

UNIVERSITY THEATRE AND FILM ARTS
BUDAPEST

DOCTORAL PROGRAMME

TAMÁS ZÁNYI

INDIVIDUAL SOUNDS IN FILM

An investigation of the role of cinematic sound experience
and its mechanism of action, with particular
reference to issues of spatiality and spatial experiences

Theses of the DLA Dissertation

SUPERVISOR:
Prof. Dr. GÁBOR BALÁZS

2020

Doctoral theses

The objective of the doctoral research was twofold: first, to present the individual nature of film sound creative processes within the framework of a novel, complex interdisciplinary approach, and second, to draw attention to the modern possibilities of artistic expression in a 360-degree sound compositions by offering specific audiovisual examples. In the dissertation, there are several references made – among other films – to László Nemes' movie *Sunset*; which is the work of art selected to be in the focus of analysis for the purposes of this paper.

In **Chapter 1** of the dissertation, the stratification of vertical montage in cinematography is described, with demonstrative examples taken from the movie entitled *Son of Saul*, along with the main types of sound used in the film. Here, references were made to the works of Béla Balázs, S. M. Eisenstein and Yvett Bíró, among others, on film theory, and Michel Chion's thoughts on the concept of "added value" were also highlighted. In film sound, according to Chion, the images no longer work on their own but, together with the sounds, they form a new whole together and, out of this collaboration, added values evolve. This part of the paper also attempts to find an answer to the question how motion picture sound types can be categorised in today's modern film sound structures. As part of this quest, a novel taxonomy formulated by the current author was presented in two different tables. To carry out a systematic analysis, the paper suggests that movie sounds may be examined according to four aspects: (1) relationship with space and time; (2) mental localization; (3) visibility; and (4) synchronism. Chapter 1 of the paper shall also investigate various jobs and responsibilities related to different film sound creation processes, including some of the problems posed by the expression 'sound engineer' and it shall also offer a systematic presentation of different activities related to film sound. As part of the above attempt, the work of the sound designer was analysed in detail and, based on the present author's experience, the characteristics of this creative activity were presented including the competences required for the complex tasks of a sound designer including a) musical tonal hearing and sense of rhythm; b) intuitive imaginative and associative audio skills; c) the knowledge of sound technology and acoustics, also the skills to creatively apply information technology; d) multimodal sensitivity, the ability to recognise the relationship between visual, acoustic and narrative elements, and the capability of integrating them into a unified mode of expression.

Chapter 2 of the paper focuses on sound recognition and the perception carried out by the nervous system, with special reference to specific phenomenological and intentional sound issues. The paper highlights the strong connection between image and sound at the neurological level, and in this relationship memory and recollection are equally important components. This is a process that influence several areas of the brain, i.e., it is not limited to one specific area. The close interconnection of image and sound at the level of memory is able to convey and retrieve a much broader range of information despite the fact that their mode and channel of communication differ significantly. In the memory process of coding, storage, and retrieval, the retrieval stimulus can be visual or auditory, but the recollection of a specific memory item is also possible by smell, taste, or by tactile stimuli. This kind of multimodal perception and experience processing is emphasized all throughout the dissertation. The second part of the paper also discusses the physiological and psychological impacts of music made on the listener. With reference to a number of studies it is argued in the paper that the basic function and effect of music can be traced back to rhythm and structure, because our cognitive operation is based on structures. What is also at play here, however, is what could be termed the ‘satisfaction of instincts’ which involves (musical) tension, the release of that tension, and the rush of emotions generated during the process. All the characteristics and parameters of music are rhythmically organized: e.g. the musical sound can be distinguished from noise by its periodicity, e.g. the regular rhythmic vibration of a sound-producing body. Furthermore, musical sounds played simultaneously or consecutively, referred to as harmony, melody and polyphony are also rhythmically organised. In fact, it is this periodicity that makes the very essence of musical structure. Rhythm is the outcome of the periodic repetition of stressed and unstressed manifestations, so it is responsible for both the formation of musical form and the transmission of emotions. From all the above, it can be concluded that certain aspects of cognitive functions of the brain such as perception, attention, memory, imagination, and thinking can be characterized by a rhythmic tendency or attitude, which turns musical events into hierarchically layered cognitive schemata. In plain words, music can be viewed as a hierarchical system of cognitive schemata. Chapter 2 also focuses on the physiological and neurobiological aspects of music. It offers a contemplation on whether phenomenology as a framework of thought may be included into an analysis of film sound, a process that is difficult – if not wholly impossible – to verbalise. This part of the paper revisits the idea postulated by Daniel N. Stern, that intermodality or, also known as intersensoriality (i.e. the ability to organize information and perceptions acquired from several senses into a common pattern of events) is a basic, innate quality of human beings. Experiences gained from these common characteristics – also referred to as vitality affects – are stored within us

