

# Music and Film

## A SUMMARY OF SELECTED RESEARCH RESULTS

Heike vom Orde

**This article provides an overview of selected research results on the functions and effects of music in film.**

Music in the context of film and television has thus far played only a secondary role in the research discourse of media, communication and music studies. This is all the more astonishing because music can make a significant contribution to the overall impact of a film (Herget, 2021, p. 22). For example, it can be pivotal in making a scene comical, threatening or tragic, and in extreme cases it may provide a counterpoint to the visual information on screen (Krohn & Tieber, 2011, p. 147). In addition, directors, composers and viewers are united in their firm belief in the impact of film music (Bullerjahn, 2018, p. 181).

Herget, Ann-Kristin (2021). *On music's potential to convey meaning in film: A systematic review of empirical evidence*. *Psychology of Music*, 49(1), 21-49.

Krohn, Tarek & Tieber, Claus (2011). *Filmmusikforschung. Zum Stand der Dinge*. *Medienwissenschaft*, 28(2), 144-155.

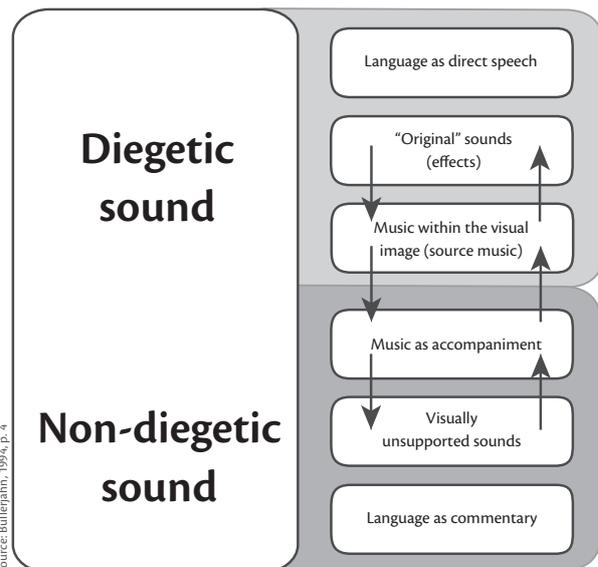
Bullerjahn, Claudia (2018). *Psychologie der Filmmusik*. In Frank Hentschel & Peter Moormann (Eds), *Filmmusik. Ein alternatives Kompendium* (pp. 181-229). Berlin: Springer VS.

### PRINCIPLES AND METHODS OF FILM MUSIC RESEARCH

The primary focus of film music research is the role of music as a **signifier** in film. The auditory composition of a film consists not only of music but also of active sound design. There is therefore a fundamental distinction between diegetic and non-diegetic sound (Ill. 1) (Pauli, 1981, p. 14 ff.). Diegetic sound re-

fers to those events that are part of the diegesis, i.e. the origin of the sound can be ascribed to the visual events. This is the case, for example, when, as part of the film's plot, visible instruments are played or music sounds from a radio or loudspeakers that can be seen in the visual image. Non-diegetic sound on the other hand encompasses all acoustic events that are not part of

the filmic reality and can therefore not be perceived by the film's characters within the diegesis (e.g. background music). Film music in its narrower sense is understood as non-diegetic, and it is primarily used in order to have an **intentional effect** on the recipient. In addition, studies on the interaction between music and moving images distinguish between **images accompanied by music** (in feature films or television formats, in audio-visual advertising or plot-based video games) and **music accompanied by images** (in music videos, films of concerts and operas, or music-based video games) (Schmidt, 1993, p. 200). Music has a direct influence on a person's **vegetative bodily function**. Responses to music can therefore be measured by bodily processes such as breathing, pulse, muscle contraction or skin reactions. For example, the



Ill. 1: Acoustic events in film are divided into diegetic and non-diegetic sound

rhythm of the heartbeat adjusts to the pace of the music heard. Hectic or fast music excites the vegetative system, whereas slow music has a calming effect (Hesse, 2003, p. 91). Furthermore, auditory stimuli can be differentiated more meticulously, and processed and responded to more quickly than visual stimuli (Schlemmer, 2005, p. 174). In the **brain**, interactions between sound and image take place as early as the **preconscious** processing stage. In addition, in musical perception there is a direct connection with the amygdala and the limbic system, and therefore with the development of **emotions**. The semantic processing of audio-visual input and therefore the assignment of meaning takes place only later in the cerebral cortex (Kuchinke et al., 2013, p. 124 ff.). Music therefore has stronger effects on physical vegetative func-

tions and on the processing within the brain than visual stimuli. Empirical film music research is primarily concerned with the significance of music in the **cognitive, emotional and evaluative processes** of film reception. Here, the research focus is primarily on emotional effects. The methodology mainly involves psychometric measurements using standardised tests and questionnaires, but also physiological processes, e.g. measuring pulse and skin resistance, visual electromyography (EMG) or eye-tracking. Behavioural observations are also employed (Bullerjahn, 2018, p. 183).

