun hits the ground, and then the music finally comes in. It's a classic example for me of the correct use of music, which is as a collector and channeler of previously created emotion, rather than the device that creates the emotion. Music in The Godfather is almost always used in this way. I think in the long run this approach generates emotions that are truer because they come out of your direct contact with the scene itself, and your own feelings about the scene – not feelings dictated by a certain kind of music. The Godfather is a good film to study for its use of music. Most movies use music the way athletes use steroids. There's no question that you can induce a certain emotion with music – just like steroids build up muscle. It gives you an edge, it gives you a speed, but it's unhealthy for the organism in the long run.[220]

Once you have clearly concretised a composition based on a musical idea, it's handy to clarify those contours and, if the construction is

220 Ondaatje 2002: 122

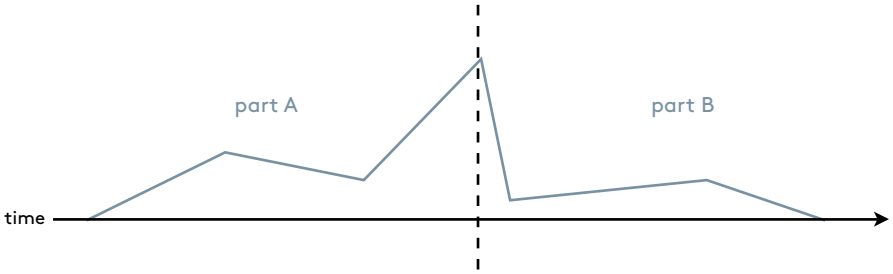
complex, make a visual representation of it. Outlining the desired arc of suspense in the music can provide insight into where any climaxes are located and how they interrelate. An arc of suspense might look like this:



There have to be a number of climaxes in the music, so it's wise to first compose the biggest climax based on the musical idea and work back from there, simply thinning out the climax, for example. You can then be sure of achieving the above arc of suspense. Beginner (film) composers often make the error of 'starting at the beginning' and then getting stuck halfway through the mounting arc of suspense, as they have no idea how to further enhance the impact of their composition.

If you're 'working back' from a climax, remember that you also have freedom in the first few bars of your music (from A to B), because the ultimate musical structure doesn't yet have to be clear in the intro. If, from B to D, you use a 4/4 time signature, for example, you can see the A-B part as an intro for that time signature, which leaves you a degree of freedom, as you don't yet need to be clear that you will ultimately be working in 4/4. You can start exactly at point A and organise the A-B intro so that, exactly at B, you start the definitive musical structure, which then also become clear to the audience. Looking back, you can conclude that A-B was, for example, in 13/16 but that didn't bother anyone because the later reference frame (4/4) was not yet in place.

To achieve a musical structure or arc of suspense such as this, you may have to do more than just 'thin out' the highest climax. The scene may call for two distinct parts (part A and part B), which are related but clearly produce different effects in terms of emotion and the progress of the story, for instance.



You can make such a transition relatively simply by introducing the musical material from part B in part A. The musical building blocks of part B could, for example, be (part of) the bass line in part A. All musical elements of part A fall away at the climax, save that bass line, which then offers new possibilities to build up a distinctive composition in part B. The composition as a whole (A plus B) will be musically consistent, even though there are clearly two parts that fulfil different functions in terms of emotions and narrative. Such a transition can also help in relinquishing the pulse, for example. Film music often has a clear pulse to propel the story onwards, so film composers are frequently confronted with the problem of getting rid of that pulse when the scene in question dictates. With the above method (which is actually a composition method) it's essential not to use any of the rhythmic elements from part A in part B. That prevents the pulse continuing, while the whole section nevertheless remains musically consistent.

A musical structure or arc of suspense as outlined above can also be deployed during *cross-cutting* or *parallel editing*. With this editing method, two (or sometimes more) story lines taking place simultaneously are cross cut. These are often contrary story lines in terms of action and emotions. One famous cross-cut is the final sequence in *The Godfather*, in which scenes from a village party are alternated with images of violent slayings. While the main character Michael Corleone rejects Satan during his son's baptism, his Mafia clan is busy murdering rival Mafiosi on his orders. There is a huge contrast between the two scenes: the innocence of the baby and the ruthlessness of his father. The choice you have to make as a composer in such cross-cutting is always a tough one. Do you decide one of the two story lines is the main one and continue the accompanying music during the scenes of the other?

Do you decide not to add any music at all and allow the sound track to make a hard switch from one sound to the other, in sync with the editing? Or do you opt for a continuous composition, working with the above composition methods to keep creating transitions in sync with the visual montage? Such an approach is certainly not impossible but it is awkward and demands close cooperation with the editor so the editing can be modified, if necessary, to fit the (transitions in the) composition. In *The Godfather*, the decision was to use organ music that is apparently playing during the baptismal ceremony. The music continues during the murders, but pauses as Michael Corleone gives his responses.

Another consideration that has to be made when elaborating 'to picture' is the volume of the film music in relation to the other elements of the sound track. One scene may contain a lot of dialogue, for instance, in addition to a specific ambience (such as an industrial background) and sound effects, where the aim of the music is to provide a static form of suspense. If you are aware of all this beforehand, you know you have to allow for it in the composition process. In such a situation, the music will probably be at a relatively low level in the final mix, although it still has to generate the required suspense. So it's wise to play back at a relatively low level while composing. In practice, you will find that much of the musical detail is unnecessary, as it will be lost. You may also have to turn up the lower frequencies in the mix of the finalised composition because they, too, will be lost more quickly when listening at a lower level.[221] Naturally, it works best when you are already in possession of the 'information' from the other elements of the sound track: a working copy with not just the dialogue but also any sound design available at that point (in the form of ambiences and sound effects) along with the visuals, in the ratios in which they will probably feature in the final mix. This gives you, as the composer, a good overview of the elements you need to relate to in the sound track. Otherwise, you will need to estimate and/or consult with the sound designer on what will be happening in the specific scenes in terms of sound, in addition to the dialogue.

The choice of media on which the production will ultimately be released also plays a role in the above considerations. Chapters 2, 3 and 4 are based on a film to be shown in the cinema and on TV, which requires relatively good sound reproduction with the necessary dynamic space

221 If you deliver your music in stems, this is not really necessary, as the level can then always be adjusted in the final mix of the sound track as a whole.

and (often) surround sound. It's a whole different story, of course, if the film is being made specifically for online applications and will primarily be watched on smartphones and tablets. Knowledge of the proposed media for which the film is intended is important for the way you watch the film during the composition process. Many film composers who are just starting out invest first, logically, in audio and music equipment and then work with a QuickTime film on their laptop or PC, for example. If the film is to be screened in the cinema, however, this can lead to major errors of judgement. A (relatively) big screen often reveals details that are not seen in a QuickTime film. Those details frequently contain important information that can change the perception of and focus in a scene, which affects the required functionality of the associated composition. It's therefore important for the composer to see and experience the visual track in an appropriate manner.

information and branding

As we already established in chapter 1, music for documentaries will chiefly be static in terms of the dipole model. As a result, the composer has little or no need to allow for twists and developments in the narrative. There will be little incidence of musical structures and arcs of suspense as described in the previous paragraph. That does not, incidentally, mean that composing music for a documentary is easier; you still have to find just 'the right tone'. This will have more to do with creating a specific atmosphere, though.

In branding, music is used in numerous ways. In this paragraph I will restrict myself to an advertising campaign with one or more commercials. Composing music for branding generally entails quite a different design process. The compositions are often short (30 seconds), based on an extensive briefing, including (pieces of) temp track. You are therefore presented with a strict reference frame within which to manoeuvre and you will be expected to deliver rapidly.[222]

222 Also see the paragraphs on *information* and *branding* in chapter 5.

the ‘big’ composition

In addition to music for each scene, something you might refer to as the ‘big’ composition emerges during the process. As we established earlier, you can try out a musical idea on various scenes while you’re sketching. This can help provide possible answers to the question: ‘Which music fits best with which scene?’ It can also help you progress with concept forming for the entire film when you discover, for example, that a piece of music can be used for several scenes. The narrative and the associated emotions become clearer as you forge links in that narrative. A good example of this is the way the score for *The Social Network* came about. Trent Reznor and Atticus Ross had sent some sixteen musical ideas to the director, David Fincher. Number ten was the ‘solo piano with an underlying drone’ that I discussed earlier. Fincher thought this music was eminently suitable as the title music and, from that idea, there developed a concept in which that music recurs at a number of crucial point in the film, but each time with a different piano sound, making the whole thing sound increasingly like something from the past. The third and last version is with a piano that sounds a long way off, in a big space, like a recollection of the former friendship between the two main characters.

So you see it’s possible to find a concept for the entire film by working on the basis of the material. The final music score for the whole film evolves as a result of various forms of interaction between you, the editor, the sound designer and the director. So, again, you can see the total music score (the succession of music cues throughout the film) as the ‘big’ composition. At that macro level, too, there will be repetition and variation, for example: a music cue occurs a number of times, sometimes as a literal repetition, sometimes as a variation. It’s also good to bear in mind that, in general, a film doesn’t need many themes, as it’s actually the repetition and variation that clarify and enhance the narrative.

In the illustration below, you see a fictional example of a film including a number of variations of music cue A, plus music cues B and C.

Once you have completed all the cues, that is the moment you can look at the film as a whole, with all the cues appearing as you have placed them in the film in consultation with the other disciplines. You might then come to the conclusion that the three cues A'', A''' and A are too close together and that A''' should actually become B', or that all three have to be taken out simply because there is too much music in that moment. These are conclusions you can only reach with any foundation once you have distanced yourself far enough for them to serve as 'validation'.[223] Often, unfortunately, there isn't sufficient time for that validation. You generally need all the time up to the deadline just to get everything finished. In practice, you often find that, near to the end of the composition process, you have had enough of the film and the music for the moment and don't feel like watching the film again for the umpteenth time. Nonetheless, it's highly advisable to validate your work regularly during the design process, even if the deadline is breathing down your neck. The English composer and sound designer Dan Jones describes working scene by scene, working on the big composition and validating as follows:

The film composer, on any film, is doing two jobs. When you are worrying about the details, the b flats and d flats and c sharps and violas and cor anglais, it's a challenge, for me certainly, to assess how the music is working with the film. You can feel that you are doing the best work of your life, working in the details, getting the right rhythms and harmonies. But the real test is sitting down and watching that sequence in context, and seeing that you got in too deep and were just getting excited about something where you couldn't see the wood from the trees. I'm totally signed up to the review process. Sometimes it feels like a slog if you've got a ninety-five minute film. How can you watch it every day and should you watch it every day? The thing is when you do watch it every day, that's when you get the most useful instruction about what you really need to do rather than what you thought you needed to do. My solution is to have a complete separate room, where I have a computer to play back the film. But I can't fiddle around and change things, so I literally have to face the music and confront what has been done. I have a notebook and pencil with me. It's all about watching it in real time. I always try and submit to the music as it stands on a continuous play, from right at the beginning of the film to the end credits. That's the only way you can know if you are getting the really important things right.[224]

223 The initial validation was about approving or rejecting a musical idea. This is about your own evaluation, your validation of the music score for the entire film.

224 Power 2018: 58

Here, Dan Jones aptly describes how he forces himself to look at and listen to the 'big' composition by going and sitting in a different room where he can only watch and listen. One problem is that there can only really be a correct validation of the music once all the elements of the sound track are in place. This validation therefore generally occurs during the final mix. To avoid that as far as possible, the temp mixes mentioned earlier are important, as all those involved would like to get an (initial) idea of the possible end result earlier in the process, so they can take that back as input for the rest of their own design process.

getting stuck

At some point during the design process you may get stuck. You may notice, for example, that you are unable to elaborate successfully on a certain musical idea and get it right. Or you may have doubts about your concept, your underlying idea, so you're not sure where to go from there. Getting stuck is intrinsic to the design process and all creators or designers encounter the phenomenon. You will frequently find that you're in the flow. The risk of that is that you may go on too long and, at some point, grind to a halt anyway. So the question is: 'When do you stop?' It's advisable to stop at a point when it's clear where you go from there. The temptation to forge ahead is then often greatest, but the insight you've gained ('Ah… now I know what to do with this composition!') is an incentive to start work again the following day. One added advantage is that you then have some distance from that fantastic musical idea and automatically check to make sure it actually was all that fantastic. Being in the flow is therefore something to strive for, but it's wise to stop at the right moment. The composer Louis Andriessen says this:

Sometimes, things can actually be going too well. That's because, when it's going well, composing is an emotional occupation. Even Kees van Baaren, the strictest and coolest composer I've ever known, testified to that immediately. Emotion can be a dangerous compass. As soon as you get the feeling you're getting carried away you have to stop and concentrate on something else: make a cup of coffee, do some skipping or go to the shops and then come back to your desk cool and calculating. The wonderful music I composed at night when I was twenty turned out to be banal the next morning. 'Squirrel on a long road,' is what the writer Simon Carmiggelt found on the

piece of paper to which he had entrusted his most profound thoughts once night.[225,226]

It can sometimes be useful to arrange your own 'crisis'. Searching, collecting and sketching gets you in the right mood and gives you plenty of ideas. You then have to proceed to the next step. At some point you feel the deadline and the associated schedule breathing down your neck and you can often use that pressure to force yourself to go ahead and make a choice: 'I'm going to go in that direction, I'll tackle it like this'.[227] Making such a choice also enables you to put aside all the rest of the stuff you've found, collected and sketched. The knowledge and insight you gained on the way is sure to come in handy further on in the process, but it's no longer holding you up. Louis Andriessen:

The advantage of venturing as far as possible into the labyrinth is that you greatly increase your options and the benefit of that is the restrictions you ultimately impose on yourself are well-founded and not the result of slackness or laziness.[228]

You may also get stuck as a result of feedback from the director, who has rejected a specific music cue for a scene, for example. The best solution to such a situation is, naturally, to enter into a discussion to find out why, exactly, they rejected the music. This is actually similar to analysing why a temp track works for a scene, but in this case the question is why the music doesn't work.[229] If, for some reason, you can't sort this out with the director, then the problem remains on your shoulders and you find yourself with feedback that doesn't give you any direction for a possible solution. To get out of being 'stuck' like this, sometimes the best thing to do is take a step back, which may provide you with more insight into the underlying problem, which is best identified with the director. Another possible solution is to just 'get on with it'.

225 Simon Carmiggelt was a well-known Dutch 20th-century journalist, writer and poet.

226 Schönberger 1981: 25

227 Experience teaches you that, over the years, you get better at feeling that moment arrive; you get better at knowing when you 'really' have to begin, in order to make the deadline.

228 Schönberger 1981: 29

229 The core of this problem is often that the director and the composer don't 'see' the same scene. This is generally due to discrepancies in relation to the scene in the screenplay, where the director had a certain image in mind and the ultimate realisation of that scene doesn't correspond with that image. Directors then seek a last ditch solution for the problem in the sound track and then chiefly in the music.

Necessity is the mother of invention. Give yourself the time to play and jam again, preferably with methods you haven't used yet; it may generate new (musical) ideas. If you normally compose on the piano, then use another method for creating music.[230] You can go one step further and deliberately get yourself stuck in a musical situation that you then have to get out of. The producer Speedy J often 'traps' himself while making new tracks by 'blind-patching analogue synths, confronting himself with the most peculiar musical set-ups, with which he then has to make music. This prevents him from falling back on his favourite kick drum, as he has to go through all kinds of (musical) contortions to get something like a kick drum.

You may also run dry because you have lost sight of the original concept and no new or modified concept has replaced it. Then it's a good idea to experiment and go off at a tangent, but if that fails to generate any new insight or ideas you can easily get lost. You find yourself feeling, 'I have no idea where to go from here… How on earth did I get into this situation?' In which case, it may be a good idea to look at the original concept again and go back to it.

One final way of dealing with 'getting stuck' is to go back to the basic work that always has to be done for composing (or sound design). I call it 'odd jobbing'. The more crafting aspect of elaborating on the idea, writing scores, etc. You're still busily productive, but then in a way that demands discipline rather than creative effort: just getting on with what has to be done. So you don't waste any time and you're still working on your material, but then more as a craftsman. This creates the space in your head needed for new insight and ideas, so you can get on with the job.

home stretch

Somewhere along the line in the design process there comes a moment when the major decisions have to be made with regard to where the music is placed. You can then start working on the final form and detailing of your cues. A number of important aspects have already been discussed in the paragraph on 'playing with sound'. In this paragraph, I delve deeper into a number of aspects of (music) production that can

230 If you still want to use the piano, then set yourself the rule that you can only 'misuse' it, so you can't play it in the usual way, but try and get different kinds of sounds, rhythms and melodies by playing it differently or modifying it (prepared piano).

now come into play, assuming that, so far, you've been working with mock-ups and you're now going to partially or entirely replace them or supplement them with real instruments.

the benefits and drawbacks of mock-ups

The benefits of working with mock-ups are clear. The current quality of the technology involved (sample libraries, physical modelling, etc.), in particular, means you can make mock-ups that sound really good and are (to an inexperienced audience) frequently indistinguishable from the real thing. There are often drawbacks to working with mock-ups, though. The use of technology may have resulting in you building such a 'massive sound' that it's impossible to recreate with an acoustic ensemble or symphony orchestra. A horn section from a sample library may already have been produced in such a way that, to achieve the same impact, you need ten real horns rather than the standard four you've hired for the recording session. Rhythm can also cause problems: in your sequencer, you can accurately determine the timing of a number of string players so that, together, they play really tightly, generating the required rhythmic impact. When it comes to complex rhythms, though, this can pose problems for real players; you have to wait and see how capable they are of forming a good rhythm section.

One possible solution to (excessively) big differences between the mock-up and the version with real instruments is to blend the 'real' version with or (partially) replace it with the mock-up. In the paragraph on 'playing with sound', I already mentioned that double basses can sometimes be thickened with samples. You can actually do something similar with all instruments, in terms of sound. When it comes to rhythm, it will be easier to use library samples. This is on the condition that the instruments you want to replace have been recorded as far apart as possible, so pulling them back or muting them has as little effect as possible on the other instruments you recorded.

