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Zdeněk Liška: Boundaries of Cinematic Music and Sound-Design

The history of Czech cinema abounds with strong creative personalities whose influence extends beyond the renown of individual films and who define the stylistic or aesthetic tendencies of the domestic film industry. But few influenced the film language of the second half of the 20th Century so significantly as Zdeněk Liška. The composer, whose filmography included hundreds of titles and whose name became synonymous with visionary audio, was born 100 years ago. His body of work shows that the boundaries between film score, film sound, sound-design and autonomous composition are thin. Liška's exploration of possibilities of sound and music dramaturgy fascinates fans of cinematic music, scholars, and composers to this day.

"I had the sound crew record various bird songs, insects chirping and stuff like that for Liška. He picked several passages, we put them on a loop for him, and he toyed with it. He slowed it down, sped it up, mixed it together and created a melody. It's a sort of laboratory work," said František Vláčil, recalling Liška and his sound-design method for *Film a doba*, in 1997.^[1] Vláčil's memories of their collaboration are complemented by stories of sound engineers who collaborated with Liška. Sound engineer Ivo Špalj tells of how while working in the Barrandov Studio of Electronic and Experimental Sound, Liška would often sit at Czech synthesiser ASYZ 2 and use oscillators to generate sounds he needed.^[2] Liška's methods were always innovative, even when working with electroacoustic methods, when sound synthesis and electronic effects were far from established practices.

From the very beginning, Liška's career was one of a search for new means of expression. In the first puppet stories of Mr. Prokoup, Hermína Týrlová's animated

films, and Zikmund and Hanzelka's travelogues, we sense his knack for film rhythm and endeavour to create a specific sonic world. In the 1950s, Liška's most prominent collaboration was with Karel Zeman, who, after the success of *The Treasure of Bird Island* (Poklad ptačího ostrova, 1952), turned to Liška when working on *Invention for Destruction* (Vynález zkázy, 1958). The latter film is characterised by his manipulation of electroacoustic sound and is probably among the earliest instances of using generated sounds in Czech films. The film's sound palette includes spinet parts, orchestral music, electroacoustic effects, and electrophonic organ. Electroacoustic diegetic sounds often manifest attributes of manipulation by magnetic tape (such as the sound illustrating the steam engine propelling a submarine – when we listen to it closely, we can hear a filtered piano sound, probably played backwards). Electroacoustics in *Invention for Destruction* often serves as a part of film diegesis; Liška, however, approaches it as an integral part of composition. The vibrato of electrophonic organ is organically complemented by melodic and rhythmic percussions, a harp or strings. At the same time, Liška indicates what direction the sound of his films will take. Most of the music finds itself in a subjective sound vacuum, separated from the original acoustic environment.

In the late 1950s, it was apparent that Liška's sense of musical dramaturgy was unique, as individual elements of his compositions weren't self-serving sound effects. It is also said that the composer had a say in the film's editing, which Zeman found too slow after the first screenings.^[3] His sense for rhythm and tempo became his trademark. The success of *Invention for Destruction* (which won the French and Czechoslovak Critic's Awards, a Crystal Star from the French Academy of Film, and the Grand Prix of EXPO 1958) suggested one of the fields in which Liška excelled – sci-fi films. His compositional and sonic innovation predestined him to work on futuristic films. He worked with Karel Zeman, for instance, on *The Fabulous Baron Munchausen* (Baron Prášil, 1961), but he perfected his sci-fi aesthetics in Oldřich Lipský's *The Man from the First Century* (Muž z prvního století, 1961) and Jindřich Polák's *slkarie XB-1* (1963).