Pauli, Hansjörg (1981). Filmmusik: Stummfilm. Stuttgart: Klett-Cotta.

Schmidt, Hans-Christian (1993). Fernsehen. In Herbert Bruhn et al. (Eds.), Musikpsychologie. Ein Handbuch (pp. 195-203). Reinbek: Rowohlt.

Hesse, Horst-Peter (2003). Musik und Emotionen – Wissenschaftliche Grundlagen des Musik-Erlebens. Vienna: Springer.

Schlemmer, Mirjam (2005). Audiovisuelle Wahrnehmung. Die Konkurrenz und Ergänzungssituation von Auge und Ohr bei zeitlicher und räumlicher Wahrnehmung. In Helga de la Motte-Haber & Günther Rötter (Eds.), Musikpsychologie (pp. 173-184). Lilienthal: Laaber.

Kuchinke, Lars, Kappelhoff, Herrmann & Koelsch, Stefan (2013). Emotion and music in narrative films: A neuroscientific perspective. In Siu-Lan Tan et al. (Eds.), The psychology of music in multimedia (pp. 118-138). Oxford: Oxford University Press.

Bullerjahn, Claudia (1994). Ein begriffliches Babylon – Von den Schwierigkeiten einer einheitlichen Filmmusiknomenklatur. Conference: 7. Film- und Fernsehwissenschaftlichen Kolloquium in Potsdam-Babelsberg 5-7 October 1994. Available at: [https://www.researchgate.net/publication/307589325\\_Ein\\_begriffliches\\_Babylon\\_-\\_Von\\_den\\_Schwierigkeiten\\_einer\\_einheitlichen\\_Filmmusiknomenklatur](https://www.researchgate.net/publication/307589325_Ein_begriffliches_Babylon_-_Von_den_Schwierigkeiten_einer_einheitlichen_Filmmusiknomenklatur) [7.4.20].

### FUNCTIONS OF FILM MUSIC

Film music is functional music; it is not employed for its own sake but in order to induce certain effects. Bullerjahn (2019, p. 69 ff.) ascribes the following dramaturgical, epic, structural and persuasive functions to music in the filmic context:

**Dramaturgical functions** of film music are related to the plot of a film. For example, music can portray or reinforce atmosphere. It is also used to illustrate the psychological states and processes of the protagonists (such as their feelings or intended actions).

**Epic functions** are valuable in the narration of the film's plot, for the music can take a critical or ironic step back from the message of the visual images. Music is therefore the film director's subjective take on the content of the film. It is also possible to manipulate the narrative time or the narrative pace. For example, manipulations of narrative time are usually bridged and unified with a continuous flow of music.

**Structural functions** serve to mask or emphasise film cuts and accentuate single takes and movements. Changes in music have been used to indicate scene changes ever since the days of silent films. In this sense, film music takes on the function of facilitating perception because it can act as a factor in creating the form (Lissa, 1965, p. 106).

**Persuasive functions** relate to the (potentially) strong emotional impact of music, since it not only portrays emotions in the audio-visual context itself, but also evokes or stimulates emotions in the recipients. Basic emotions such as sadness, anger, joy or fear can be conveyed through the acoustic parameters of pace, volume, pitch and tone. Moreover, music can draw attention to particular individuals, objects or events, charging these with emotion. In so doing, music lends the film an additional **dimension of depth** (Jaszoltowski & Rietmüller, 2019, p. 116).

Bullerjahn, Claudia (2019). Grundlagen der Wirkung von Filmmusik. Augsburg: Wißner.

Lissa, Zofia (1965). Ästhetik der Filmmusik. Berlin: Henschel.

Jaszoltowski, Saskia, & Rietmüller, Albrecht (2019). Musik im Film. In Holger Schramm (Ed.), Handbuch Musik und Medien (pp. 95-122). Konstanz: UVK.



Ill. 2: The “Casablanca effect”: music as a cue for remembering particular scenes from a film

### EFFECTS OF FILM MUSIC: RESEARCH QUESTIONS AND STUDIES

#### Emotional effects

Most studies focus on the emotional empathy and perspectivation created by film music. However, it is accepted that background music is probably rendered ineffective by recipients becoming accustomed to it, whereas measurable effects of music are more likely the more the music is integrated into a surrounding context (e.g. in a feature film) (Behne, 1999). Overall, the following possible emotional effects have been identified on the basis of available empirical studies (Unz et al., 2008, p. 182 ff.):

- **Polarisation:** The music can move the emotional perception of neutral visual content in a particular emotional direction.
- **Additive effect:** Paraphrasing film music – i.e. music with an emotional message that corresponds to the visual content – can reinforce the emotional effect.
- **Dominance of music over image:** The perceived atmosphere of the film is more strongly influenced by the music than by the actions of the protagonists.