An even better solution, of course, is to prevent the problem by working with samples libraries and/or synthesis models that sound as realistic as possible (and have not already been given a 'Hollywood sound'), so your mock-up will be a relatively realistic representation of the musical

reality. That way, while you are composing, you already have a more realistic idea of the ultimate music, so you can still intervene in your composition. It may be that some elements of your mock-up already sound so realistic that there is no need to replace them with real instruments. That produces a hybrid version: a combination of sampled and real instruments. If you've already decided beforehand that few or no real instruments can be used, then of course there is no reason not to pull out all the stops when it comes to sampled and synthesised instruments, bearing in mind the (familiar) criterion that it has to 'work'.[231]

Yet another option is to work with an orchestrator, who is given your mock-up plus the MIDI tracks from your sequencer. Based on the mix and the sound of your mock-up he can make an assessment of the sound required and modify the score generated by sequencer parts with doubling, alternative instrumentation and so forth. He can also make sure there is a good, workable score for the conductor and good, workable parts for the musicians. From that point of view, an experienced orchestrator can prevent a lot of problems and you can also ask them to follow the score during recording sessions and make sure all the parts are being played correctly. That way, you can keep yourself focused on the 'big picture'. This does, of course, entail considerable costs, so you need to consider whether it's worth the money. The question is whether you, yourself, are capable of producing a good, correct orchestration and the necessary scores and parts on the basis of your mock-up.

click track

Whenever the image and music need to be strictly synced and (part of) your score has to be played by musicians, it's wise to work with a click track. I already mentioned an organic way of generating a click track in the paragraph on 'playing with rhythm'. You can, of course, generate a click track with a sequencer. That can be handy if there are a lot of sync points with the visuals in a music cue, as in chase music, which is always in the unstable domain, characterised by changes in time signature and complex rhythms with a lot of syncopation, and which frequently has to be synchronised with the visuals. The click track is therefore the track the conductor (if there is one) of the orchestra or ensemble uses to remain synchronised with the picture. Most musicians in such

231 Due to limited financial resources, for example.

an orchestra or ensemble like to hear the click track themselves, with the headphones on just one ear. That way, they hear not only the click track but also the acoustic sound of their instrument and those of their colleagues. The musicians can adjust the volume of their own click track, to find a balance between the click track and the acoustic instruments. One potential risk is the possibility of the click track bleeding into the recording during quiet passages. The headphones should be isolated enough to prevent the sound escaping, but there are always musicians who like to have the click track up high in their headphones, which can result in bleeding. In the final mix of a music cue, the sound technician will therefore always mute those instruments that are not playing in certain parts on the mixing desk.

stems

Most audiovisual productions (and certainly films) are produced in surround, so as a composer you will always deliver your music for the final mix in layers, or stems. Even in the case of a simple stereo mix, you will still be asked for stems, enabling intervention in the music during the final mix. How you 'distribute' your music over the stems will vary from production to production. With a traditional symphony orchestra, the logical thing to do is divide it up according to the traditional instrument groups.[232] This will involve *striping*, which I already mentioned earlier, isolating the various instrument groups to avoid bleeding between them. With other types of ensemble and combinations with electronic layers and/or rhythm tracks, you should agree with the sound designer or re-recording mixer how the various instruments and/or sounds are distributed amongst the stems. You can also discuss whether you should deliver the reverb for each stem separately, for example. The film composer Henry Jackman and the publicist Stephan Eicke on striping in such a situation:

> If it's a contemporary score with minimal brass and mostly textural, then it makes total sense to pick up the stuff separately because the way the mix is going to work, the score is going to be more like a record and less like a classical, symphonic mix. As soon as something is textural, it makes complete sense to pick up everything in a more individualistic way. Then you have complete control over what you want to do.[233]

232 First violins, second violins, violas, cellos, etc.

233 Eicke 2019: 120

This approach also allows for more freedom after the recording takes place and therefore for improvisation. The strings can be distorted, the electronics can be amplified, the guitar can be taken out. The possibilities for production tricks are endless. They stimulate the composer's creativity in the second phase of music-making, after the recording sessions took place.[234]

It's always a good idea to deliver a stereo mix of your music cues as a reference frame, which says, in fact: 'The idea is that my music sounds like what you hear in this stereo mix'. If the joint design process proceeds as planned, everything has already been tried out in temp mixes and you are now actually delivering the finalised music. In reality, however, things are often different, so there may still be changes to the music during the final mix, such as removing stems from a music cue, using one or more stems in a different place in the film and lowering the level of the music to such a degree that numerous stems are now barely audible. If you have the impression that changes like this may still be, then make sure you're there for the final mix. Not with the intention of digging in your heels as the aggrieved composer, but so you can come up with suggestions for how your music can better contribute to the story being told.

234 Eicke 2019: 120 – 121


sound


is inescapable

the sounddesigner's design process

introduction

Here, too, I am using the context of the feature film; any relevant other contexts and their implications for the design process are explored in chapter 5. When discussing the sound department in chapter 2, we already saw that the term sound designer can be interpreted in various ways, depending on the part of the world and the associated film culture. Walter Murch on the original idea behind the term 'sound designer':

That was the Zoetrope[235] dream at the beginning – the whole concept of what turned into the sound designer in the Zoetrope sense – which is a director of photography for sound. Somebody who took on the responsibility of 'auralizing' the sound for the film and making definitive, creative decisions about it.[236]

In the European context, the sound designer is someone who manages the creative side of designing the sound track and may either delegate a number of tasks, such as dialogue editing and final mixing, or carry them out themself. This choice is partly determined by the budget, but it can also be influenced by the vulnerability of the film and/or the director.[237] A vulnerable film is, for example, a film where the director's concept is so personal that it's essential to work with a small crew to

235 Zoetrope was the film production company set up in 1969 by Francis Ford Coppola and George Lucas.

236 Kenny 1998: 12

237 Remember, too, the familiar '*quality – time – budget*' triangle. 'If you want 'quality', then you have to have sufficient 'time' or 'budget'. If there isn't much 'time', then there has to be sufficient 'budget' for hiring in assistants, for example If there isn't much 'budget', then there has to be sufficient 'time' to allow you to work on the production in between other, well-paid assignments, for instance.

minimise the risk of other interpretations of the concept. A vulnerable director may have difficulty dealing with a crew, in any event, and would therefore prefer to work with a sound designer who assumes all the tasks.

The above definition of the sound designer does require some qualification, as you might interpret the sound designer as the composer's 'boss'. Like the dialogue editor and the Foley artist, for instance, the composer would then deliver their material to the sound designer, who would make the final choices with regard to deployment of that material. In practice, though, there is no such hierarchy and the deployment of the musical material occurs in consultation, based on the criterion: 'What works best for the story we want to tell?' In that sense, there is a clear distinction between a dialogue editor and a composer. The dialogue editor supplies material that is intended to gain meaning in the context in which it is placed: the associated footage and the remaining sound in the scene in question. The same applies to the composer, but the context for their material is first and foremost musical: the compositions have to be right from a musical perspective if they are to perform a function in the context of the film. It's because of that musical context that the composer's position in relation to the sound designer differs from that of the dialogue editor or Foley artist.

As we saw in chapter 2, the term *supervising sound editor* is often used. In the European context, this person is therefore also responsible for all the organisational and logistics aspects of the sound design process in addition to the content. A logical combination, but for more complex productions it may be wise to separate the two. Sound designer Erik Griekspoor:

The supervising sound editor is also often the sound designer. This has recently become a topic of discussion, as we have noticed that the two can't really be combined. You have to communicate a lot, so you will get calls every two minutes, especially if time is of the essence, and meanwhile you're still working on the content, as sound designer. The pitfall here is that you will soon be tempted to 'just do it yourself' when you get something in that you're not satisfied with. That might be efficient, but it doesn't benefit the collaboration.[238]

238 Griekspoor 2019

Sound designer Randy Thom elaborates on Zoetrope and Murch's idea for the term 'sound designer' into the following definition:

> This someone, they thought, would brainstorm with the director and writer in pre-production to integrate sound into the story on the page. During shooting that person would make sure that the recording and playing-back of sound on the set was given the important status it deserves, and not treated as a low-priority, which is always the temptation in the heat of trying to make the daily quota of shots. In post-production that person would continue the fabrication and collection of sounds begun in pre-production, and would work with other sound professionals (composers, editors, mixers), and the director and editor to give the film's soundtrack a coherent and well-coordinated feeling.[239]

This definition corresponds with the desired practice as described in this book. Numerous factors help determine the actual practical role of the sound designer. It's advisable to involve a sound designer in the process as far back as the screenplay stage but, in practice, that may not actually happen. A producer and/or editor and/or screenwriter will simply not think about this or may be unwilling to devote any budget to it. A sound designer can develop a concept for the sound track in collaboration with the editor at the pre-production stage, but this, too, is more the exception than the rule. One constant is that the sound designer is expected to have an overview and act as the creative manager for the sound track as a whole. I also apply this principle in the coming paragraphs, in which I will discuss the possible tasks of a sound designer based, as in the previous chapters, on a feature film of the authors' cinema genre, with relatively plenty of time for experimentation, exchange of material and consultation between the various disciplines.

concept development

According to the above definition, a sound designer will already be involved in the process at the screenplay stage. An essential moment, as they have to develop a vision and concept for the sound track as a whole and the first, initial ideas can be sparked by reading (a rough version of) the screenplay. Think back to the composer's questions concerning concept development: 'What is the theme of the film? How is the story constructed? What can the sound track add to and bring about in that

239 Thom 1999

story? How does this film sound?' At a later stage, those questions become more specific: 'What are the key scenes? How are we going to realise them in the sound track? Based chiefly on dialogue, or sound design, or music?' and so forth. In answering these questions, you can refer to the dipole model in chapter 1. Which scenes contain a clear development, for instance, and how does that affect the sound track? How do we use the sound track to create a feeling of instability in that scene?

One good example of initial idea and concept forming based on the screenplay can be found in the collaboration between the sound designer Ren Klyce and the director David Fincher for the film *Se7en*:

Klyce contends that his creative process begins when he reads the script. Consider the first scene in Detective Somerset's (Morgan Freeman) apartment, which occurs about three minutes into Se7en. Somerset lies in bed, staring off, exhausted. He can't help but notice the noise from outside: an argument, a barking dog, a car alarm and a garbage truck. He puts his reading glasses down and reaches over to a side table to tap the arm of a metronome. It begins to sway, back and forth, with a soothing, rhythmic tick that grows in volume until it dominates the sound track. We cut between Somerset and the metronome until the sequence ends on a tight close-up of the metronome.

The film's original screenplay by Andrew Kevin Walker included several 'sound moments', including this one. Klyce recalls, 'Andrew wrote a general thing like "the world that Somerset lives in is noisy; to meditate himself out of it he uses the metronome." So I read that and thought "what is Somerset hearing?" Klyce's first conversations with Fincher solidified a general direction for the sound track: 'David is very specific. What he wanted was this grittiness and this oppressive sadness in the sound. People were impoverished, not getting along, arguing, dissatisfied with their lives. That's a tall request.'[240]

Klyce then designed a sound world around the two main characters, the detectives Somerset and Mills (Brad Pitt), which was named 'sad sound'. The further nameless city in the film was given a 'face' by creating a sound environment with aggressive traffic noise, quarrels between neighbours in the apartment blocks, sirens, squeaking metal gates and doors, etc.[241] This detailed a concept that had already emerged during the screenplay stage.

240 Wright 2013: 146

241 Recordings were made of conversations and rows between neighbours in apartment buildings.

There is also a certain pressure to develop an (initial) concept for the sound track at the screenplay and/or pre-production stage. You need a concept to decide what kinds of sound (in addition to dialogue) to record during the production stage.[242] This can also determine the way you work at the post-production stage.[243] In the initial stages, however, there is little or no opportunity to test the concept with sound material against the picture, as the footage simply doesn't yet exist. You will therefore need to have discussions with the director and the screenwriter to arrive at a shared concept. Sound designer Nicolas Becker works with a kind of 'sound bible':

I work with the script, and then I spend time with the director to define the artistic approach. I'm doing a list of notes from the script, and I try to rank them from the more to the less important. From this list I write a kind of sound bible. If I have the green lights from the director, I give this bible to the sound team with the schedule we have defined with the picture editor and the post-production supervisor. Depending on budget and schedule we try to do the most we can on the list.[244]

The *soundboard* mentioned in chapter 2 is another way of concretising a concept. Remember that such a soundboard is not yet standard in the industry, so if you want to work with one you will have to initiate it yourself. In the example of *Se7en*, you could make a soundboard for the world in which Somerset lives (and even specifically for that scene with the metronome). You can initially do that by using sound and sample libraries and/or sounds you have recorded and processed yourself, but you can also demonstrate examples from other films. Anything goes, as long as the soundboard helps fuel the discussion between the disciplines and helps them arrive at a concept. One way of getting ideas for such a soundboard is to go through your 'sound collection' with the scene or the film at the back of your mind. Randy Thom, sound designer for David Lynch's film *Wild at Heart*, for example, has this to say:

I did what I often do as a way to start working on such a sequence. I just started listening to sounds, more or less randomly, with the general theme of the sequence in mind. Not looking at specific categories of sounds, just randomly clicking through this rather large sound effects library that we have at Skywalker Sound, where I work. And what happens when I do that is

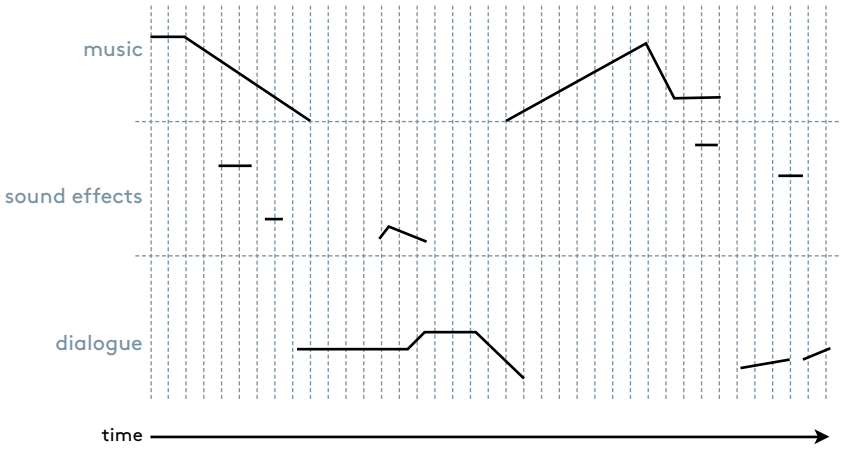
242 This could be specific sounds at a location, or vehicles used in a scene, for example.

243 A concept such as 'sad sound', as in the film *Se7en*, can mean that extra sound effect editors need to be employed in post-production.

244 Albrechtsen 2012

inevitably I hear sounds that give me ideas that I wouldn't have had if I had gone about things in a more logical way. You might say I was influenced by John Cage. Maybe I was. I certainly use a certain kind of chance operation to begin these sequences.[245]

Alternatively, you can produce an (initial) *graphic score* for the intended sound track, based on the screenplay and discussions you have had. One simple example is the figure below, in which, in this case for a scene, the levels of the three familiar categories of the sound track are shown against time.



There are plenty of other possible variations on the graphic score and the best thing to do is devise your own form, which you can adapt to each film. Possible parameters include the intensity per scene, the presence of and mutual relationships between the various elements of the sound track for each scene and the dynamics in those various elements. Those elements might result from the standard breakdown of the sound track – dialogue, music and other sound – making a more precise categorisation, particularly for 'other sound'. Completely different breakdowns are also possible and this will have to be determined individually for each film.[246] The criterion is that the chosen classification provides insight into the structure of the sound track, which can come in handy during the final mix of the film, in which the 'big arc' of the sound track is created as a whole.

245 Thom 2011: 109

246 A horror film and a psychological relationship drama with a lot of dialogue will demand quite different breakdowns.

All in all, the concept-forming at those initial stages of a production is important for the sound designer, as it will determine many of the future decisions for fleshing out the production in terms of both content and organisation. Concept-forming for the composer is, in some respects, easier; the interaction between concept and material and the possible modification of the concept on the basis of the material is simpler. After all, everything is done by one person, whereas the sound designer is collaborating with other disciplines, such as the sound recordist on set and possibly a dialogue editor, and they all have to work on the basis of the concept the sound designer has developed. So the concept has to be well considered and discussed with the director, the screenwriter and (possibly) the editor. Assuming that parts of the work will be outsourced in post-production to a Foley artist or a dialogue editor, for instance, you also need a good description of the concept, possibly accompanied by one or more soundboards and a graphic score.

The collaboration by the South Korean film director Bong Joon-Ho with the audio post-production company Live Tone is a nice example of the above. Sound designer Choi from Live Tone on the collaboration with Bong during the screenplay stage of the film *The Host*: [247]

I received the script from Director Bong Joon-ho in early January 2005. After reading it, my response was "What the hell!!" It is a story about a monster, as a creation of the director's imagination, that lives with us in our daily life in the contemporary world. Such a setting causes a problem – how the fictional sound of a monster can be mixed with the sound of our daily contemporary world. First of all, I had to consider how the realistic sound of the Han River, the sewages and the city as the background can be mixed with the fictional sound of the monster. In order to deal with this issue, we produced many test sounds. We also referred to the pre-production design graphics, photos and continuity cuts of the monster in order to set out the sound concept of the film. [...] In May 2005, before beginning filming, we tried such test versions of the monster's sound over the animatrix images that were made for setting out the concept of filming. Then the director and I concluded that the sound concept of Alien or Godzilla would not suit this project. It means that we need to create something totally new from scratch without any guidance. Due to the various factors of the filming environments, we agreed that we couldn't rely on the location sound recordings so much and

247 *The Host* is a South Korean horror film.

planned to record most of the dialogues as ADR in the post-production process...In early January 2006, we held a meeting over a draft edit and agreed that 80% of the dialogue should be recorded as ADR and the sound of the monster should be confirmed by late February.[248]

In the collaboration with Bong, Live Tone uses a film sound map: a text document describing the sound concept for the film, plus all the resulting technological, logistic, organisational and financial consequences.[249] An extensive and highly-detailed document, the content of which is used to share the sound concept with the various relevant disciplines. A concept description, plus perhaps a couple of soundboards and a graphic score as described in the previous paragraphs, can considered a (simple version of a) film sound map. Sound designer Choi on the use of his film sound map in *The Host*:

In the process of pre-production, we make efforts to share the sound concept beforehand and discuss how the production sound recording (or location sound recording) should be done at the filming sites. In order to realise the sound design, which the filmmaker wants to direct, we discuss the concept for the production design, the camera angles and the continuity design etc. to consider at the filming sites. To location recording engineers, we also provide the technical guidelines which they can refer to for location recording in the sets and filming locations. In the process of productions, the post-sound team refers to the agreed sound list for the sound they would need in the post-production sound design. Then they visit the filming locations (or sets) to record the group walla sound, the Foley sound which can only be recorded on the filming sites, or the gun tail sound of the space in gunshot scones.[250]

This way of working is a good example of the principle described by Randy Thom: 'The craft of sound influencing other crafts from an early stage'. The film sound map is an example of a finely-detailed, described and established concept. Such detailing is also needed for big, complex films such as *The Host*. Generally, when working out your sound design concept, you have to avoid already setting everything out in detail. Where possible, it's good to leave room for experimenting with material, which can result in new insight. It may not always be necessary to fix

248 Lee, Stringer 2018: 151 – 152

249 Topics such as schedules and costs for Foley, ADR, premixes and delivering in various formats, including Dolby Atmos.

250 Lee, Stringer 2018: 153

detailed descriptions of all the characters back at the initial stage of production. They may not be needed until the post-production stage, when the Foley artist has to make the footsteps, for example. Often, the concept initially revolves around a number of design principles or themes that can function as a framework for sound recordings while filming. Particular microphone techniques for recording dialogue and capturing specific location sounds, for instance. A film sound map is then a very good way of establishing a concept and the ensuing consequences. One good example is the way Han Otten works.