at two different levels, the physical and the neurological level. Similarly, the physical characteristics of sonic perception, such as the perception of vibrations by auditory organs and the whole body, lead to phenomenological and embodiment approaches to film sound. An illustrative example, David Sonnenschein's phenomenological framework of film sound, is mentioned here to support the above claim, in which human thinking is interpreted in relation to the body and using the concept of embodiment.

In **Chapter 3** of the paper, immersive audio technologies are investigated with an emphasis on the spatial and three-dimensional nature of sonic perception. Of these, Ambisonics and the Dolby Atmos cinema sound systems are given a closer scrutiny. The immersive experience, which strengthens the spatial effect, the experience of being there and being in the story, can be connected in a broader sense to the altered states of consciousness (ASC) and the flow experience, a term coined by Hungarian professor Mihály Csíkszentmihályi. In a psychological sense, ASC is a condition that significantly differs from other waking states, but it is a state that one can get into without being under the influence of alcohol or drugs. The features of 'flow', among others, includes four characteristics: a) a strong focus on the medium (such as a movie, a theatrical performance or a book); b) the exclusion of environmental stimuli; c) an increased intensity of emotions; and d) experiencing an effortless, stress-free physical condition. Experience has shown that people are able to reach altered states of consciousness such as the 'flow experience' to varying degrees, but one thing seems certain: these are undoubtedly among the basic natural functions of the human mind. The effects brought on by the above characteristics can be enhanced by both the vibrations of the sound of the film, and the aforementioned primary bodily sensations, and they in turn reinforce the experience of presence, the feeling of being there. Besides the music, other acoustic elements in the film may also trigger an increase in stimulus activity in certain areas of the brain responsible for emotions, thus resulting in stronger emotional involvement. In the same way, if sounds, similarly to other ordinary spatial experiences, reach us not only from the centre, but from the front, the back, the two sides, and sometimes even from above, they can all contribute to a more pronounced presence and participation in the story, and therefore foster the illusion of reality. This psychological capacity or effect is actually supported by the aforementioned 360-degree immersive sound technology solutions. By way illustration of the above, an ambisonic sound mix of a scene in the movie, *Sunset*, optimized for stereo headphone reproduction in the so-called binaural format, is presented in this part of the paper. At the end of the dissertation, an application of different sound-related analytical criteria is proposed. Here, a draft version of a 7-point likert scale

questionnaire is introduced, by means of which – following the required factor analysis and validation – audience involvement in films could be measured in terms of sound effects as well. Based on the research conducted by Busselle and Bilandzic, the questionnaire relies on four components of Narrative Engagement: Narrative Understanding, Attentional Focus, Narrative Presence, and Emotional Engagement. The original research questionnaire contains 12 items in English; its scientific validation in Hungarian and its supplementation with three more questions was conducted by Nikolett Peszeki and Orsolya Papp-Zipernovszky in 2017. To further supplement the current 15-item Hungarian version, this paper presents five additional questions related to sound effect in which aspects of emotional involvement as well as conscious, cognitive observations related to sounds are also included.

Finally, in the **Conclusion**, the paper emphasises the strong individuality of film sound, and of any sound we experience, underlying that this distinctive nature of sound requires a larger degree of sensitivity, sincerity and openness from both the audience and professionals such as film makers and film critics. The paper is concluded with a recommendation that verbalisation platforms and devices related to audio experiences should be further expanded so as to share our individual experiences and have further discussions of this particular dimension of sonic experiences.