- **Stronger valency of negative emotions:** Aggressive film content is less conducive to attenuation by gentle music than gentle film content by aggressive music.

Apposite emotional musical composition supports the recipient's sense of similarity with the protagonist and creates opportunities for **identification and empathy** (ibid., p. 186).

### Attention and involvement

Studies have shown that music which fulfils conventional expectations of film can concentrate the viewer's attention on events on screen (for an overview, see Bullerjahn, 2018, p. 188 ff.). This is especially true where the music is emotionally and structurally congruent with the image and there is therefore no distraction from the visual events. Music that recipients feel is apposite to the film's content can also determine to what extent the audience is drawn into the plot and held spellbound by what is happening in the film. In the case of such involvement, music remains in the background in the viewer's perception (ibid., p. 191).

### Structural perception

Film music can structure the visual field of perception. For instance, music can accentuate, or even offset, the division into sequences, takes or scenes, and the use of contrasting musical motifs can emphasise the central dramatic conflict. Film music can also have the effect of modulating time, for musical pace (and also cutting frequency) influences the subjective perception of time in the film's plot. For filmmakers, film music is a tool to define the **quality and intensity of presence** (Schneider, 1989, p. 144).

### Knowledge acquisition and memory

Music has an influence on the recipient's capacity for memory, for it can

guide attention towards relevant visual information, contextualise the film's content, or function as accompanying information, charging what the viewer sees with emotional meaning (Bullerjahn, 2018, p. 202). For example, the **leitmotif technique** adopted from opera, i.e. the assigning of musical motifs to protagonists, can create a web of associations within the film, and this can help the viewer understand and recall the content of the film (ibid., p. 201 ff.). In the "**Casablanca effect**" (Hoeckner & Nusbaum, 2013), the music tends to serve as a **cue** for remembering particular scenes from the film, rather than the other way round. The authors believe that music which is particularly characteristic and strongly connected with emotional content, like the piano scene in *Casablanca* (Ill. 2), can have this effect.

### Cognitive effects, influence on forming judgements and opinions

Music in film can provide important information and offer schemas that facilitate understanding. For example, a particular style of music in the opening credits (e.g. in crime films) can trigger corresponding expectations of the film's content. Experiments in which subjects were shown filmic content with the both original music and alternative music have shown that different assumptions are made about the plot and the motivations of protagonists depending on which music is used (for an overview, see Bullerjahn, 2018, p. 206 ff.). There is evidence that, in principle, positively perceived film music – i.e. music that does not simply remain unnoticed in the background – supports the filmic formation of judgements and opinions. However, studies make clear that the **personal variables of the recipients** (e.g. age or level of education) strongly influence the formation of opinion on film content (Bullerjahn, 2019, p. 273). There are only a small number of research results on the effects of film music with

respect to motivating and reinforcing the viewer's behaviour, and these are, to a certain extent, contradictory (ibid., p. 275). For example, the music in the credits of a television series can serve as a "warning signal" to switch channels in order to avoid unwelcome content, but it can equally function as a positive signal in the form of triggering anticipation (Maas & Schudack, 1994, p. 122). In line with these results, Bullerjahn (2019, p. 297) puts forward the theory that sometimes the role of film music is overestimated and the role of the recipient is underestimated: ultimately, the viewers themselves decide whether they wish to engage with the intended effects or whether they prefer to turn to other offers to fulfil their desire for relaxation, entertainment, distraction or emotional empathy. ■

*Behne, Klaus-Ernst (1999). Zu einer Theorie der Wirkungslosigkeit von (Hintergrund-)Musik. In Helga de la Motte-Haber & Günther Rötter (Eds), Musikpsychologie (pp. 7-23). Lilienthal: Laaber.*

*Unz, Dagmar, Schwab, Frank & Mönch, Jelka (2008). Filmmusik und Emotionen. In Stefan Weinacht & Helmut Scherer (Eds), Wissenschaftliche Perspektiven auf Musik und Medien (pp. 177-191). Wiesbaden: VS Verlag für Sozialwissenschaften.*

*Schneider, Norbert Jürgen (1989). Handbuch Filmmusik II. Munich: Ölschlager.*

*Hoeckner, Berthold & Nusbaum, Howard (2013). Music and memory in film and other multimedia: The Casablanca Effect. In Siu-Lan Tan et al. (Eds), The psychology of music in multimedia (pp. 235-263). Oxford: Oxford University Press.*

*Maas, Georg & Schudack, Achim (1994). Musik und Film – Filmmusik. Mainz: Schott.*

### THE AUTHOR

*Heike vom Orde, Dipl.-Bibl., M. A., is responsible for the documentation department of the IZI, Munich, Germany.*