Over the past few years, as a composer I've regularly supervised the sound track as a whole. I use an Excel file to collect together all the auditory information and decide which approach (music, sound, dialogue) is most suitable for each scene. It doesn't work if we (composer, sound designer) each approach a scene individually, as we will both attempt to make it into a holistic entity. I understand that this is a unique approach. If that does happen, it's always done by the sound designer.[251]

The fleshing out and degree of detailing of a film sound map will vary greatly, depending on the type of film, the budget and the schedule. Ultimately, the concept is an 'intellectual exercise', as already described in the composer's design process, and it's advisable to start working with concrete material as soon as possible. Experimenting with material is the best way to try out and improve the concept. Sound designer Arnoud Traa on the impact of the sound design for a specific scene on the entire film and the associated concept:

I'd made the final scene because it was one of the most important. In the viewing of this scene the director said he thought it had turned out fantastically. Great, because I'd put a lot of time into it. Then, the penny suddenly dropped for him (and for me). 'Hang on, though, then the music in the preceding scenes will come out and be replaced by this sound, etc., etc.' My sound design for the final scene suddenly had consequences for the rest and for the idea for the film.[252]

In the same way, errors in the process and/or the material that has been created can result in revision of the concept or the idea. One of the

251 Otten 2011

252 Traa 2019

actors having a speech impediment might, for example, could prompt a discussion on whether to adapt the original sound concept. Working concretely with the material means you can also have (more) concrete discussions with the other disciplines involved, as the sound designer Steve Fanagan testifies:

I find that when I actually start to present work, rather than talk about what I'd like to do, I try and cut something, because often what you're trying to do and how you express it verbally can be quite challenging. The best thing to do, if you have an idea for someone, is to play it to them, and let it evolve from there. And so you get into subjective conversations, like, 'oh this needs to be deader' or 'let's try and do something with a bit more life', and you get into those terms. You start trying to figure out what that person's meaning of that term might be.[253]

This harks back to 'getting going and sketching' as described for the composer. 'Standing back and validating' is a far more complex activity when it comes to sound design. You are dependent on the 'supportive disciplines', such as dialogue editing, and the point at which they deliver specific elements of the sound track. 'Standing back and validating' is actually only possible after a temp mix in which those elements come together.

methods

In principle, there are two distinct ways of working in the post-production stage of the sound design process: *sequential/parallel* and *non-sequential*. If, as sound designer, you are already responsible for all the elements, with a sequential method you will first do the dialogue editing, then the Foley and so forth. All the elements are dealt with one after another, in sequence: sequential. If the various tasks are outsourced then the dialogue editor, the Foley artist, etc. work at the same time, parallel with one another. This is still a sequential method from the perspective of the individual editor (you work on your part from the beginning to the end of the film), but from a broader perspective this is a parallel method: all the editors are simultaneously working on their own part of the sound track. The advantage of working like this is that you, as editor, can ensure consistent layers throughout the film and, where

253 Johnston 2016: 164

necessary, add a development into a sound layer.[254] What's more, such a way of working can be well planned: based on experience with dialogue editing, you can generally make a good estimate of the time needed.

What is missing in this method is the context (the sound track as a whole) of the sound layer on which you are working. While you are editing the dialogues, the Foley artist is busy with the Foley and you generally have no insight into or access to each other's work. There will often be a joint viewing at the beginning of the process, though, attended by all the disciplines, at which agreements are made. This is the time to discuss the sound design and make agreements regarding collaboration. The latter is often difficult, as it touches on the contradiction we encountered in chapter 2: on one hand, as composer or sound engineer, you need all the time available to do your job properly and, on the other, you will also have to spend time on the interaction and collaboration with the other disciplines working on the sound track. What's more, often, not all the disciplines will be available at exactly the same time, so the Foley artist may start three weeks later than the dialogue editor, for example.

With a non-sequential method, you will start working on the *entire* sound track for a particular sequence in the film. So, within that sequence, you switch between the various sound layers, which enables you to continuously assess and modify those sound layers cohesively (in context, in other words). This produces a final result, based on which you approach the other sequences of the film. Naturally, for this initial sequence, it's advisable to take a key scene or the final scene from the film, to which all the other scenes have to relate.[255] The advantage of this method is the increased artistic freedom, as you are doing everything in context. You can really assess whether a dialogue requires specific editing, as you are hearing that dialogue in relation to the other elements of the sound track. You also have the opportunity to experiment and try out various approaches, something that is not possible with a sequential/parallel method. This non-sequential method is, in practice, only applicable when there is one sole sound designer responsible for all the tasks, or a small team that can interact and collaborate with each other in real time throughout a specific period.

254 A Dutch sound designer was responsible for all the explosions in the film *The Matrix*, for example, which allowed him to give the explosions more impact in the course of the story.

255 If you know, for instance, that the scene or sequence in question constitutes the climax to the film, then that can have implications for the complexity and impact of the sound track and you can work towards it in the preceding scenes.

Sound designer Bart Jilesen talks about his experiences with both methods when working on the documentary *Auld Lang Syne*:

This had a liberating effect. The North American design method is made for working efficiently. The aim is to complete the design in the time given. You do one task after another, which gives you control as you know where you are in the process and, consequently, whether you are ahead or behind schedule. This sequential method reduces the complexity in those parts of the whole that are simpler to solve. You keep walking up and down alongside the design you're making. This method could also be called reductionist.

The non-sequential working method could be called holistic, as you are unable to see the elements of the design individually. Together, they form the whole that is more than the sum of the parts. You can only embrace the parts once you experience them in context. Consequently, you don't walk alongside your design, you walk around it. There is more room for experimentation, so this method offers greater artistic freedom.

Splitting the film into chapters showed there was less need to see tasks such as dialogue editing as separate from the other tasks and it was possible to create each chapter more artistically, paying more attention to content and narrative. Surprisingly enough, it didn't take appreciably longer than I had budgeted for with the sequential method. You work in smaller, delineated parts, so the complexity of each part is more limited than when you have to do everything in a part, such as dialogue editing, in a montage.[256]

Depending on the complexity of the film, the story being told and the film style, you can choose between the two methods or combine them. Every film has its own complexity and demands a specific approach. If you, as sound designer, are doing everything yourself, it's easier to combine the two methods, working sequentially on the dialogues, for example, and then tackling a number of key scenes non-sequentially. From that point of view, sound designer Nicolas Becker sees every film as a new project for which you have to devise a fitting design process:

I don't have a particular sound design philosophy but I think each film should be taken as a prototype, fitting the entire sound process to each film. Working with conceptual artists was and still is very important for me in my approach.

256 Jilesen 2016: 21

For them the artwork itself is not the only target, building a process, designing a trajectory that makes sense with the meaning and the artistic field of the artwork is their main concern. In the movie business the way the budgets are made, and the way the films are made is very industrialized; very normalized.[257]

Becker justifiably argues for a fitting design process for each film but also concludes that things are different in practice. In the last paragraph of chapter 2, I already established that the entire film production process is actually still based on the old linear way of working, regardless of what film is being made. So it's important to design a specific process for each film that offers the most perspective for an artistically-satisfying result.

Regardless of which method you use, it's also important for you (and any other editors involved) to set up a clear, overseeable organisation and administration. Unlike the composer, as sound designer you will quickly be dealing with dozens (if not hundreds) of tracks in your DAW, so you need to be able to see at a glance which tracks are dialogue tracks and which version you are working in at that moment.

searching and collecting

Like the composer, the sound designer may go through a stage at which sound effects and ambiences are collected. This is done generally during shooting or at the beginning of the post-production stage, but sometimes at the screenplay or pre-production stage. At first, these will be existing sounds and ambiences from libraries and past projects. It's handy to collect all those sounds in a database, where possible giving them a name that refers to particular events, locations or characters in the film. This enables you to easily find sounds you want to combine and process to arrive at the desired effect or the desired ambience.

You can also supplement your database with sounds recorded during shooting or those you have recorded or created yourself with the screenplay, images, scenes or the film as a whole at the back of your mind. Sounds and ambiences that, for you, have something to do with the film and evoke the emotion you are looking for. Sound designer Michel Schöpping on collecting:

257 Albrechtsen 2012

I already start collecting at the screenplay stage. I make music-like or sound design-like things or I collect existing music to get an idea of what kind of emotional value the film should have. I'm generally on set, too, not as boom operator but collecting. And to 'feel' how scenes evolve.[258]

getting going and sketching

Regardless of whether you are working sequentially or non-sequentially, at some point you will have to 'get going' and start concretely creating sounds in addition to your more specific and crafting tasks such as dialogue editing. Traditionally, dialogue editing is the first step in the sound design process, but sound designer Klas Dykhoff uses another method that corresponds with the method of and the collaboration between the sound designer and the editor as set out in chapter 2:

Traditionally I would start sound editing by sorting out the dialogue. The dialogue track is the foundation of the sound track, and it's always nice to be able to schedule ADR and Foley at an early stage. As dialogue editing is the most intricate part of sound editing, it's also the most difficult part to change when scenes are recut. Therefore I found that it's better to start from the opposite end, designing backgrounds and sound effects. I play around with spot effects for recurring events, such as doors, automobiles and guns, and I also start designing the different backgrounds and distinctive sounds for events and characters. Long dialogue scenes are more or less ignored at this point, except for some experiments with atmospheres.[259]

If the visual editing is undergoing major changes, then it's more sensible to start designing sound effects and ambiences, by *playing and experimenting* with a number of specific sounds from the aforementioned database. That playing and experimenting is a form of 'getting going' and consists of processing and blending the sounds by pitching, stretching, reversing and filtering them. In short: anything you can deploy in the way of processing techniques. Director David Lynch on experimentation:

Through experimentation you can very rapidly find a lot of things that don't work. So that points you in this direction, and you go there for a while, and find that's not working. So you go in another direction and see if that works.

258 Schöpping 2011

259 Dykhoff 2016: 58

And by this experimentation you suddenly zero in on something that's now really talking to you. And that opens up a certain avenue and you go down there. More and more you start understanding what's working and what's not working [...] But I like accidents, too. So you create situations where you can have sound collisions, places where sounds come together unexpectedly, and see what happens. Ninety-nine percent of it could be, you know, baloney, but you might come across one magical thing that leads you into another direction, and that might be the thing you're looking for. Sometimes when you're in doubt or you don't have an idea, creating accidents can break through to some place where you want to be.[260]

Analogous with the composer's design process, at this stage you shouldn't work in sync with the picture all the time; let go of the picture for a moment and leave room for experimentation. That way you can really concentrate on designing the sound: 'How does it sound? Is that what I want to hear? Are the ratios between the various elements in the sound okay?' and so forth. The risk of a design process continually running in sync with the picture is that you deprive yourself of the liberty to make interesting discoveries. You will probably be more occupied with the degree of synchronisation between image and sound than with the sound itself. It's important to allow yourself the time to experiment and research. That means you have to initially trust your intuition, just like the composer, who is also creating their first musical ideas on the basis of associations, discussions and all kinds of other impressions with regard to the film. It's generally not possible to explain why a certain sound or ambience fits with that film, but that's not important at this stage. What is important is that you trust your intuition and 'get going' by choosing and creating material. Sound designer Scott Sanders's way of working illustrates the above:

After the spotting session Sanders collects the sounds he will need for a particular effect by selecting elements from an effect library or recording original elements in the field. Once he has a palette of sounds with which to work, Sanders begins experimenting. Using a Pro Tools workstation and an array of plug-ins, Sanders will refine an effect by adjusting pitch, tempo, reverb and equalisation. He will modify the length of a track, combine one element with various other tracks and add low-end sweeteners to dramatic effects such as gunshots. What is interesting about Sanders' process is that he does

260 Lynch 1998: 50

not always work with picture. During the design process, Sanders will use the image as a reference point, but will perform the bulk of his work without a visual reference. After he is satisfied with a particular effect he will marry it with the picture to match for sync.[261]

This anecdote from Walter Murch illustrates the fact that such a method was already in use in the analogue era:

Frank Warner, the sound editor, goes through a similar state in the preparation of his work. He's retired now, but he did Raging Bull, Close Encounters and many other films. He would take one of the reel-to-reel tapes from his huge library and put it on almost at random and move it with his fingers. He'd just move it manually, at various speeds, backwards and forwards across the playback head. Meanwhile, he'd have a film recorder turned on, capturing all these random noises. If you were a mouse at the door listening to what he was doing, it would sound completely crazy. But he was in the darkness, letting the breeze blow through his brain, waiting for the kernel of an idea that would emerge, fragments of unique sounds upon which he could build everything else. That's where the punches in Raging Bull came from, and the sound of the flash bulbs. He'll never tell what they are, but it's something that came from just bumping the tape around, probably some completely different sound that had nothing to do with a punch or a flash. Then at the end of the film he destroys everything. He has a ritual fire and he burns it all – not the original library of course, but this sub-library of sounds he's created especially for each film. He doesn't want anyone, including himself, ever to use these sounds again; they were born of the moment, true to the moment, and it would debase them if they were to be used again.[262]

That throwing away the work you did for a specific film at the end of the process is recommended for any sound designer. It might sound drastic, but that way you force yourself to keep innovating and not fall back on earlier work.

Yet another way to 'get going' is to start with what seems the most difficult scene, the one you actually have no idea how to tackle. As sound designer Arnoud Traa describes it:

261 Wright 2013: 151

262 March 1998: 101 – 102

I usually begin with a tough scene. I have to do something to get myself going that will inform the rest of my work. I have to be able to go back to it, too, which I often do. 'What exactly am I doing here? Does this still work?'[263]

Once you've done such a scene, you'll notice that work on the other scenes goes more rapidly, because you have a reference frame to fall back on.

creating and processing material

If you stick to the above method, you will first start working with *sound effects & ambiences*. Once the visual editing has made some progress and is starting to take a more solid form, you can start with the *dialogues* (including any ADR) and the *Foley*. As I mentioned, depending on the film style, the budget and the schedule, the sound designer may do all of this themself or outsource (a number of parts of) it. When outsourcing, the sound design concept is, again, important and you will have to indicate for the dialogue for each character how that character sounds. In the following paragraphs I describe a number of design methods and strategies for those elements (regardless of whether you do them yourself or delegate them).

sound effects and ambiences

Depending on the story you're telling and the style of the film, you need specific sound effects and ambiences and there are various ways of acquiring them. You can work with Foley techniques, such as those described in the next paragraph. There are also innumerable online sound effect libraries and you can process or blend their sounds to arrive at the sound you're looking for.[264] Another way is to record sounds or ambiences on location and then process or blend them with other sounds, if necessary. Some may come in handy in post-production, as the sound designer Frank Serafine describes in the below quote on his work for the film *The Hunt for Red October*:

Sound designer John Fasal and I would take underwater air tools and go to supervising sound editor Cecelia Hall's house to record sounds in her pool. I'd swim around for the torpedo, and then I'd jump into the pool and record

263 Traa 2019

264 The best-known free library is https://freesound.org/

the water from the outside and then underwater on two separate tracks. So you've got all the airy and splashing sounds outside the pool and all the underwater sounds recorded with the oil can mikes.[265]

For these kinds of recording you can also use techniques from the music industry, as sound designer Nicolas Becker explains:

That's one of my favourite parts of work. I spend a lot of time on real locations to record sounds and I have a special setup of mics to record ambiences which permit me to go from a very "classic movie sound" to something much more immersive and close to what you hear in real life. In the movie business most of the people used to record ambiences or fx with the same mic they use for the boom. Working with music is very interesting because the recording culture is much more open and it's easier to experiment with new mics or preamps and transpose the results for the movie world of sound.[266]

Sound designers often make use of the sound of living organisms, particularly animals. From a sonic viewpoint, they are highly detailed and layered, as they are produced by a living body that has no static parameters but is a dynamic entity with organs, muscles, cavities, water, etc. What's more, people have primary responses to *animal vocalisations*:

A recent UCLA study has indeed determined that animal vocalisations in film soundtracks influence audience emotions. This is because humans and other vertebrates are biologically predisposed to respond to harsh, unpredictable and non-linear noises emitted by the natural world. Such noises, according to this study, are likely to provoke fear and unease in audiences precisely because these 'real world' sounds trigger human emotions on a primal level.[267]

Logically, such sounds are used to create new living creatures. Sound designer Gary Rydstrom describes his sound design for the dinosaurs in the film *Jurassic Park*:

I have a theory that, especially these days with visual effects getting so crazy and bizarre with stuff you could never see in real life, that using real-life sounds – real animals that we subliminally recognize, grounds the sounds.

265 LoBrutto 1994: 224

266 Albrechtsen 2012

267 Wilkins 2014: 76

You believe that that's really a creature. But if you do your job right and you layer it and do other tricks to the sounds, you can make it sound like an animal that you've never heard before.[268]

The roaring of a lion, for instance, will regularly be added to the screeching tyre sound of a car taking off, to make the aggressiveness of that car more tangible.

In addition to the use of animal vocalisations, there are numerous *sampling and synthesis techniques* that can be deployed to create sound effects and ambiences. *Subtractive* and *additive synthesis*, for example. With the former, the sound of one or more oscillators, which are generally rich in harmonics, is filtered.This type of filtering subtracts partials from the audio signal. And then an envelope generator is often used to generate a sound sequence. Additive synthesis entails adding rather than subtracting.

Another well-known synthesis technique is *frequency modulation (FM)*, where the frequency of an oscillator or other sound source (the carrier) is modulated by another oscillator (the modulator). This technique can be compared with creating vibrato, but then the modulator is generally an LFO, to make the pitch changes audible.[269] With FM, the frequency of the modulator is so high that the pitch changes are no longer audible. Instead, another, often richer, sound can be heard from the various sum frequencies of the two oscillators; the wave form of the carrier changes. FM is used in sound design to create specific electronic sound effects.

Physical Modelling is a way of synthesising sound, where a physical sound source (often a real instrument, but it may be a voice) is mimicked as naturally as possible using algorithms. A mathematical model simulates the interaction between all the physical elements of an instrument and the surrounding air. The advantage of physical modelling is that a wide range of sound parameters can be modulated (influenced) by just changing a number of variables in the formula. Unlike the use of samples from other synthesis methods, which often demand more input.

268 Wilkins 2014: 76

269 Low Frequency Oscillator

Wavetable synthesis and *vector synthesis* are frequently deployed to create and develop all kinds of sound textures and pads over time. With wavetable synthesis, the values from the wavetable for one waveform are morphed to the wavetable of another waveform. This results in a dynamic sound field. These transitions are often achieved by means of envelopes, LFOs and manual controllers. Vector synthesis is a specific form of wavetable synthesis, in which the transitions between the various waveforms are smoother.

And then there is *sampling technology* that allows generally small snippets of sound recording to be modified and played back in numerous ways. A human voice sample can be played on the 88 keys of a full MIDI keyboard and, when you press a key in the lower regions, it generates a low, subterranean gargling sound. By using other MIDI controllers, you can also manipulate various parameters such as vibrato, tone colour and volume. In fact, the advantage of such an instrument is being able to play it in real time while watching the picture and reproducing any 'dynamics' in the image in the sound.

Then there is *granular synthesis*, a technique for creating complex sounds by playing back many small, simple sound grains. The starting point and playback speed of these grains are controlled individually, enabling you to slowly 'scan' the original sounds and play back the various grains (more) rapidly (or vice versa). This facilitates time stretch and pitch-changing effects. By changing or randomising the parameters of the grains, you can make quite radical changes to the sound. This can be used for making complex wave forms, which are highly suitable for sound textures.

One method of sound processing invented by Walter Murch is *worldizing*: this enables you to suggest that the sound you have processed could actually be heard at the location. You play back the sound you recorded in the studio at the location where it will be heard in the film. You then record that sound as heard in that location and analogous with the movements in shot, using one or more microphones, thus incorporating the specific acoustic characteristics of the location. Walter Murch used this method for the first time in the film *American Graffiti*. The idea was to have the DJ Wolfman Jack's radio broadcasts coming out of all the cars in the film. Walter Murch on their method:

George [Lucas] and I took the master track of the two-hour radio show with Wolfman Jack as DJ and played it back on a Nagra in a real space – a suburban backyard. I was fifty-or-so-feet away with a microphone recording that sound onto another Nagra, keeping it in sync and moving the microphone kind of at random, back and forth, as George moved the speaker through 180 degrees. There were times when microphone and speaker were pointed right at each other, and there were other times when they were pointed in completely opposite directions. So that was a separate track. Then, we did that whole thing again.