Liška's trail-blazing is illustrated, for instance, by the opening credits of Lipský's 1961 film. In addition to standard credits for *Sound* (Ing. Jaromír Svoboda) and *Music* (performed by the Film Symphonic Orchestra, conducted by František Belfín), the film also credits Zdeněk Liška for *Electronic Music*. Another atypical credit went to sound

engineer Jaromír Svoboda, who was also listed as author of the *Electronic Instrument Design*. The information about the sound technology design and division of music into two types shows how unique Liška's approach was at that time. The character of the sound used in the soundtrack reveals that Svoboda constructed a complex range of tone generators and filters, a DIY modular synthesiser. The clash between Ladislav Simon's orchestral music and electronic loops constitutes a principle defining the atmosphere of Lipský's futuristic satire. Electronic composition creates a fictitious soundscape of the future but at the same time documents one of Liška's composition principles – the connection of acoustic and electronic sound sources. The audience cannot be sure whether a specific sound was made by electronic synthesis or an acoustic sound source manipulation. Liška perfected this approach in Polák's iconic *Ikarie XB-1*, in which electronics were fully liberated from the symphonic tendencies of film music. In the very first moments of the film, we hear the electronic noise of an approaching spaceship; the sound of the oscillator can be interpreted as a triumphant fanfare of the definitive rise of electroacoustics in Czech cinema.

Ikarie frequently uses loops while each of them demonstrates a different level of signal manipulation. The human ear is unable to differentiate which motifs belong to the world of generated sound and which were made by manipulating acoustic signals. Careful listeners can identify sounds of classical instruments in individual loops. Among quick beats, we can sometimes hear the rattle of the piano mechanics, percussive sounds reminiscent of edited kettledrum, while long melodic tones played by a reed wind instrument are processed by tape recorder manipulation and frequency filters. Throughout the entire film, we hear synthesised sound, both in its diegetic and non-diegetic layers. Sound engineer Jaromír Svoboda worked with Liška on *The Man from the First Century*, so it's possible that while working on *Ikarie*, they used instruments Svoboda had designed for Oldřich Lipský's comedy. The words of Jaroslav Ferst, a former PETROF employee and the designer of one of Tesla's first tape recorders, confirm the usage of synthesisers: "[...] At that time, multivibrators still had valves, simple oscillators already had transistors. Each synthesiser tone was created by an individual tuneable oscillator... There were lots of people who were able to make faithful copies of Neumann condenser microphones or even an entire electronic organ, and Barrandov Studio surely employed radio engineering enthusiasts capable of making generators of various sound and alien tones. It was all

about sawtooth and rectangular waveform generators and mixing of these signals.”[4]

The degree to which electronic sound was used in *Ikarie* is, given the year of its creation, quite remarkable – in the early 1960s, electroacoustics was still in its infancy Czechoslovakia. The renowned Pilsen studio was still new, just like Lébl’s Cybernetic Committee of the Association of Czechoslovak Composers, and the Research Institute of Radio and Television was undergoing a change that defined electroacoustic sound as the central theme of its operation.[5] But for Liška, electronic sound was never a self-serving effect. It may have worked as a symbol of the future, but it also created a parallel dramaturgy of the film. The alienation of individual acoustic environments served as a narrative tool accentuating subjective views of individual characters. The counterpoint of sound and image illustrates, among other things, the hero’s mental state, which is a principle that Liška frequently used in films outside of the sci-fi genre.

Zdeněk Liška’s composition methods, however, didn’t rely only on skilful usage of electronic effects and instruments. He preferred a vertical approach; he didn’t write individual parts according to voices, but rather the entire composition. He also used original methods. In the opening sequence of *Icarus*, there is a tone sequence alluding to the principles of dodecaphony, which were well-known in the 1960s but only seldom appeared in films. Liška then organised concrete sequences using a unified pulse dictating the tempo of the music as well as entire scenes. Just like with other films (for example, Jiří Lehovec’s 1963 film *Mykoin PH 510*), Liška worked with tonal models respecting both the given tonal sequence and the rhythmical pulse. By means of these devices, Liška proved his knowledgeability of contemporary music and showed his ability to functionally apply the principles of autonomous composition to the purposes of music for film.