When I was mixing the film, I had three tracks to draw from. One of them was what you might call the "dry studio track" of the radio show, where the music was very clear and sharp and everything was in audio focus. Then there were the other two tracks which were staggered a couple of frames to each other, and on which the axis of the microphone and the speakers was never the same because we couldn't remember what we had done intentionally. Sometimes, Wolfman Jack would be on axis on one track, but he would be off axis on the other track. I was able to blend those three tracks to get the right amount of atmosphere. I could make transitions from a live, very present sound to something that sounded like it was very distant and bouncing off many buildings. I could create a sense of movement too – hence, the moving microphones.[270]

You can use all the techniques described above to create sounds for the database I mentioned earlier, to process those sounds or – at a later stage in post-production – to create all the desired sound directly.

The moments when you decide that an effect or ambience is right are an important part of the design process for sound effects and ambiences: validating your work in the same way we encountered in the composer's design process. The sound design concept provides a reference frame and helps you make such decisions. This process of validation affects the combination of the visual and sound tracks, in this case specifically with regard to effects and ambiences. Walter Murch on the use of this combination in the film *THX 1138*, in which he puts the sound of a nineteenth-century music box over a (kind of) MRI machine:

270 Jarrett 2000

I think the greatest thing that sound can contribute to a film is a metaphoric tension between the sound and the image. If you produce a sound that has no creative tension, which simply reproduces what we are looking at, it adds something, but it doesn't add very much because you are not soliciting the imagination of the viewer. The viewers are seeing something and what they're hearing is exactly what they might expect to hear given what they're looking at. Whereas, if you can create a tension, which is to say: I don't know what the connection is between a big piece of medical equipment and a music box other than that they are machines that slowly rotate. But it felt to me that at that point in the film everything had been very harsh and mechanical and a little bit electronic, and that here in the middle of this medical exam, a piece of sweetness, actually a piece of music from the early twentieth century, would be very welcome. But it's also played at half speed, so that it has a calming effect. So, for a variety of reasons it seemed correct. And yet there's nothing obvious about that, and I leave it up to the audience to piece together in their own mind what connection they make between this piece of medical machinery, very modern, and a sound which we associate with the end of the nineteenth century, beginning of the twentieth century, very sweet and yet also manipulated because it's played at half speed. There's a tension between those two ideas. The visual idea and the sound idea don't immediately go together. And yet if you toss something at an audience like that they will frequently put something together in their own mind that is their own rationalisation of what it is that they're seeing: unique to them – to each member of the audience. That's the greatest thing, I think, that film can do: that is, to provoke an image or a sensation that is not on the screen but is elicited from the mind of the audience. And the great and paradoxical thing is that this feeling is then reprojected onto the screen by the audience and they imagine that what they are feeling is coming from the screen – in fact it's coming from themselves.[271]

So, as sound designer you can create tension between the visual and sound tracks that can evoke certain associations and emotions for the audience. The viewer than constructs the 'reality' with which they are confronted, actually creating their own emotions and associations. The first few lines of the above quote reflect the fact that a sound designer is still frequently seen as facilitatory, as we saw in chapter 2. It would also have been possible to provide the MRI machine with the 'real' sound of an MRI machine. The director might have been satisfied with that, too,

271 Constantini 2010: 35 – 36

because if the synchronisation was correct that combination would also have been right. As sound designer, it's your choice which position you wish to adopt. That decision translates to all levels of sound design, as Gary Rydstrom puts it:

A lot of approaches say that sound should be this: 'If I see something on the screen put a sound there so the audience believe it's really happening' and that's the extent of it. But even the simplest choice in sound, the cricket chirp, can be made from a dramatic point of view so that the pace of the cricket chirp is appropriate to the mood of the scene. I'm much more interested to pick a cricket chirp even if it's from Australia for a movie that takes place in Ohio that is appropriate to the drama of that scene; if that's what works, that's what works. I think there's a thinking that sound is fairly obvious: you see something you put a sound in and you are done, as opposed of making use of this whole 'angle' on the film to do all sorts of wonderful things to support the film itself.[272]

The difference between these two approaches is concisely described by the sound designer Arnoud Traa:

You can 'fill' a scene with sound, but you can also use it to 'tell' something. In the first instance, that's 'filling' rather than 'feeling'.[273]

dialogue + ADR

The dialogue (and dialogue editing) is one of the most important elements of the sound track. Thanks to digital technology, the possibilities for intervening in dialogue are enormous. A dialogue editor's job used to consist primarily of ensuring understandable dialogues. Intelligibility and lip synchronisation are still important criteria, but improved technology means that far more attention can be drawn to the other characteristics of the dialogue, the voices that contain language and, therefore, information but, at the same time, represent the characters. Voice means not just the spoken word but also other important elements such as breathing and oral noises, including lip smacking and bodily reflections. In principle, a microphone held over the actor's head on a boom gives the best result because not only the voice but also the aforementioned elements and the room acoustics are captured. Often,

272 Sergi 2004: 170

273 Traa 2019.

the film type or style makes working like this impossible, so transmitter mics are needed. The sound for the film *The Hurt Locker* (a multi-camera film) was recorded with transmitter mics in the soldiers' helmets. Not the ideal position, but it did allow breathing, groaning and so forth to be recorded in all kinds of hectic action scenes: sound that was essential for the audience to be steeped in the film and the characters' emotions.

Dialogue editing entails three tasks: selecting the most suitable sound recordings for constructing the final dialogue, removing all irrelevant audio such as white noise without affecting the dialogue and editing the acoustic characteristics of the dialogue. The last task is the most essential in dialogue editing. Dialogue and ADR editor Gillian Dodders has developed a handy method for determining whether a dialogue sounds 'good' or not:

Dodders mentions that one useful technique is to be able to say the sentence in your own head and to consider how it should sound, then compare it with the material you have. It is also important not to look at the computer screen and the waveform of the voice all the time as it can influence the way the sound is perceived.[274]

If an actor over-emphasises a number of specific words in a line, then you can turn down the volume of those words slightly, making the line sound more natural. You can also slightly lower or raise the pitch. Sometimes, it can be necessary to lower the pitch of a voice throughout the entire film because a lower voice fits the character better.

Editing breathing can also have its benefits. Removing all the breathing from a character's dialogue will make that character more scary. You experience the character no longer as human but as the 'voice of God'. Sometimes, breaths are actually necessary to make a constructed dialogue sound realistic, or you may have to intervene if there is too much breathing, as Dodders describes:

Some actors can be breathy but I know that's nervousness and that's not supposed to be part of their character; therefore I spend a lot of time cutting out the breathiness. If I'm not sure I will ask the director 'Is this character supposed to be so nervous? Is he supposed to have a dry mouth?' And if he

274 Pauletto 2012: 135–136

goes 'Oh, no, it is just this actor but we couldn't do anything about it', it is a chance to improve that character's performance.

Conversely, breaths can be added to help gel together sentences that were originally separate. The fragmentation of the material becomes evident when the cutting room would take out a whole chunk of the story and take the front of a sentence and the end of a sentence and join them together. And I just need to work out a way to make those two run smoothly together, which often just involves putting a breath in. Just putting a breath in means that you can put two completely random sentences together, and fake that it is one sentence. Also, we either go down [in pitch] at the end of a sentence or up, so I have to recreate that to make things, which they have decided to cut short, fit together.[275]

So, as dialogue editor, you have the possibility to intervene 'to a fraction of an inch' in an actor's voice and performance, but that does carry a huge responsibility, as intervening can make or break that performance. What's more, if you do your work well nobody should notice. After all, the aim of your work is to deliver a fully coherent and consistent performance so the audience is unaware of the fragmented material from which it has been constructed. Re-recording mixer Robin O'Donoghue gives the following comment:

Nobody says 'what a wonderful job the dialogue editor did'. They say 'wonderful music or wonderful sound effects' but not [about] the dialogue. Even film directors don't fully understand sometimes the work that has gone in there, because it's a bit of black art.[276]

In principle, ADR is only used when really necessary but, on closer inspection, directors frequently want to slightly change the text in a scene. Intelligibility is also an ever-greater issue: increasingly, actors are mumbling, partly because drama courses are devoting less attention to 'delivering lines'. Experience has taught us that not all actors are good at ADR, by any means. This is often also because ADR sessions take place months after shooting finishes. Another drawback is that actors are unable to react to their counterparts. In fact, the best solution would be to go back to the original location or film set and re-record the dialogue under the same conditions as during shooting, this time without picture.

275 Pauletto 2012: 137

276 Pauletto 2012: 135

Sound designer Owe Svensson on this approach for Andrej Tarkovski's film *The Sacrifice*:

The filming took place in the summer and autumn of 1985 and I was aware that Andrei wanted us to dub to revoice all the voices, even those recorded in the studio because he could not concentrate on the dialogue on location. He was only thinking in the terms of visual composition. That was "OK", but later I realized how much dialogue there would be in the post-synching and I knew that the actor Erland Josephson, for instance found it very difficult to re-record his lines. He hates it. Allan Edwall, who had a large part and said earlier when they were recording the individual lines that post-synching is like having to eat one's own vomit so he hated it too.

I wanted to make life easier for these actors so that the re-recording of their voices would remind them of the original filming. I thought this would work out better on a sound stage where there is always a good atmosphere. It is quite the opposite in the dubbing theatre where everyone just wants to get away and you cannot concentrate. I suggested to the producer that we should do something different: actually post-sync on the sound stage. We were lucky, there were not many bookings in the Stockholm studios at the time. Instead of having to work in a mixing or a dubbing studio we did it on a film sound stage. We set up a microphone, some lamps and some TV monitors. I had a video playback deck with the film. We started rehearsing the lines, Josephson being the first. I got him to repeat his lines over and over, even before we recorded. A couple of hours later he became quite relaxed.

There is a prayer in the film a rather long monologue and he said "I would rather not redo it because I can never improve on it". We persuaded him to try and the final version was even better than the original.[277]

Such an approach will not often be feasible, due to constraints in terms of locations and budget, but the example shows how important the conditions can be. A solution can always, naturally, be found half way between the above example and ADR in a regular sound studio with a vocal booth and studio microphone.[278] Sound designer Skip Lievsay on his ADR approach:

277 Svensson 1998: 113

278 A *vocal booth* is a small, well-insulated room in which there is little reflection, making it ideal for recording dialogue and voice-overs, for instance.

I boom the sessions on the looping[279] stage. I watch the scenes and try to guess where the microphone was when it was originally recorded during the shooting. I try to position the microphone in the same place. We generally use the same microphones they use on location – it's much easier to get a good match between the loops and the sync.[280]

The above approach is a smart solution that takes relatively little time and effort and will often work better than simply repeating lines in front of a regular studio microphone in the vocal booth. You can show the actor the scene and let them hear their original dialogue and then they re-enact the audio aspect. It's important to re-enact it physically, too, by incorporating the right breathing, movement in the voice, groaning, panting, etc. In fact, an actor actually has to give their original performance again, paying specific attention to lip synchronisation. The best thing to do is discuss with the actor how they want to divide up the recording of a dialogue: do they want to do it all in one go or break it up into fragments? The former is probably best for the performance but, if an actor is feeling insecure, it can be a hindrance. If planning and budget allow, it's also wise to rehearse a sequence a number of times so the actor can build up the routine in terms of the lip syncing and devote more attention to their performance.

There is also a distinction between *visual looping* and *audio looping*. In the first instance, the actor watches the footage a number of times beforehand, listening to their original lines. During recording, they will only hear their new version, but they will still see the visuals, so they can concentrate on lip syncing. In the second instance, the actor also watches and listens to the original recording a number of times, but delivers their dialogue again without the visuals, so they can pay more attention to their voice acting.

Working with actors in ADR sessions is a precarious occupation, in view of the insecurity actors feel with regard to this part of their job. You have to be able to make an accurate assessment and put people at their ease, but at the same time you need to be highly critical. In the end, it's you who have to decide if it's okay. It's therefore important to have thoroughly studied the scenes in question, what is specifically required

279 *Looping* is the traditional term for ADR, dating from the analogue era when tape loops were made of those scenes that needed new dialogue.

280 LoBrutto 1994: 261

of the actor in question in those scenes and what, if necessary, your options are for editing the ADR to ensure the end result is usable.

Lievsay also feels an approach such as Owe Swensson's is best, which is witnessed by his story about Paul Newman's lip syncing for the film *The Color of Money*:

> He (Newman) said, "Okay, I'll tell you what, the only way this could work for me is if we do it outside." So I got a Nagra [281] and a microphone and we went up to the roof of the Brill Building right in midtown Manhattan. I held the microphone, and that's when I realized the importance of freeing the actor from the microphone, the stand, and the dark room. He did four perfect takes, and they all had this built-in motion where Newman did what he did in the movie and said the line at the same time. They were so much better. They worked perfectly, every single one of them. It was the thing to do.[282]

A specific form of ADR recording is walla: the sound made by a group of people talking and/or laughing and/or eating and/or shouting, depending on the location (birthday party, restaurant, football stadium, etc.).[283] This requires a 'loop group' (some five to ten actors and actresses) who jointly produce that sound based on a number of instructions and (sometimes) lines. It's important that no specific dialogue can be followed within that 'group sound', but that specific characteristics can be observed. Example: is the group only men, women, children or mixed? Is the language English, or all kinds of languages together. Are any specific words important? What is the atmosphere? Cheerful and exuberant or muted and calm? The number of people is also important, which may mean combining a number of recordings to create a larger mass.

One good example of (a specific form of) walla can be found in the helicopter scene in the film *Apocalypse Now*. The dialogues in this scene are built from a number of layers, one of which, according to sound designer Walter Murch, was created as follows:

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281 A *Nagra* is a popular analogue portable recorder from Switzerland, which was always used in film due to its reliability under extreme conditions.

282 LoBrutto 1994: 261

283 The term *walla* comes from the fact that, when you get a number of people to repeat the word 'walla' in the background, it sounds like a buzz of conversation.

There was another layer of pilot chatter we got with real helicopter pilots from Vietnam. We got them into a studio, put helmets on them with mikes, projected the film, and said: "Pretend it's real. What would you say in this kind of real situation?" They could all hear each other through their headsets, just like they would have been eight helicopter pilots all communicating with each other. These were not actors. They got extremely stiff and rigid. In the end we piped a hundred decibels of helicopter sound into the studio. So if I was looking at you, the only way I could hear you was through the headset. This intense sound energized them, so looking at the picture they felt they were really there. Then they all just let loose and did the real thing.[284]

ADR (and walla) are best produced in a recording studio in which the conditions during the original recordings are recreated as closely as possible. Just how possible that is will vary greatly from production to production and depend on budget, schedule and the availability of the actors involved.

Foley

In principle, a Foley artist is responsible for all the sounds ensuing from the actions of the characters in the film.[285] One obvious example is a character's footsteps, but these sounds also include opening a door and picking up a cup, for instance. Foley ensures that the film and the locations are experienced as real. Film sets are usually set up in such a way that they are highly suitable for recording dialogue. A realistic location is then created with the help of Foley, as this provides information on the floor, acoustics, etc. Foley also 'creates' the character (the voice, as described above, for instance) and Foley ensures the character's physical presence in the film. The sounds a character generates in a scene and the way they walk provide a lot of information on the nature of the character and the mood they are in. Sound designer David Lewis Yewdall on this aspect of Foley in his collaboration with the Foley artist John Post:

He brought a whole different performance to even the simple act of walking. Many Foley artists made footfalls on the right surface and in sync with the action on-screen, but Johnny took the creation to a whole new level. It was not just a footfall on the correct surface: the footstep had character,

284 LoBrutto 1994: 95

285 These might be animals, too.

texture, and often gave an entire spin on the story. I remember being on the re-recording stage when the director stood up and paused the mixing process. He asked the mixers to back up and replay the footsteps of the actress crossing a room. After we played the cue again, the director turned to us with an amazed expression. He was fascinated about how John Post had completely changed the performance of the scene. Before Johnny performed the footsteps, the actress simply crossed the room. During the Foley session, however, Johnny built in a hesitation by the actress on the off-screen angle and then continued her footsteps with a light delicacy that bespoke insecurity. This not only completely changed the on-screen perception of the actress' thoughts and feelings, but also greatly improved the tension of the moment. Johnny's very act of craftsmanship separates the mechanical process from art. He always approaches his Foley responsibilities as part of the storytelling process.[286]

These observations, too, reflect the difference between 'filling' and 'feeling', as the sound designer Arnoud Traa aptly put it in the paragraph on sound effects and ambiences earlier in this chapter.

If you don't do Foley yourself, but leave it to them, then you should go through the sound design concept with them thoroughly, particularly at the level of the characters and any evolution they undergo during the film. The Dutch Foley artist Ronnie van der Veer:

When I did the Foley for the crime thriller Bellicher: Cel (2012), I noticed that the main character, Bellicher (Daan Schuurmans) had a bodyguard (Tim Murck) who was much smaller than me. That's odd, I thought. So, in consultation with the sound designer – the one responsible for the film's sound – I made the bodyguard's footsteps extra heavy. Then it's easier to accept that it's he who is protecting Bellicher. It's at moments like this that the Foley really helps the story along.[287]

There are two distinct ways of creating Foley sounds. In the North American industry, a Foley recording stage consists of a large number of different floors, in which the Foley artist walks around a microphone placed in the middle. This creates a situation in which the original action, in this case walking, can really be repeated. In such a Hollywood approach, the film set is rebuilt as closely as possible. For the film *The*

286 Yewdall 2012: 454

287 Toma 2018

Deep, which is set largely underwater, a complete swimming pool was installed in the studio, in which the actions in the film were repeated as far as possible. Foley is also recorded on location: Foley artist Nicolas Becker, for example, frequently follows the crew, travelling to the film locations to record the associated Foley sound. Another example, not from Hollywood, can be found in the film I mentioned earlier, *The Sacrifice*, with the sound designer Owe Svensson:

Because the environment in The Sacrifice was recorded in this house situated in an exposed area on a seaside heath there are naturally many elements that make the house live. This wooden house where many things happen, has floorboards. Floorboards which sound different depending on where one stands in the room. I decided to produce these sounds at my own country cottage. It is an old, turn-of-the-century house that has resounding walls and floors so all the footsteps were produced by me that is, I physically walked in different pairs of shoes even ladies' shoes, size 45. I did the Foley in the film myself.[288]

In the second approach, the Foley artist endeavours to analyse the elements that make up the desired sound and how they can be created. The former demands a specific attitude to listening, described here by the French theoreticians Pierre Schaeffer and Michel Chion: *reduced listening*.[289] This entails trying to only listen to the sound itself, without being aware of the context or the possible source of the sound. Listening like this can help you make a good analysis of the various components of the sound and create Foley sounds in a different way. An illustrative example can be found in the work of the *gerauschmacher* Mel Kutbay,[290] from Munich, who died in 2014. He made a precise analysis of the component parts of the sound of footsteps. There were no big floors in his studio over which he actually walked; there was simply a chair surrounded by various 30x30cm 'floors' (wood, stone, vinyl, etc.) and, sitting, he set his feet down as if he were walking (first the feel and often the outside of it, following though with the metatarsus to the inside forefoot).

288 Svensson 1998: 114

289 This listening approach, and others, is discussed in Michel Chion's book *Audio-Vision – Sound On Screen*.

290 *Gerauschmacher* is the German term for a Foley artist. This is a common profession in the German media industry because they dub, rather than subtitle, all foreign productions. Often, therefore, the entire sound track has to be remade, with the aid of a *gerauschmacher*.

Events may take place in a film that can't be directly linked to the actions of a character, but for which a Foley artist can be deployed. If a scene is set on a beach, where the waves are lapping at the shore then, naturally, you can find such a sound in any sound library. The risk is, however, that the rhythm of the footage won't match the rhythm of the sound, especially in any close-ups of the waves. The *gerauschmacher* Mel Kutbay, mentioned above, created this sound effect in a surprisingly simple way, by sitting on a chair and rubbing two clothes brushes against a cushion in time to the breaking waves. This produced a white noise that corresponded exactly with the rhythm in the visuals. To that he then added some real water sounds to create the desired sound effect. This technique is, again, based on the analysis of the original sound and its various components.

There are also various ways of working with Foley. Foley artist Elisha Birnbaum describes them as follows:

Each Foley artist has a different method. I like to start and finish a scone performing all the sounds of one character. Let's say I have four characters in a scene. I'll do everything that one character is doing from the beginning to the end of that scene, including the rustle of clothing, putting a book on a shelf, etc. Then I'll go to the other character and do all of what he does and so on until I finish all the characters. Then go to the next scene. There are other Foley artists who will do all of the footsteps for everybody in the whole reel and then record the specifics. With my method, I become very familiar with that scene because I have to do it many times, over and over. I can interact with the characters much more easily because I'm getting involved with that one scene.[291]

Creating Foley sounds is generally done by duos. Executing all kinds of actions to generate sounds is one thing, but assessing (validating) the recordings of those sounds to picture is something else entirely. Foley artist Ronnie van der Veer stresses that he can't do without his regular sound mixers Jacob Oostra and Tom Nestelaar. It can also be a physically demanding job, so working as a duo means you can share the heavier tasks. Foley artist Elisha Birnbaum on the physical aspect of Foley:

291 LoBrutto 1994: 154

Yes, after eight hours of work you can get exhausted. There are times when you have to hold your body in a certain position for a long time. Let's say we have to do a body drop. Sometimes we do this with a twenty-five-pound sandbag – you have to hold it, ready to drop it at the right instant. You might have to stand like that for a few minutes until the right moment arrives. Then you have to repeat it until you are happy with the result. When recording body falls on a wood, carpet, or dirt surface, I'll drop my body, and the sand bag will accentuate the sound. It's difficult to describe the physical effort, but running, walking, jumping, and weight lifting are everyday occurrences. The biggest problem with walking and running is to control your breathing. If you breathe while you are running, the mike will pick it up. I must breathe through my mouth very slowly. It's not easy, but it works well.[292]

Another major aspect that can make Foley work heavy is the concentration it demands. Elisha Birnbaum:

It is also very important to be able to focus completely on the action that is happening on the screen and mimic those movements. If you are successful it will sound as if it was completely on the action that is happening on the screen, and I mean focusing 100 percent. If your mind shifts for a second, you will make a mistake.[293]

Foley is recorded in mono because, like the dialogue and the character it represents, Foley sound is placed in the centre speaker, so it constitutes a whole.

silence

One of the most obvious forms of sound is *silence*, but (too) little use is made of this form in practice. Silence doesn't generally mean there is really nothing to be heard; it means cinematic silence, in which you can always hear one or another form of set noise as a minimal representation of the world you are watching at that moment. Such a silence solicits the audience's fantasy and imagination, obliging them to come up with an answer to the question, 'Why is it so quiet here?'

The most extreme form of silence, in which there is no set noise to be heard, either, is featured in a scene from the film *Leaving Las Vegas*.

292 LoBrutto 1994: 155 – 156

293 LoBrutto 1994: 153

Director Mike Figgis on this scene and the use of silence:

It's the scene with Nic, where he's drinking a lot of something alcoholic and then almost has a heart attack, and he hits the rail and it goes completely to silence [...] It's very disconcerting for an audience because you've been programmed and conditioned to never have a direct confrontation with the film [...] What I discovered when I started to tour with Leaving Las Vegas in America was that this moment in the film – in a crowded cinema, with a good sound system – was extremely uncomfortable when he's so distressed. And suddenly, it's so quiet in the cinema that you can literally hear everything, and you don't have the protection of this sound blanket of mush, or just ambient noise, or whatever, which we come to expect of a soundtrack. And I loved it. I thought that was exactly what I wanted, but it was even much more powerful than I thought it would be in my imagination. I know the film really well; I get really tense in my stomach when that scene comes on, because there's nowhere to go. It's like that moment when suddenly you're talking animatedly and everybody stops talking and you realise your voice is a bit too loud.[294]

You can build up to silence analogous with a development (a vector) in the dipole model in chapter 1, as happens a number of times in *Apocalypse Now*. When two soldiers (Captain Willard and Chef) go into the bush in search of mangoes, the sound track becomes slowly but surely more quiet, as the elements of the bush sound are faded out one by one. Walter Murch on the construction of this scene:

Here, with the two men in the jungle, the silence has to develop within the same environment. If it is effective, it makes you participate in the psychological state of the characters on-screen, who are listening more and more intently to a precise point in space where they think 'Charlie'[295] is lurking. In fact, we never reach absolute silence in this scene. It feels silent, but it isn't [...] The trick here is to orchestrate the gradual elimination of 'orchestral' elements of the jungle soundtrack: if it is done too fast, the audience is taken out of the moment; too slow, and the effect we were after, the tense moment before the tiger jumps, wouldn't have been as sharp.[296]

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294 Figgis 1998: 2

295 *Charlie* was the name the US army used for the Vietcong and other Vietnamese during the Vietnam War.

296 March 1998: 96

getting stuck

The process can also get stuck because there is a problem that you and, with you, all the other disciplines involved are unable to solve. Sound designer Michel Schöpping on this phenomenon and the possible solutions:

Often, it can really help to go back and look at the original concept. Sometimes you can lose sight of it because you've been occupied with the details for too long. And sometimes it's a good idea to halt the entire process for a while because, at some point, you get so stuck that 'it doesn't work any more'. Time creates the necessary space and distance. That doesn't necessarily need to cost more money, because you can divide up your working time, but you have to get away from those details. You have to free yourself from the 'construction' that has been devised so far, in which you have all, evidently, ground to a halt.[297]

The ways of dealing with 'getting stuck' that we discussed in the composer's design process also apply to the sound designer. Another way is to let go of the visual track for a while and only listen to the sound track as it has been constructed at that moment. You will then become more aware of the meaning the sound track generates and what might be missing or superfluous. Again, you can experiment with turning the various elements of the sound track on and off, to find out which are essential and which less essential and which may be clashing.

If you really need new material, you can play back random sounds from sound effect libraries, use specific software to randomly search through your libraries or even create new sounds. That way, you switch off your own 'prejudices' and confront yourself with new sounds, which may be usable or may lead to new ideas. In this respect, there are a number of known methods, such as Brian Eno and Peter Schmidt's *Oblique Strategies*, which, by means of specific comments and suggestions, encourage you to adopt alternative ways of thinking or acting.[298] A variation on this for sound designers was devised by the sound designer George Spanos and can be found on the website www.gamesounddesign.com.[299]

297 Schöpping 2019

298 These methods can also, incidentally, be useful for composers.

299 http://gamesounddesign.com/Sound-Design-Strategies.html

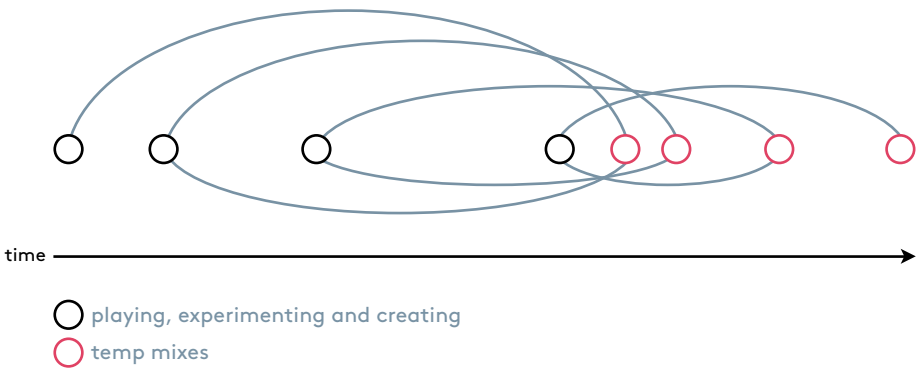
home stretch

Once the visual editing has taken a slightly more concrete form and the various elements of the sound track are beginning to shape up, you could say you are on the home stretch. A number of important moments can be identified here.

temp mixes and validation

The *temp mixes* I mentioned earlier are the moments at which you get an initial idea of how the various elements of the sound track interact. You can validate the material you have created so far on the basis of such a temp mix, analogous with the validation in the composer's design process. While validating, you are actually also sorting through all the material ('yes to this and no to that'), because you are placing it in the larger context of a scene, a sequence or the film as a whole. Naturally, the various disciplines such as the dialogue editor and the Foley artist have already validated their own work, but that is only relative validation, as those disciplines have no further context. The dialogue editor works solely on the dialogues and generally has no idea what Foley, sound effects and ambiences are being created at the same time for the same scene. The non-sequential method described above is an exception to this.

Based on the insight gained from a temp mix, you can again intervene in the various elements and continue experimenting and creating if needs be. The process is iterative, in other words, and as you steadily approach the desired goal, you regularly back up to edit or replace a specific element of the sound track.



It's important to do those temp mixes as soon as possible in the right acoustic conditions so you can assess the elements of the sound track according to their correct value. If the end result will have to be delivered in 5.1 format, then it's wise to make temp mixes in 5.1 as soon as possible. On the other hand, there is no point in making a 5.1. temp mix if the end result is only going to be streamed online. Steve Fanagan on his experience with temp mixes for the film *Room*:

Over the course of the next several weeks we delivered a number of different mixes, so every time Lenny and Nathan [300] went out and did a screening for Film4 or to the States to show it, we would do an updated version of the temp mix. It was a really nice process, for me it was giving me this experience I don't usually have on a film. I think that probably in total we did maybe five of those temp mixes across the sound post schedule – from the start point all the way to the final mix. It gave us this nice pause, and it gave me the opportunity to play things for Lenny and play things for Nathan. Rather than having a session at the beginning of the movie where we spotted and they told me where the sounds were going to be, we began a process of back and forth trying to figure out what it should and could be. So, I found it a really rewarding experience. It was the longest I've ever worked on a film. I'd love it to be the way I work on all films, but not every film is going to be in a position to offer you that familiarity. It's amazing to be involved with a film and get to know it really well, and I suppose – this sounds kind of naff – figure out what it's asking you to do, what it's suggesting you do. Time is always against us on any job because you're deadline-based or budget-based, but the more time you have the more you get to figure out the details.[301]

You can already include the (rough versions of the) music in a temp mix. If that music is already reasonably detailed, you can use it as a reference frame, as Steve Fanagan outlines:

As I worked through the scene I'd flip the music on and off, so I'd work for ages on my own on the scene then flip the music back on and try and figure out how I was going to shape around it.[302]

300 Director Lenny Abrahamson and editor Nathan Nugent.

301 Johnston 2016: 163

302 Johnston 2016: 166

Experiences with temp mixes can also prompt you to intervene in the visual editing, as we already saw in chapter 2 and as Steve Fanagan explains:

> Sometimes, when you start to add the sound, when you start to hear a dialogue scene cleaned up, as that process is being eked away at, you realise, 'Actually, we can hold this shot longer' or, 'We need to cut from this scene quicker'. Some of those rhythms become apparent because suddenly something that felt like problematic dialogue – because of a difficult environment or whatever, and you want to get out of it – when it's cleaned up you realise, 'Actually we can stay in this now'. So there's definitely a huge benefit in picture and sound working side by side. For me it felt like a privilege because you're getting an insight into how the editor is thinking about the film as they cut it, but you're also getting to spend enough time in the world that you feel like you've poked around in all the corners and explored it. You take more risks with what you're trying to do if you know you have the time to make mistakes. And often, in making those mistakes, if that mistake is made up of ten parts, then there's that one part that's your little doorway into the good idea.[303]

It's important to realise that making changes to the visual montage can have major implications for the sound track. An edit in the visual montage is simple and quick to make, but it can result in the sound track for the scene in question having to be 'rearranged': the music may need to be altered and if, for example, a close-up is swapped for a wide shot, that has major implications for the dialogue, the Foley and any sound effects and ambiences.

premixes

Depending on the type and complexity of the film, once the editing begins shaping up it can be a good idea to start making *premixes*, which I mentioned earlier. The total number of tracks for a film can easily amount to more than a hundred, so it's handy to mix them down to a number that will be easier to work with in the final mix. The order in which you now sort from the smallest sound fragment to the final master is as follows:

303 Johnston 2016: 167

- start will the individual *elements*: the individual sound recordings (including ADR, Foley and music), sound effects and ambiences you have created and collected (or which have been created and collected by the various editors).
- You may want to do an interim *predub*: collecting elements that belong together and form the basis for a sound effect, for example, but shouldn't yet be mixed. Such collections are delivered by the sound effects editor, for example, who provides a 'demo mix' to show how they would mix the finalised sound effect.
- The next step is the *premix*. In terms of sound effects you might have a premix of all the Foley footsteps, for example, or all the explosions. When it comes to dialogue, there may be various ADR premixes and, for the music, a percussion premix or woodwind premix, for example. In other words, the premix is a collection of elements that have been not only mixed but also equalised and panned in relation to the visual track. That collection is separate from other collections, so you can always easily go back to the individual element and adjust the ratios or remove elements.[304]
- You then group the various premixes into *stems*, based on the familiar classification of 'dialogue, music and other sound'.
- Working with that classification in stems brings you ultimately to the *final mix*. Now you will be working chiefly on volume, panning, equalisation, reverb and other ways of processing the various stems. You may have to go back to a premix to process or remove a specific element of a sound effect, though.

As I said, all this can vary greatly, according to the complexity of the film, the way the entire design process is organised and your personal preferences. Do you do all the elements yourself or do you delegate elements? Is the film complex in terms of the sound track, such as any necessary ADR sessions or a lot of different locations that all need to be given a character of their own? The answers to these questions determine the organisation of the sound design process and, therefore, the above steps. Regardless of the construction, when you are doing the premixes you are actually already doing the final mix, as Walter Murch explains:

304 You can store the individual sounds from which an effect or ambience is built in DAWs, such as ProTools, on 'hidden tracks', so you can always call them up again if you want to change a specific sound effect or ambience.

Premixes are in fact the final mix. [...] I don't distinguish between the two – you are mixing. It's just that in the premixes, you're focused on a certain area of the orchestra. If you were talking about orchestral rehearsals, you would be rehearsing the strings section, and so you're just focused on the strings and how they're working to each other, although in the back of your mind, you have to know that they're going to have to work with the woodwinds. So you don't want one to do something that steps on or eliminates something another section is doing. The premixes are a good example of that paradoxical state you find yourself in in films a lot, which is extreme attention to detail, but at the same time trying to maintain an idea of the big picture. You can get into trouble if you wander to either side of the road.[305]

final mix

In these concluding paragraphs, we will take a look at a few more process-related, technical and contentual aspects from the viewpoint of the sound designer. As I already mentioned, in principle you have two options for the final mix: you do it yourself or you get a re-recording mixer to do it. If it's the latter then, as sound designer, you can be present to clarify the original concept, where necessary, and assist when needed. The major objective of the final mix is to create a sound track that supports the story and the associated emotions. The final mix also has to produce a seamless sound track that doesn't distract the audience or make them aware of the sound track. As a rule, the better the final mix, the less the audience will consciously be aware of it. In such a process, a 'fresh' re-recording mixer can listen with 'fresh' ears to the content (the material used) that has to be placed into context. To keep those ears 'fresh', it's important to take enough breaks while doing the final mix. If you don't, then you can be faced with unpleasant surprises afterwards, such as too much 'high' in the end result.

Assuming you have done one or more temp mixes, the material for the final mix shouldn't present any real surprises. In principle, the final mix is about establishing the right ratios between the various elements. The question is what the first steps are in this final mix. Sound designer Michel Schöpping:

305 Kenny 2000: 125

I generally start with the final scene. Then you know how you're going to end it and that scene serves as a reference frame for the rest of the scenes in the film.[306]

Another option is to mix a key scene in the film to obtain that reference frame. Mixing key scenes and/or the final scene again touches on the 'big arc' that you described and set out in your original concept and any graphic score. That concept will very probably have changed during the process on the basis of numerous experiences and (new) insight, but – all being well – an idea remains about the form and content of the sound track as a whole. That (possibly modified) concept and any graphic score can provide a handhold for the final design of the 'big arc', by answering such questions as: 'Where is the climax in the sound track? Are there several climaxes? How is the lead-up to those climaxes constructed? Which elements are the most important in which scenes? Which are stable and which unstable scenes (analogous with the dipole model in chapter 1)?'

Walter Murch sees interesting similarities between mixing the sound track and what the camera department does with light in a film: both determine where the audience's attention should be focused in a scene.

It's very much like light. One of the fascinating things for me in mixing is that what we do with the palette of sound – what sounds we choose to emphasize, how we put a spatial ambience around those sounds, what we choose to eliminate – is very much equivalent to what the director of photography does with light. By highlighting the planes of a face, then making the background go darker and slightly out of focus, and then putting a light over there to pick out the ring that's on the table, which otherwise you wouldn't see, the director of photography is directing the eye, in a painterly way, emphasizing certain things, de-emphasizing certain others. But that is fixed at the time of shooting, there's not much you can do later to change it. Who knows, now that We're entering this new age of digital manipulation, these kinds of things may become more and more possible – to change the lighting of a scene later on, depending on how the scene functions in the film.

We already have that ability in sound – by the placement of sound or by regulating how loud it is, we can change the "lighting" of a scene. Well, through

306 Schöpping 2019

sound, we can make the scene "darker", for instance, so that the atmosphere behind the scene will have the same emotional effect on an audience as if it had been shot in a darker light.[307]

In the final mix, in the majority of films, the dialogue mixing is predominant and done first, based on the premixes made for 'dialogue'. Other elements are then mixed in relation to the dialogue. Sound designer John Avarese – quite rightly – always chooses between the three stems, when it comes to the question of what is primary:

If there is no dialogue in a scene, or there is an extended period without dialogue, something else is usually being heard. If it is a music-driven scene, the effects will be under the music; if it is an effects-driven scene, the music will be subordinate to the effects. Whatever the situation, all three stems cannot be equal. One of them has to be the primary.[308]

The most convenient thing to do is establish in that dialogue mix where the loudest dialogue is, so that can serve as a reference frame for the other dialogues. Perspective is also an important reference frame: a dialogue in a wide shot (WS) can't sound the same as a dialogue in a close-up (CU), but it should, in principle, remain intelligible. You can solve that by making the dialogue in the WS slightly 'thinner' than the dialogue in the CU. One example of that can be found in the final mix for the film *Harry Brown*:

One of the most important tasks for the mixer is to be able to direct the attention of the audience to what is important. An example of this can be found in Harry Brown. Harry (Michael Caine) is looking through a window at a group of youths who, he suspects, are responsible for the murder of his friend. He is considering how he can take justice into his own hands. The content of the chatter of the youths, recorded on radio mics and therefore perfectly clear, is mostly unimportant, as we do not need to understand it completely. Ian Tapp, the mixer, significantly lowered the level of the location recordings and added reverb to make it sound quite distant. The voice of one youth becomes suddenly important when, while threatening another boy, he shows his gun. The level of the voice is raised so that the audience's attention is grabbed, and a little delay is added, which is justified as possible echo from the buildings surrounding the group. This also serves to carry those

307 Ondaatje 2002: 116

308 Avarese 2017: 102

particular words for longer in our minds, reinforcing their effect. Harry now realises that he needs a gun if he wants to take the group on.[309]

Assuming the above scene is also described like that in the original screenplay, this would have led to a concept in which it is already established that the youth with the pistol should be the auditory focus of the scene. Consequently, the dialogue with the youths would have to be recorded with transmitter microphones, so the ratio between their voices could be determined later and the dialogue editor would have to devote specific attention to the voice of that particular youth. This would allow the re-recording mixer to mix the scene in the final mix as described in the above quote. This is an example of the implications a sound design concept can have for the sound design work at subsequent stages.

After the dialogue, the other elements (ambiences, sound effects and, lastly, music) are added to the mix. The most common technical interventions here are the use of EQ, compression and limiting. The use of EQ in a final mix is generally aimed at damping a specific frequency or frequency band, in the music for instance, to give the dialogue a little more space. EQ is also used to reduce the 'low' (a high pass filter is often used), to make the mix sound clearer.

Compression and limiting are primarily used for TV and online broadcasting (and distribution), which do not, generally, offer ideal controlled listening conditions. In a cinema, there are no distracting sounds, so extensive dynamics can be employed (from very soft to very loud). Listening conditions in a living room are far poorer, due to all kinds of additional noises from children, vacuum cleaners, espresso machines and so forth. Compression reduces the dynamics in the mix so that soft sounds remain audible. Limiting ensures that the delivered final mix complies with requirements in terms of the peaks in the sound signal set by a TV broadcast, for example.

Convolution reverb is often used for the final mix. This type of reverb offers an enormous range of realistic-sounding 'spaces' (both indoor and external locations) based on the acoustic characteristics of those spaces.[310] Such types of reverb are useful in the final mix for creating convincing locations and settings for various scenes.

309 Pauletto 2012: 139

310 Also see, for example, the Altiverb convolution reverb from AudioEase: https://www.audioease.com/altiverb/

Finally, a contentual approach that fits with the addition of auditory focus as described in the above paragraphs: *less is more*. If you leave out non-essential sound, that leaves the core, which determines the focus of a shot or scene. Gary Rydstrom describes this aptly in the quote below on his collaboration with the director James Cameron:

He has a very distinctive approach to sound that is based a lot on contrast. It's really true, he does believe that less is more, and I think you can make an argument for it visually as well. The counterintuitive result of it from the soundtrack point of view, which is really fascinating to me, and I really learned this from Terminator 2 and I learned it from him, is that people thought when Terminator 2 came out 'My God, it's huge! It has some of the densest, biggest action stuff we've ever seen'. Cameron's trick to making it seem big and dense is to keep it focused, and I think he does that visually as well as sound-wise. On the soundtrack he really didn't want to have a lot of extraneous sound; he wanted to focus moment to moment on 'And now we are in the front of the engine of the truck and we hear that, now we are not and we don't hear the truck at all; now we hear this, we hear the motorcycle' and so on. He was very focused on what sounds happened when and by virtue of taking out, which is what we always do in mixing, but he sometimes took it to extremes, things that weren't necessary, since you are not being literal about it, you just take out background and other things that are not so important, it made each of the things that we left seem bigger. Even in the action scenes in that movie less was more – the more pared down the track became, each of those moments had more freedom to live: the explosions seemed bigger, the big climactic moments seemed bigger.[311]

All in all, it's a long haul, being a sound designer. From collecting ideas and making a concept to creating all kinds of material (or having it created), bringing together and validating the rough versions in temp mixes, organising and administrating all that material in premixes, and, finally, validating that material in the final mix. It's that final validation – at the level of the shot, the scene and the film as a whole – that produces the ultimate answer to questions such as: 'What is this film about? What are we, as the audience, supposed to experience and feel?'

311 Sergi 2004: 176 – 177


wrong notes
are actually


the good notes

contexts

introduction

In the previous chapters, I have used fiction in the form of a feature film as my starting point for the design process for an audiovisual production and the individual design processes for the composer and the sound designer. In this chapter, I discuss the associated context of such a feature film, but also the contexts of other types of entertainment production and any implications they may have for the composer and the sound designer. After that, I explore the contexts and possible implications of audiovisual productions for 'information' and 'branding'.

It's important to look at those different contexts because there are major differences that can not only affect the individual design process but also have all kinds of implications from an organisational, technological and financial perspective. If you are to function properly in those various areas, you need to be aware of the context in which you're working at that moment. Working with a content-driven documentary director is something quite different from composing music or designing sound for an international advertising campaign for Mercedes Benz. Here, I'm not talking so much about the content, the music or the sound design, but the context itself. How does the whole design process unfold? What are the implications for my own process? Which people and jobs are primarily involved? How should I profile myself as a composer or sound designer? What can I ask for or should I demand?

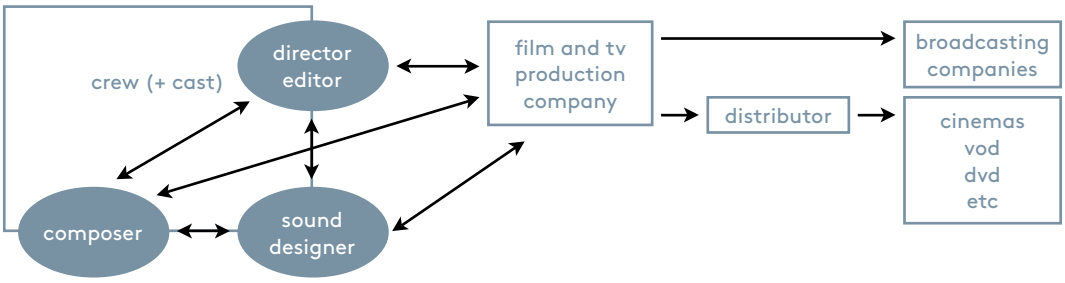
entertainment

Based on the three-fold classification in chapter 1 (entertainment – information – branding) I will first explore the context(s) within which the various forms of entertainment are created.

fiction

The design processes entailed in creating fiction, and then chiefly feature films, have been extensively discussed in the previous chapters. In this context, it's often a production company producing fiction for not only cinema but also TV and Video on Demand (VoD), as the financing for fiction still regularly comes from both worlds (film and television). At the same time, the two media are converging: the quality of television as a medium has improved enormously, thanks to a better picture and surround sound. Drama series are also on the up, partly because viewers can decide for themselves when they want to watch these days thanks, initially, to DVD and now primarily the arrival of VoD, with global providers such as HBO and Netflix.

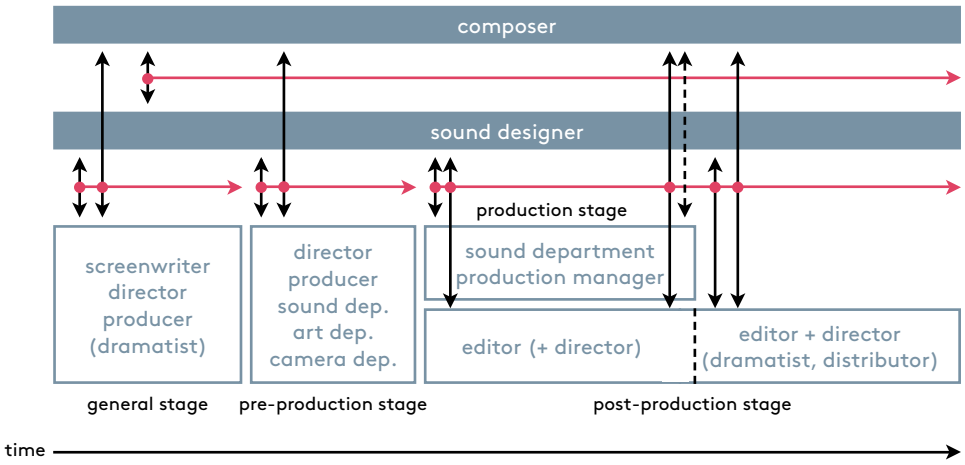
A screenwriter and/or director can submit their idea for a drama series or feature film to a production company themself. Production companies often develop their own ideas, though, and call in one or more screenwriters and directors.[312] Financing is then sought from various funds, such as national film funds. In consultation with the director, the production company compiles a cast and crew, including a composer and a sound designer and any associated teams. The figure below shows how the context for fiction generally looks:



312 A TV drama series will often have a number of directors, all working on the basis of a pre-determined 'style' in terms of camerawork, lighting, sound and so forth to prevent differing interpretations: the series bible we looked at earlier.

The production company, the distributor and the broadcasting companies are the major 'players' in this context. A *distributor* is an organisation that is responsible for the initial distribution of a film in cinemas and which develops a release plan for the further roll-out of the film on TV, DVD, Blu-ray and VoD, through foreign sales and so forth. The *production company*, as I mentioned, is often the party that initiates the production of a feature film or drama series. If the director is the one who took the initiative, then the relationship between the director and the production company may be slightly different but, even then, it will ultimately be the production company making the decisions. So far, the broadcasting companies (both public and commercial) have been the major clients for and financial backers of fiction in the form of films and series.

The three roles of producer, director and distributor may be combined in the same person: a director who also has a production company and organises the distribution of their own film. Thanks to technology, the final product is digital these days, so distribution has become considerably easier and makers are increasingly taking the reins and organising their own.



The figure above, which is time-related, shows the *desired interaction and collaboration* between the sound designer, the composer and the other disciplines for this context, as discussed in chapter 2.

If a production is intended solely for television, no distributor is needed. In that case, the broadcaster is represented in the process by a *dramatist*,[313] who has a major say at the screenplay and post-production stages, in particular. In the case of a feature film, the distributor will often have a hand in the creation. As a composer or sound designer you may therefore encounter either of these two during the process, in which they will have a major say.

There is also an increase in international productions, partly thanks to EU subsidies, in which producers from various countries make a feature film or drama series together. One additional demand for such productions is that the cast and crew also come from various countries, which can pose problems due to (sometimes) major culture differences in terms of working methods.[314] In such productions, as a composer or sound designer, to avoid any surprises it's therefore essential to make clear agreements with regard to the collaboration in terms of the development of a concept, the organisation of the process, the associated schedule and the exchange of material.

Throughout the process, regardless of whether the project is national or international, you will frequently have to insist on consultation and collaboration from the disciplines involved. As I mentioned, there is generally a feeling of time pressure – including for the composer and sound designer – so each discipline will tend to withdraw to its own position. What's more, almost everyone in this business is highly motivated and will want to deliver the highest quality possible. Consequently, everyone wants to spend as much time as they can on their own discipline, often allowing too little time for consultation and collaboration. Not everyone realises or acknowledges the importance of the sound track, either, so they won't necessarily feel the urgency to cooperate. When it comes to decision-making, any decisions regarding content are generally made by the director. The more organisational and financial decisions lie with the producer or their representative, the executive producer.

313 A *dramatist*, in the context of television, represents the broadcaster and supervises the creation of television films and drama series, particularly in terms of content.

314 The composer may come from one country, while the orchestra is hired from a second and the final mix is done in a third.

design process

The design processes for the composer and the sound designer within the context of fiction film are described in chapters 3 and 4. There are a number of exceptions in the sound design process for a drama series. As with feature films, the possible role of the sound track lies in the three codes I discussed. In addition, a drama series must have a certain degree of consistency, in both the visual and the audio track, which is reflected in the music for the opening titles and the credits at the end of each episode.[315] That music and/or sound design will be the same every time, save any slight variations dictated by the visual track. Firstly, it indicates the kind of series we are about to watch and, secondly, it will be familiar so that, if we are in another room for example, we know that our favourite series is on again. In that sense, it's similar to designing an 'audio identity', which will be discussed later in the paragraphs on branding. 'Familiarity' is therefore an important part of the auditory design of the title sequence.

In most cases, the composer will even compose a library, which the sound designer supplements with sound effects and ambiences specific to the series and the locations involved. Where possible, everything is delivered in stems, so the editor can relatively simply compile a suitable 'composition' when editing. Alternatively, the composer can compose specific music for each episode, based on a number of basic compositions, to ensure that the music remains consistent throughout. There is also a mixed form of the two methods where the composer creates a library, but produces specific compositions for a number of key scenes.

As composer you will then already be active during the pre-production and production stages, as your library has to be ready as soon as post-production begins. You start work on the basis of the screenplay, discussions with the producer an/or director and any other inspiration sources, such as a moodboard or the series bible. The producer or director may have chosen a number of temp tracks, particularly for the title sequence and as a style example for the music during the episodes. As with the design process for a feature film, you start with a number of music sketches. There is, as yet, no edited visual track, so synchronisation plays no role. On one hand this is an advantage: you don't have

315 Nowadays, the custom is to keep the credits at the end of each episode short, to prevent viewers switching channels, and only show the full credits at the end of the final episode.

to worry about synchronising. On the other hand, you're missing the reference frame normally provided by the visual track: laying music over the picture and seeing whether it works (and, if so, how).

After approval, you elaborate on your music sketches until they are fully-fledged, well-produced music cues, which you then deliver as stems. You also make numerous variations of those cues by, for example, varying the length and instrumentation, so the editor will have plenty of musical material that can relatively easily be combined. There is generally an evaluation meeting after the first episode and it may be decided that more and/or another kind of music is needed. The producer may ask you to act as a (kind of) advisor in compiling the finalised compositions during editing. If you have created an extensive library, you may well have a better overview than the editor and be able to rapidly compile the required compositions. If you compose specific music for each episode, then the process will be largely similar to the design process for the feature film as described in chapter 3. You can then interact and collaborate with the visual editing and make your compositions specifically for the visuals.

The sound post-production for a drama series is generally simple in comparison with a feature film. The focus is far more on dialogue, which has to be intelligible, even from the speakers of older television sets.[316] The room is also smaller dynamically, although the various media are steadily converging. There is an increasing degree of automation, too: a specific equalisation can be used for a character's voice in each episode and therefore only needs to be done once. Often, there is less budget and time for each minute of 'content' for sound post-production than with feature films, but in this (financial) aspect, too, the media are converging.

With a greater focus on dialogue, lesser dynamics and a lower budget, it won't always be possible to deploy a sound designer before the final mix. Whether or not a sound designer is used depends greatly on the genre. For a romcom or a comedy series, dialogue will be top priority. If any sound design is needed, it will be done by either the editor during editing or the re-recording mixer during the final mix. A science fiction

316 But also on smartphones, tablets and laptops.

series, on the other hand, calls for a specific sonic image and therefore sound design, so the sound designer's role is comparable with that for a feature film.

The above visualisation in time is not entirely representative for a drama series. As I mentioned, in most cases the composer will already deliver their music at the beginning of the post-production stage and that is the end of their contribution. Again, a separate sound designer will not always be necessary. All in all, a drama series has a more industry-focused approach than a feature, film, which is based on an individual maker's specific, particular idea, especially in the case of author's cinema.

financial aspects

Fiction, as I said, is generally financed with government subsidies from film funds, often combined with money from a TV broadcasting company. Increasingly, film makers are looking for other money sources such as crowdfunding and private investors, as regular subsidies are becoming scarcer and makers can't be bothered with often long-winded and energy-consuming grant procedures. Feature films and series are also being produced by a widening variety of channels and platforms, which themselves offer specific financing opportunities.

In the case of a more regular production, though, a broadcasting company will often be involved in the financing. Drama series for public broadcasting companies will largely be subsidised by government bodies. Such grants are unavailable to commercial broadcasters; they have to pre-invest, relying on future advertising revenue, sponsoring and surreptitious advertising, in the hope of generating a profit.

The budgets allocated for music and sound design can vary greatly, depending on the type of feature film or TV drama. In the Netherlands, there are drama formats for television that offer new directors a stage with a relatively low budget, but Dutch feature films are also sometimes made in co-production with foreign producers, with relatively high budgets for music and sound. TV drama can be lucrative in terms of music copyright, as TV ratings are (still) high and there are therefore

large audiences for the music. Below is an example taken from the website of the Buma/Stemra, the organisation that protects the interests of composers, authors and publishers in the Netherlands.[317]

The fees for using music on radio and television are paid by the second. The value per second varies from year to year and from channel to channel.

Radio and TV

When a music work you have written yourself with a duration of three minutes is played on:

1 Radio 538, you receive EUR 34.36:	180 seconds x EUR 0.191 p/s
2 Radio 3FM, you receive EUR 16.80:	180 seconds x EUR 0.093 p/s
3 Q Music, you receive EUR 31.25:	180 seconds x EUR 0.174 p/s
4 RTL 4, you receive EUR 89.10:	180 seconds x EUR 0.495 p/s

The figures in the calculation example are based on the collection year 2017

Example: a TV drama series consisting of eight 50-minute episodes has 25 minutes of music for each episode. That is a total of 200 minutes, or 12,000 seconds of music. When broadcast on RTL4, that generates EUR 5,940 in copyright. The series will often be repeated on other days and at other times and can be viewed online, so the amount payable by Buma/Sremra will be several times higher. Drama series are sold abroad, too, where the financial value per second of music is far higher, as the number of viewers is considerably higher than in the Netherlands.[318]

As a composer, in such situations you will regularly be confronted with production companies and TV broadcasting companies asking you to register your music in a music publishing company that is part of or affiliated with that company. In the case of instrumental music, the copyright revenue will then be divided 50/50 between the composer and the music publishing house. You may be presented with a *kickback contract*, too, in which you grant a further share of your 50% to the publisher. A producer may even sign as co-composer, halving your original 50%. There isn't enough scope in this book to explore these (often

317 www.bumastemra.nl

318 Monetary values are also established for music in audiovisual productions distributed online and on demand.

illegal) practices and problems. Suffice to say that you would be wise to do your research and get sound advice before signing such contracts. Fortunately, there is an increasing social and political tendency to combat such practices but, in reality, they still persist.[319]

As a sound designer, you will not be troubled by this problem, as copyright only applies to music.[320] You will generally be hired on a daily or weekly basis, as your work is seen as partly (and by the producer often entirely) facilitatory. The composer, on the other hand, will be paid a *fixed fee*.[321] On top of practices such as co-signing and kickback contracts, you may even be asked to work for free, as 'you will soon be earning enough on the basis of copyright'.[322]

other types of programme

Over the years, many entertainment programme formats have been developed in addition to quizzes and TV shows. Well-known examples are *reality TV*, in which real people (rather than characters) are followed in their daily activities, and *talent contests* such as *Idols* and *The Voice*. This type of TV programme is produced by either a TV broadcasting company or a production company. A composer may be involved in developing the format for such a programme, primarily by designing the *audio identity* (often referred to as the *leader* or the *tune*). This entails not only the title music and sounds for the programme, but also various derivatives, such as *bumpers*, *stingers* and *underscore*. These are stored in a library: the leader package.[323] In terms of content, designing such a leader inter-

319 Organisations that protect the interests of (media) composers in the Netherlands include the BCMM (www.bcmm.nl) and NTB/VCTN (www.ntb.nl/muziekauteurs/).

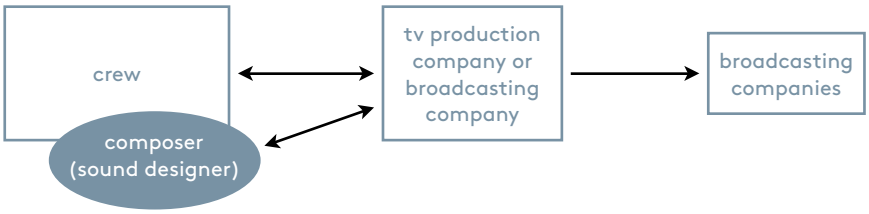
320 This prompts the following question: 'When does sound become music?' You can quite reasonably argue that when an ambience has a recognisable pitch, for example, that constitutes music. There are also sound designers who register such ambience as music with (copyright) collecting societies and are paid for them.

321 A fixed fee is a fixed amount for which you, as the composer, deliver the end product (the music). In principle, you have to pay all additional costs, such as session musicians and studio time, from that fee.

322 You may even be asked to 'work for nothing' when it is uncertain whether the production will be broadcast. That means 'investing' as a composer and possibly not seeing any return on your investment in the end.

323 *Bumpers* are derivatives of the musical or sound identity, used to announce a (commercial) break in the TV programme. *Stingers* are similar to bumpers, but then shorter and are often used for a transition in a TV programme (a change of scene, for example). An *underscore* is a musical layer behind a scene from a TV programme, usually with dialogue, that serves to illustrate the passage of time and/or build suspense.

faces with the context of branding, which is discussed in the following paragraphs. Likewise, as a composer you will first have to win a pitch, as a number of composers and music production companies will be asked to submit one or more demos based on an initial brief. The quality of that brief can vary enormously, from very vague and uninformative to highly specific with the right terminology and explanatory examples. The advantage of this genre is that the pieces of music are relatively short (5 to 20 seconds), so in principle you won't be spending weeks or months on a composition. A sound designer is not generally involved in this process, as the leader and library are usually of a musical nature.



design process

The above model looks simpler than the organisation model for fiction productions. This is because, as I mentioned, a composer will primarily be involved at the development stage of the programme. Once the format for the programme has been fully developed, the composer can also start composing the leader and the associated library, which can then be deployed by the programme's direction team. During the development stage, contact is generally with the producer rather than a director as the director has quite a different job than when producing fiction. Games programmes and suchlike are regularly broadcast live, with the director actually directing the 'montage' live. If there is any montage, then that will be done in accordance with a pre-determined format and a number of different directors may be deployed in the course of a TV season.

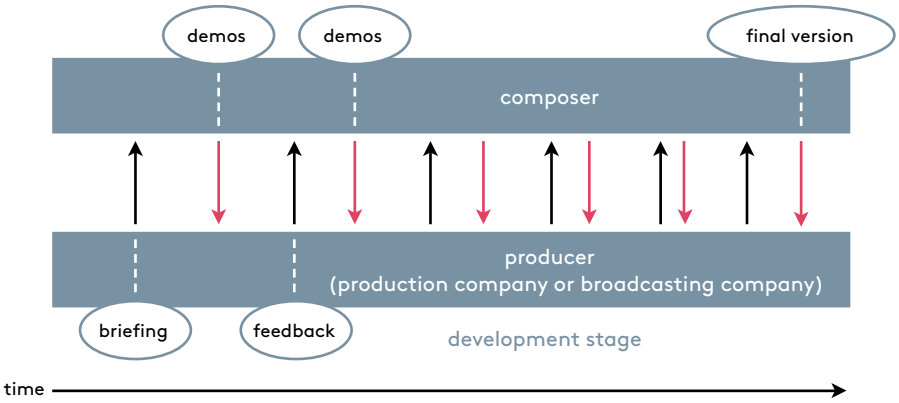
The design process for a leader is complex in the sense that you only have a limited number of seconds to establish exactly the right music. In this case, the 'right music' means it has to be aimed at the target audience, get them in the right mood, indicate the type of programme

they are going to watch and be recognisable. It also, however, needs to have the necessary stratification to prevent it from becoming boring after being listened to a number of times. Composer Martijn Schimmer on a number of characteristics for a good leader:

You're standing in the kitchen making a cup of coffee, you hear the tune and immediately recognise the programme it belongs to and you feel like going and watching it. That's how it should work. […] What channel is it on? What time? Does it have a live studio audience? I made an urgent, neutral leader for a current affairs programme that features government ministers and professors. A serious programme. Miljoenenjacht [Who Wants to be a Millionaire?] is at the other end of the spectrum. That's all about sensation. A tune like that has to be big. You take the time slot when the programme airs into account, too. A leader for a breakfast show is more positive and lighter than one for a late-night current affairs programme.[324]

As input, the production or broadcasting company will already have provided you with an initial brief for the pitch. That doesn't mean you're home and dry once you've won the pitch. It may be followed by a second, more specific brief with a number of music examples. In this context, the composer's design process is characterised by bouncing a lot of demo versions backwards and forwards between them and the producer, as the illustration below shows. This process can take weeks as, quite rightly, a great deal of importance is attached to getting the right leader. Depending on how the programme is organised and scheduled, you will also have to coordinate with a visual leader. If it's already ready, then that gives you a good reference frame in terms of the timing and style of the programme. There may only be a moving storyboard, though, but that at least gives you the timing. Sometimes a visual leader consists solely of a rapid montage of images from future episodes set to your music. From that point of view, the process can vary greatly, the constant being that developing a leader demands precision. Once you've found a definitive version and, therefore, a style, you can start designing your library. You will need to design cues, delivered in different lengths and stems and related to the leader, which can then be used as bumpers, stingers and underscore.

324 Schimmer 2019



Working as a composer in this context is relatively overseeable: you generally have contact with the producer, who represents the TV production or broadcasting company and is authorised to make decisions. Complexity of content is essential, though. As described above, you can get through quite a few versions before one is approved. In a similar situation, that leader package may be not for a specific TV programme but for a TV channel as a whole. This, too, is an overseeable context in itself, but the content is perhaps more critical as what you are being asked to do is 'establish' the identity of an entire television channel. Composers and music production companies will be invited to pitch for this design process, as well, to ensure sufficient input and ideas from which to choose.

financial aspects

These TV programmes are financed by public broadcasting companies from public monies plus advertising revenue. Commercial broadcasters apply the financing model described earlier. The 'constructions' for music copyright are the same as for fiction. This kind of programme generally features less music than fiction programmes, but formulae are frequently sold abroad, so revenue from music copyright can accumulate enormously.[325]

325 The formula for John de Mol's *The Voice* has been sold to more than 150 countries and Martijn Schimmer – SMP Studios hold the music rights.

information

The media and channels for which informative audiovisual productions are made correspond to some extent with those for fiction: TV, film, VoD, online, etc. This applies to reports and documentaries. Another context is that of the commissioned film: informative programmes such as educational films and instructional films aimed at a specific target group.

reports

Reports are chiefly produced in the context of television. Often, they are part of a news bulletin or current affairs programme and produced in a relatively short period of time. In general, there is no role for a composer or sound designer in this type of programme. The production time is simply too short and such reports focus on the textual content, in other words dialogue. Broadcasters also have free access to 'world music repertoire', so an editor can choose freely from virtually any music to support the montage of the programme.[326]

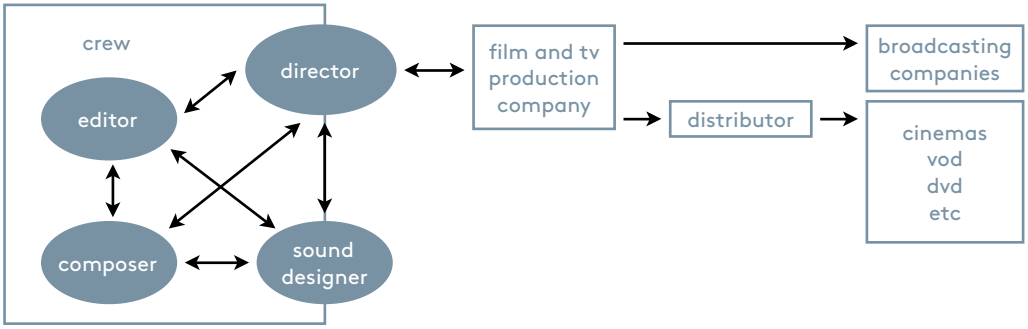
documentaries

The context surrounding documentaries is quite similar to that for fiction. Documentaries are often produced for screening in cinema and on television and may be sold abroad and for further distribution on DVD, Blu-ray, VoD, etc. The Netherlands has a strong tradition of documentary productions with internationally-famous names from the past including Joris Ivens, Bert Haanstra, Johan van der Keuken and Heddy Honigmann, and the internationally-renowned IDFA Festival.

If we zoom in closer, we can see that there are differences between documentaries and fiction. In the Netherlands, documentaries are closer to author's cinema; they are often initiated by a maker/director, whereas fiction is more often initiated by the producers. There are also production-related differences. The crew is often as small as possible to enable rapid, flexible response to unexpected developments and situations that may be interesting for the story. The number of shooting days

326 Both public and commercial broadcasting companies have contracts with the copyright collecting societies so programme makers can freely use any music in their programmes for these companies. Music by music writers who have expressly indicated that they do not consent to this may not be used.

is generally no different from fiction. Those days are spread out over a far longer period, though, with a great deal of footage being shot. With such a large quantity of material, plus the fact that there is no strictly-prescribed screenplay for a documentary, the editing takes far longer and, in fact, the documentary is made in the montage. The director will be involved in the editing from the beginning while, with fiction, a rough cut will often be made during shooting. Visually, it looks like this:



design process

The sound designer, in particular, may already play a role at the general stage, in which the documentary plan is developed. That plan may include a sound plan: a concept describing the role of sound in the documentary and the implications for the actual shooting period. If there is a main character, for example, who is being followed for a while, all their relations (family, friends, neighbours) may also feature in the documentary, which is informative, too, giving the audience a feel for the environment in which the main character lives. In itself simple conclusions and ideas that result in the need for sufficient microphones, for instance, so that the dialogue with those relations can be captured properly. To allow the surroundings to play a role, the soundman may have to find a number of specific sounds from those surroundings, which they can use later for designing in post-production. All in all, with a documentary, the focus is on production sound, as the teacher and researcher Leo Murry explains:

Compared to fiction filmmaking, sound in documentary filmmaking often has a more obvious production bias. Unlike fiction films, there is no option to rerecord poor speech recordings later in a studio. This does not preclude the possibility that some parts of the soundtrack might still be created or manipulated during post-production; however, the emphasis is usually on authenticity or truthfulness. As with drama filmmaking, the sound may be modified or additional sound may be incorporated for aesthetic reasons. For example, unwanted sounds may be removed, such as microphones being bumped. Elsewhere, when the recorded sound quality may not match the pictures and thus gives the appearance of inauthenticity. Sounds may be added to the soundtrack to make it appear more realistic. Occasionally, the accompanying sounds may need to be recreated, for example, when a sequence is used for which no location sound was recorded. Or it may need to be replaced, for example, where copyrighted music is recorded during filming but cannot be used without payment of excessive licensing fees.[327]

As I mentioned, a great deal of material is shot, as there is simply some degree of uncertainty when making a documentary. You don't know exactly what is going to happen, how a situation will develop and what the main character will experience, for example. You therefore need as much material as possible for post-production to work with in terms of both picture and sound. All that material requires administration, as documentary director Coco Schrijber relates:

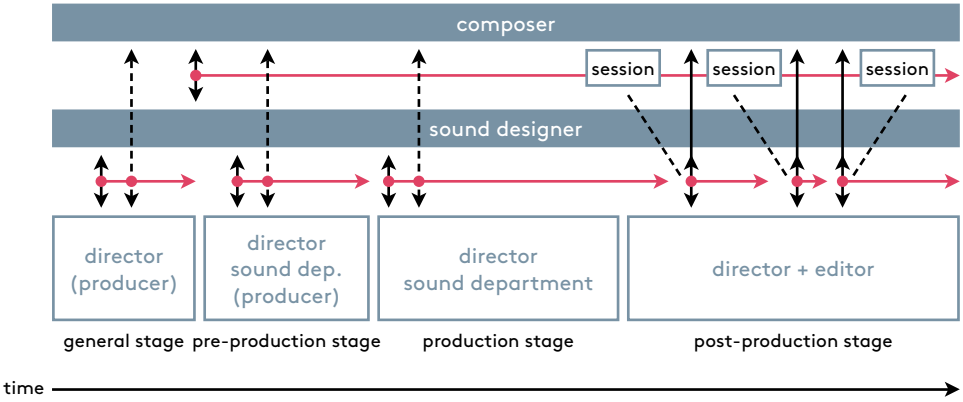
I note down everything we've recorded on set (sound, picture). I also get a whole lot of 'wild sound' recorded. I write it all down, to give me an overview of the material available for post-production.[328]

In view of the role of music in documentary (aimed more at association than dramatic development) it's less important to bring in the composer at the preparation stage. It is important for the composer and the sound designer to meet up early, though, so they can come to agreements on their collaboration during post-production. The sound designer can then also let the composer know about any discussions they have had with the director with regard to working methods. If music is to play a role during recordings or if it has to fulfil a specific function in the documentary, then it's advisable for the composer to be present at the preparation stage.

327 Murray 2019: 135

328 Schrijber 2010

The director is the central decision-making figure in production and will collaborate intensively with the editor in post-production to achieve the final cut. The same applies to the collaboration between the composer and the sound designer, in which 'searching and experimentation' will often play a major role. As composer or sound designer, you will therefore be involved for a longer period in such a production. This certainly doesn't mean you'll be working full time during that period, but the process simply takes longer due to that 'searching and experimentation' in terms of both image and sound. Throughout the entire design process, you will primarily be in contact with the director, as they function as the 'lynch pin' and you may have a number of sessions in the sound studio with them, experimenting with sound layers, specific sounds and acoustic instruments to find the right musical or sonic atmosphere. The director may then take a number of fragments from those experiments and try them out in the visual editing. Remember Trent Reznor and Atticus Ross' improvisation sessions for the film *The Social Network*, for example. The time the process takes as a whole also gives you, as composer or sound designer, the room to stand back, so you are better able to validate your work. The collaboration methods described in chapter 2 (exchanging material, etc.) can also be used, though. A visual representation of the process with a number of sessions as described above looks like this:



Here, the producer is clearly more distanced than with a fiction production. For the composer and the sound designer, the major 'player' is the director. The editor has less of a say here, as the editing is done together with the director, unlike with fiction, when the editor often does the

rough cut. The sound department is an important discussion partner, as well, when it comes to the shooting period and the implications of the sound concept for that period.

financial aspects

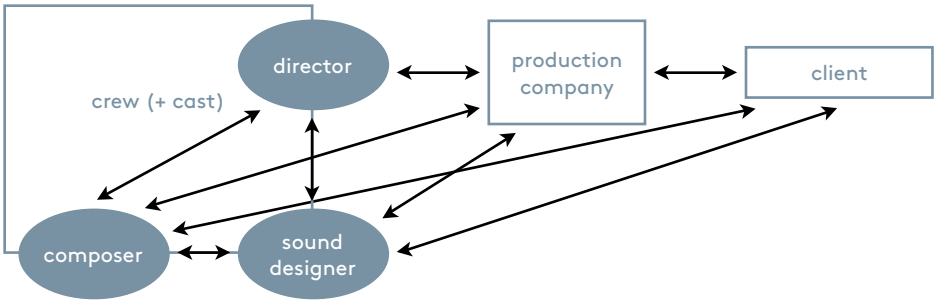
The financing procedure is similar to that for fiction and involves government subsidies (funds, broadcasting companies, etc.) plus possible crowdfunding and money from private investors. Depending on the design, a social organisation or private body may also help with the financing. The copyright issue is similar to that for fiction. Often, the amount of money this entails is considerably less and the producers are more focused on content.[329] As a composer, you are therefore less likely to be confronted with the construction with a music publishing company and/or a kickback contract. As a sound designer, you are approached and hired in the same way as for fiction: on an hourly, daily or weekly basis.

commissioned film (informative)

There are two contexts for commissioned films. *Educational and instruction films* are aimed at providing a specific target group with specific information. *Corporate films* are aimed at establishing a brand and therefore come under the category of branding, which is dealt with in the following paragraphs.

In the case of educational and instruction films, a company, a private body or a government body commissions a production company that generally specialises in this type of production. Over the course of the years, such a production company will have built up specific experience. They will therefore be skilled at translating the client's brief into an idea, a concept and a screenplay for an audiovisual production that fulfils the client's expectations and requirements, which generally boil down to efficiently and effectively communicating certain content to a specific target group. Numerous (mixed) forms are employed to achieve that communication: drama, animation, reporting, documentary, interview, cabaret, etc. The production company hires the necessary crew and compiles the cast in the case of (any form of) fiction.

329 A one-hour documentary can't be compared with an 8-part or 12-part drama series from that point of view. On average, less music is used in documentaries than in fiction, too.



To a certain degree, the above illustration corresponds with the previous ones, except that the client (the communications department, for example) will want to communicate directly with the composer. Unlike the previous contexts, this type of production is financed entirely by the client, who will therefore often want a greater, more direct say in the what and the who and be able to approve the various parts of the making process. This will be reflected in the compilation of any cast, for example,[330] but also in the music. At some point, it's wise to find out from the producer or the director who has any say in deciding on the music.

design process

This is an interesting context because, as the composer or sound designer, you may be involved in a wide variety of productions, in which all kinds of communication are employed. You may have a famous stand-up comedian having a conversation with an animated character, after which that comedian steps into a fully-animated world and has all kinds of adventures there, steps out again, then finds themself as a voice-over in a more documentary part, ending in a dramatised scene in which they play a character, performing a gripping scene together with a number of other actors. Or there may only be a 'talking head'. So the associated design process can take numerous forms and, from that point of view, there are no standard situations. It's therefore hard to say at which stage and at which moment you should be involved in the design process. The principle of involving the composer and the sound designer from the general stage onwards still holds, as possible auditory

330 If the client is not keen on a particular actor, then they won't be cast.

embellishment of the production can then be discussed. Depending on the outcome of that stage and the concept and screenplay for the ultimate production, you can decide the points at which further interaction and collaboration should take place. In principle, that interaction and collaboration correspond with the situations outlined for fiction and documentaries. One evident difference is that the production – and therefore the sound track – has to clearly communicate 'the message'. Having your own artistic vision is fine, as long as it serves the communication.

As a composer, in this context you will have dealings with not only the director (and often the producer, too), but also the client. In concrete terms, this can mean presenting your music to these people and the client ultimately deciding. It's important to organise this decision-making process so you retain some kind of control. Be prepared for all those present during the presentation to make comments on your music. The director and the producer are being paid by the client and can't actually keep their mouths closed during such a presentation as they will be invoicing for their presence afterwards. In such a situation, if you only turn up with one musical idea or demo, nine times out of ten it will be rejected as those involved are simply expected to be critical. You can avoid this by offering choices, such as variations on the same musical idea, or different ideas. To some degree, you can steer the feedback yourself by deliberately adding subtle 'errors' to your demos that will undoubtedly attract criticism but you already know how to solve. Do manoeuvre carefully, though; you don't want them to reject it. The demo must be of a high enough quality to be chosen, but it must also leave enough room for improvement. All in all, therefore, it's advisable to thoroughly prepare these sessions and be aware of the context, the people involved and their possible position in relation to the client.

As sound designer, you are unlikely to be confronted with this type of situation, as you will be seen as facilitatory in this context, save in exceptional situations (in which sound really plays a major, decisive role). As a rule, the client also attends the final mix. If, as sound designer, you do have to do that final mix, then you need to interact with the people present at the mix, including the client. You therefore need to assess the mutual relationships between the client and the director, for

example (to what extent does the client leave the decision-making to the director?).

financial aspects

The financing for such productions comes, as I mentioned, directly from the client. Copyright generally plays no role, as the productions are for specific internal and therefore small target groups. Here, too, as a composer you will be paid a fixed fee, while a sound designer will be hired on a daily or weekly basis.

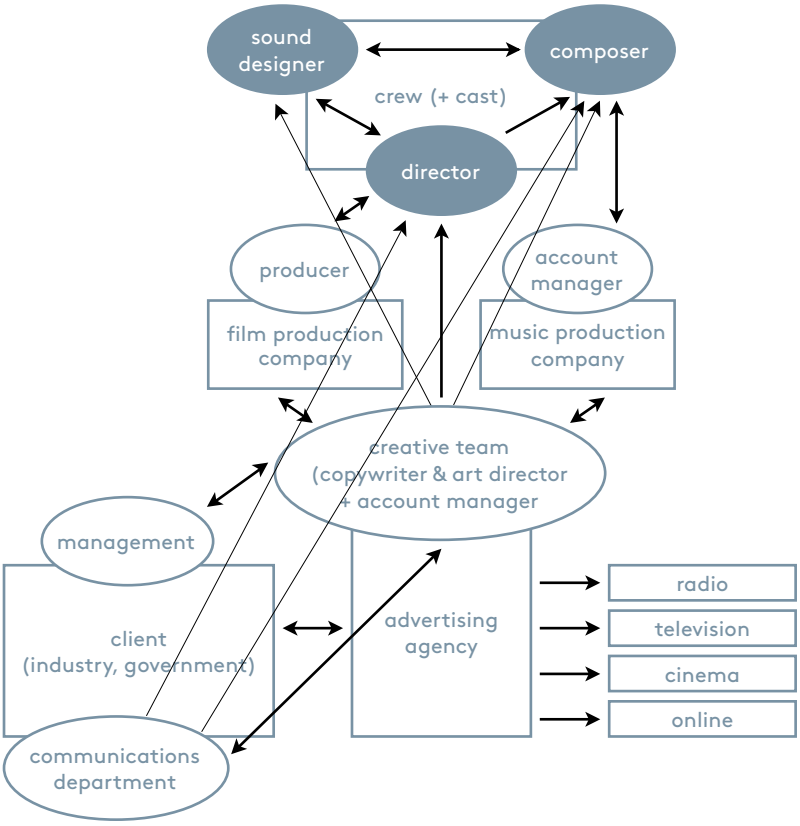
branding

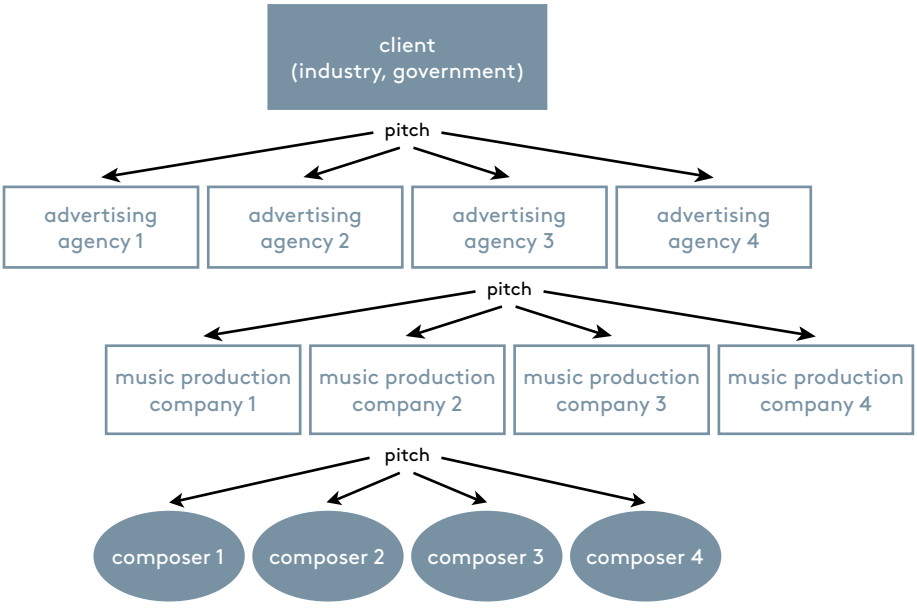
Branding takes many forms and is still a growing market, with its own practices and theorisation. *Sonic branding* is one of the latest dimensions in this area and includes the sound logo. This is an interesting and relatively new area that could do with its own book. Composer Jesse Grooten on the relationship between advertising and branding from an auditory perspective:

I've come to the conclusion that music for advertising is part of sonic branding, but that over the years it's become increasingly less about the brand itself. Advertising agencies are specialising in this, focusing on only a small part of a brand. The music in commercials has to contain the message of the story and, in that, the core values of the brand are secondary. Advertising productions are approached like little films and the music has grown accordingly into film scoring. Sonic branding refers to the sound and music across the entire line of the brand. The advertising partly represents the vibe a brand wants to portray but it's often inconsistent and it's got less to do with branding than with the music made on the basis of the brand's core values. The time and money that goes into it are turning music for commercials into an independent industry.[331]

This book focuses chiefly on narrative through the sound track, so I will restrict the context for branding to the advertising campaign and then primarily to the audiovisual expressions such as TV, cinema and online commercials and corporate films.

331 Grooten 2019


sound designer
composer
crew (+ cast)
director
producer
account manager
film production company
music production company
creative team (copywriter & art director + account manager
management
client (industry, government)
advertising agency
radio
television
cinema
online
communications department


client (industry, government)
pitch
advertising agency 1
advertising agency 2
advertising agency 3
advertising agency 4
pitch
music production company 1
music production company 2
music production company 3
music production company 4
pitch
composer 1
composer 2
composer 3
composer 4

These types of production generally receive no government subsidies and are usually financed entirely from the market. This might seem simple and overseeable, but in reality it's generally quite a bit more complex. After all, there can be a lot of interested parties in the creation of an audiovisual production aimed at branding, as the (financial) interests are often great.

commercials

As part of an advertising campaign, in terms of costs, cinema, TV and online commercials can vary from low budget (a TV commercial designed for local broadcasting) to very-high budget (the various forms of commercials for cinema, TV and online that are part of a global advertising campaign for Nike or Coca-Cola, for example). The complexity of the associated production is proportional to the budget. The greater the interests, the more everyone will want to have their say in the music, for example. The top representation on the previous page represents such a complex context.

In practice, the context is even more complex, as there have to be pitches prior to the above situation: the client invites various advertising agencies to pitch and the one that wins the pitch asks the music production companies and the associated composers to pitch again, creating a 'pitch tree' (see the bottom illustration on the previous page).

After a pitch, the client chooses an advertising agency to develop an advertising campaign, generally with a creative team plus an account manager. At least the communications department and, often, the management will be involved in developing the campaign. At some point following a pitch, a film production company and music production company will be chosen. Advertising agencies used to simply hire a composer, but these days they almost always hire a music production company, which then calls on a number of composers[332] to make demos based on a brief. This clearly illustrates the advantage of a music production company over an individual composer. Naturally, an advertising company can write out its own pitch for a number of composers, but it's easier to delegate the task. What's more, music production companies employ *music researchers* to find example tracks, which are

332 The term *music producer* is also used.

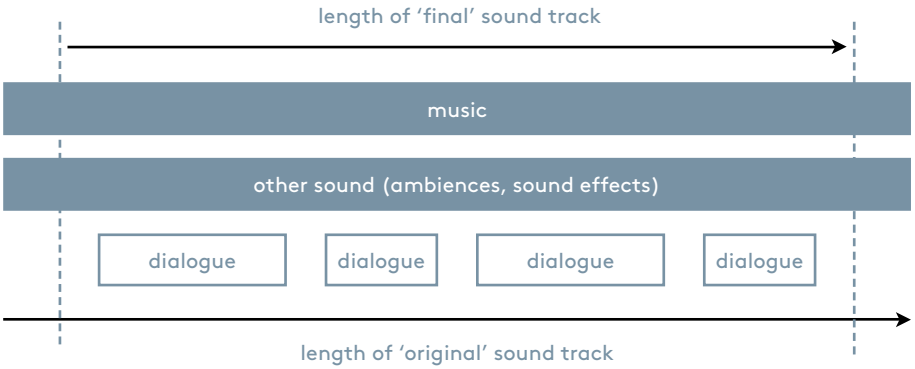
then regularly used as temp tracks for the editing and briefing. The brief is developed by the account manager, in close cooperation with the advertising agency. Working with the music production company, the composer elaborates the chosen track into a fully-fledged end product.

design process

The composer's design process for such a project is quite different from the description in chapter 3. The music production company gives you a short brief,[333] on the basis of which you have to compose one or more demos, usually in a short space of time.[334] There is generally no time for standing back, side-tracking or experimentation. You will also frequently have to take musical trends and hypes into account.[335]

A musical form often used for commercials is the 'doughnut principle'. You work with a musical cell that you repeat as often as possible during the commercial, bringing it back at the end, creating the 'doughnut' (a closed circle). Repetition creates a recognisable, catchy motif that becomes associated with the product from the commercial.[336]

Another approach is to create a kind of snapshot of reality. In terms of both image and sound, the viewer should get the impression that this is a little slice of reality. The sound track for such a commercial looks like this:



333 The *brief* also includes a number of example tracks.

334 You may only be given a day to do it.

335 New trends and hypes are emerging all the time and, as a composer, you have to be abreast of them. Example: after the success of Yann Tiersen's film music for *Le Fabuleux Destin d'Amélie Poulain* you heard a lot of similar music cues in commercials.

336 You can compare this to a hook or a catchy riff in a song.

Both at the beginning and at the end, the commercial sounds as if it has been cut from a larger whole: a snapshot of reality, in which we as the audience are allowed to take a peek.

Yet another approach is one in which the key words are 'authentic' and 'real'. Like the above snapshot of reality, clients often want to create the impression that the commercial is 'real'. They then often use music with 'real' instruments, such as an acoustic guitar (the ukulele is also popular), and vocals for the sound track. The entire thing is produced in such a way as to give a feeling of authenticity. No commercial pop sound is used, instead the approach is lo-fi, leaving 'mistakes' in the music uncorrected, for example, stressing the human aspect. A music production company produced the score for a car commercial by getting a local band in New Orleans to record a song in a local recording studio, to make it all sound as 'real' as possible. Based on this approach, existing songs are increasingly being used for commercials and famous singer-songwriters are being asked to write special numbers.[337]

Another characteristic of composing for commercials is that you have to come to the point from the very first second. While a narrative development is generally given time in a feature film, there is no room for that in a commercial. The visual track will include images that immediately provide the right information and/or evoke the right association and emotion. The sound track has to fulfil the same requirements; there is little or no time for anything like a build-up or an intro. This is why sound plays a major role in commercials, greater than in feature films, for example. One of the characteristics of sound is that, unlike composition, it doesn't need much time to generate an association or emotion. You can only experience a chord as consonant or dissonant once you have the further musical context: the subsequent or preceding chords.

Regardless of the approach you adopt or are asked to adopt in the brief, your demos must already be of a high quality in terms of sound and production. You can't just deliver a few rough music sketches. If one of your demos is chosen, it will have to be mastered, at which point it's wise to analyse what its strength is. The final version may miss something that was in the original, which will cause problems. Mastering is

337 In the advertising industry, combining an existing song and a commercial is referred to as a *sync*.

therefore generally done in collaboration with the music production company, which therefore remains in control right up to the end product.

In principle, throughout this process you will only be dealing with the music production company's account manager, which keeps things simple. The diagram above, however, shows that you may also have contact with the client's communications department and the director, for instance. In general, this will be avoided, to keep the process as overseeable as possible.[338]

A sound designer will frequently be hired for the sound design of a commercial. Alternatively, the composer may include the sound design in the composition or an in-house engineer may take on the sound design, including the final mix.[339] The construction will be decided by the medium for which the advertising campaign is intended. If it is to be solely online, then a simple stereo mix will suffice, but a campaign aimed at cinemas can necessitate a Dolby Atmos mix. If you, as sound designer, are doing the final mix, you will have to deal with a number of clients, including the music production company, the advertising agency and, for example, the end client's communications department. In such a situation it's important to be aware of the context, the people involved and their position in relation to the end client. You really need to know who makes the final decisions.

financial aspects

In this context, as a composer you will regularly be confronted with the copyright practices I mentioned earlier. It sometimes goes so far that if, for example, you and a colleague composer have composed the music together for a commercial, the director of the music company and his wife will both sign as co-composers, halving both your copyright shares. It's also often contractually stipulated that you may not publicise – on your own website, for example – the fact that you are the composer of that commercial; the music will be in the name of the music production

338 Apart from which, it's not in the music production company's interest to put you in direct contact with the client, who may then cut them out.

339 There are music production companies with their own studio (including sound engineer), where commercial music is regularly mastered.

company.[340] There is usually a fee for the demo phase. If your track is chosen, the ultimate fee will become 'subject to negotiation', in which issues such as signing with the publishing house in question, kickback contracts and the co-signing of (fake) composers will be discussed. As a sound designer, you will be hired on the regular conditions.

commissioned film (branding)

This is the other variation on the commissioned film, referred to as corporate films. A corporate film is, in fact, a long commercial and the variety you will encounter is similar to that for commercials: from low to high budget. In the first instance, it might be a short, online film, made with a smartphone, rapidly-edited product lines with fun sound effects and stirring music. In the second instance, it can be a high-quality film shot at exotic locations with orchestral music and a famous actor who takes the audience on a journey through the company in question.[341]

design process

The design process for a corporate film can best be seen as a combination of the process for a film, as discussed in chapter 2, and the process for a commercial, as discussed in the paragraphs above. The production can be seen as a long commercial aimed specifically at establishing a brand, organisation, company or institution. As a composer or sound designer, you may be confronted with the company or organisation's existing audio identity, which you then have to bear in mind. Most makes of car, for example, have a clear sound logo, which will have to be incorporated into the sound track in some way. Sometimes, the sound logo can determine the entire sound of the film. The sound track also has to focus specifically on creating certain associations and emotions, such as: 'What an environmentally-conscious company!' or: 'What a wonderful product they make!' Most of the time, therefore, it's more about emphasising a positive feeling and a positive association with the brand than about human relationships and the associated emotions. From that point of view, it's similar to a commercial.

340 All this in addition to signing with the music production company's publishing company and any kickback contracts.

341 Take George Clooney and Nespresso, for example.

The composer will generally play the major role here, although the sound design can also be important, creating a great sonic image for the visuals of a product line. The question here, which also has an ethical side, is to what extent such a sonic image should correspond with reality.

As with the other variety of commissioned film (information) and with commercials, the client will be involved in production-related decision-making. For the possible implications, take a look back at the paragraphs regarding informative commissioned films and commercials.

financial aspects

In this context, the regular fixed fee for the composer and the hourly, daily or weekly payments for the sound designer apply. The problems I touched on with regard to copyright for commercials (and the associated financial arrangements) will be less common for corporate films, as there will generally be no global screening for audiences of millions.

in conclusion

Looking at the field of audiovisual productions as a whole, there is clearly an increase in mixed forms in terms of both content and financing. Depending on the content, TV programmes combining information and branding are frequently co-financed by organisations such as UNICEF. A documentary is accompanied by an educational programme, giving the documentary-makers access to financing from educational sources. A bank wishing to table the topic of 'integrity' may commission a thrilling drama series in which the cream of the national acting scene illustrates the possible dilemmas.

Slowly but surely, just how much the sound track contributes to audiovisual productions is being acknowledged. Take the article in the prominent media journal Variety, entitled *Sound Is 50% of the Movie, but Hollywood is Often Tone-Deaf*:

> George Lucas has said that sound is 50% of the moviegoing experience. [...] It also leads to an ongoing sore point: In the early days, sound people were technicians, trying to wrangle new machinery; but to call current

behind-the-camera folks "technicians" or to call these "tech categories" is to overlook their enormous creativity.[342]

The final sentence in this quote pinpoints the fact that, unlike the composition of film music, those disciplines that come under sound design are often still seen as technical disciplines. Fortunately, there are exceptions, but there is still a long way to go. Sound designers themselves can play a role here, by giving any disciplines with which they collaborate more insight into their work and the underlying motives and creative choices. Unfortunately, though, time is a prohibitory factor here and not only for the sound designer; while all these disciplines are dedicated and willing to go the extra mile and it's technically quite possible, interdisciplinary collaboration is still poorly accommodated within the design process for an audiovisual production. So a lot can be done in this respect, too, without it automatically having to take a lot longer (or cost a lot more). Involving the sound designer and composer earlier in the initial stage of an audiovisual production would already be a step in the right direction.

From the point of view of the designer, too, the primary perspective in this book, there are growing similarities between the various contexts. Often, what we are dealing with is a *meta design*. The client or the producer has then already set out an outline of the audiovisual production to be designed, or developed an extensive set of preconditions, so there is, in fact, a meta design to which the eventual designer(s) have to adhere. As far as the sound track is concerned, this is already common practice, especially for branding, but also in entertainment. Such an approach means a composer or sound designer ultimately becomes a creator; someone who creates the end product based on the (meta) designer's specifications. Those specifications may be in the form of a temp track or temp sound design, or a highly-detailed brief (with temp track excerpts) that describes, second by second, what has to happen in terms of music. This approach is prescribed by clients who, due to ever-greater financial interests, are increasingly keen to be in control, and it is facilitated by technological developments, allowing non-designers to relatively simply produce such a meta design.[343]

342 Gray 2018

343 In addition to the temp track and temp sound design based on existing music and sound design, this can entail software such as GarageBand, which enables non-musicians to produce music cues that sound good and can then serve as a meta design.

It's also, naturally, an approach characteristic of an industry in which clients want as much control as possible over the industrial process and, therefore, the end product. There is nothing wrong with an industry, as long as there is an antithesis, in this case the arts, and the two can interact and influence one another. An environment in which an individual, working together with other disciplines, can transform an original idea into an emotive, meaningful audiovisual story. It's up to us – sound designers and composers – to allow those other disciplines to experience the often still unknown and unexplored possibilities of the sound track.

there is nothing wrong with as long as it has in this case

an industry

its antithesis,
the arts


one of the
most obvious forms
of sound is


silence

acknowledgements

The book *The Sound Track* came into being by combining a number of perspectives. This includes my professional practice as a media composer and sound designer, in close collaboration with Willem Schneider. It also includes my teaching practice as a lecturer in Composition & Sound Design for Media at the School of Music and Technology of HKU University of the Arts Utrecht. All this is combined with long-standing practical research into the design processes of media composers and sound designers and collaboration with other disciplines in audiovisual productions. During that research, I was able to speak to and interview graduates, directors, editors and colleague composers and sound designers. I would like to extend a warm word of thanks to Arno Dierickx, Erik Griekspoor, Johan Hoogewijs, Wouter Jansen, Martin Koolhoven, Marc Lizier, Paula van der Oest, Eric Oosthoek, Han Otten, Herman Pieëte, Peter Rump, Michel Schöpping, Coco Schrijber, Arnoud Traa and Gys Zevenbergen. I am also grateful indebted to international colleagues such as Stephen Deutsch, Yati Durant and André Bellmont, with whom I was privileged to have many conversations about 'the business'.

I would like to thank Jan IJzermans for his many years of support, involvement, friendship and positive criticism at the right moments. Thanks also to Nirav Christophe and Marjanne Paardekooper and, therefore, the HKU, for giving me the opportunity to (finally) complete this project. Thanks to the Dutch Film Fund for their financial contribution and their enthusiasm for the book. Thanks to colleague lecturers Kees Went, with whom I developed a Sound Design curriculum, and Hans Timmermans and Alex Geurink, with whom I have developed projects on composition for the media. A final word of thanks to Noortje Wildschut, Chris Stenger and Danny Weijermans for their organisational and contentual feedback. And a big thank you to my beloved Patty Stenger, who thought she was finally getting a husband who 'would be taking it easy'… fortunately she, herself, is a writer.

notes

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