Liška’s composition language significantly influenced the work of František Vlácil. Their first film, *The White Dove* (Holubice, 1960), uses electronic sound as an important part of film narration, but at the same time, its sound dramaturgy is reminiscent of *Ikarie XB-1* in many ways. Echoes and reverberations delineate the narrative perspective. The voice of the child hero is often used in a contrast with the sounds of his surroundings. Liška, in collaboration with sound engineer František

Fabián, builds a complex sonic world, amplifying the eeriness of the film and enhancing the subjectivity of the narration. This is easy in principle but technically demanding, and an aesthetically effective method after all defines other films by the trio Vlášil – Liška – Fabián, such as *Marketa Lazarová* (1967) and *The Valley of the Bees* (Údolí včel, 1967). They also include another one of Liška's classic principles – the usage of stylised human voices. In all these films, we can hear rapid echoes of voices that use transient vowels to create rhythmical modes, often forming the main driving elements of the musical and sound composition. For Liška, sound-design became an integral part of composition. Without using fitting effects, the music itself would have an entirely different character. After all, Liška included manipulation with tape that was recorded directly in the sheets for *Marketa Lazarová*.^[6]

Liška's contemporaries often mention his incredible composing pace. Composer Oldřich Korte recalled in Petr Ruttner's 2000 documentary that while recording music for one film, Liška composed music for another and also corrected the mistakes of the musicians from FISYO (Film Symphonic Orchestra). Such anecdotal stories are supported by Liška's impressive filmography – in the 1960s, he was able to compose music for five to ten films a year. Barrandov Studio, thanks to Liška, began planning the construction of a new studio focusing on electronic and experimental sound. The plan was first outlined in a document titled *Perspective Thesis of Development of the Barrandov Film Studio Sound Technology* in 1964.^[7] The planned construction was halted several times; most deliberations about its role and technical equipment were mostly theoretical at that time. Concrete steps were taken in 1971, when the Department of Sound Technology assigned the task of *Establishment of the Department of Sound Effects and Tricks for Film Production*. In addition to Ivo Vítek, one of the key people of the studio's technological solution was sound engineer Antonín Kravka who, based on his research of the design of synthesisers *Moog*, *Arp* and *EMS* began working on the ASYZ 2 device (analyser and synthesiser of sound).^[8] Part of the Hostivař foley studio moved into the newly developed studio.^[9] It was there that Zdeněk Liška worked on other important entries in his filmography from the 1970s.

One of Liška's most remarkable compositions from that time is the score for *Joachim, Put Him into the Machine!* (Jáchyme, hoď ho do stroje!, 1974) by Oldřich Lipský). For most of the film, we hear naïve song miniatures, but the titular song is one of the

most innovative electroacoustic compositions in Czech film history. Liška's visionary concept was in many ways ahead of the development of Western computer-generated composition. This quasi-dance song combines generative sound structures with a hypnotic ostinato and vocal line.^[10] The futuristic song in *Joachim* symbolises technological development, but it also uses a distinctive language defying standard usage of electronic effects in film sound. Other films of this period include, for example, *Little Mermaid* (Malá mořská víla, 1976) by Karel Kachyňa. One of Liška's most popular scores (in 2011 it was published on vinyl by the London label Finders Keepers) further develops the principles that Liška utilised throughout his career. Synthesised sound merges with the timbre of a classical orchestra and creates a natural part of the film's sonic palette. In *Little Mermaid*, choir passages, so typical for Liška, stand between diegetic and non-diegetic sound and rank among his very best work of. Liška fully explored the possibilities of the studio of electronic and experimental sound in Jan Schmidt's trilogy based on books by Eduard Štorch: *On the Big River* (Na veliké řece, 1977), *The Raven's Stronghold* (Osada Havranů, 1977) and *Indivisible Clan* (Volání rodu, 1977). Liška's approach to the sound world of prehistoric people was so innovative that the studio management decided to present his mesmerising electronic composition at the first Inter-association Scientific and Technological Conference in Moscow.^[11]

Liška's music had the ability to significantly change the message of the film, as evidenced by the filmography of Jan Švankmajer. His film *The Ossuary* (Kostnice, 1970) represents a unique opportunity to examine the effect of Liška's score on audiovisual work. The film was originally made with a narrated commentary, but another version created later included Liška's music originally composed for Vladimír Sís's 1964 film *How to Make a Portrait of a Bird* (Jak dělat podobiznu ptáka, 1964). Švankmajer then used Liška's services until the composer's death. His perception of film rhythm and the ability to create a distinctive musical and sound world made him an ideal partner for Švankmajer's surreal narration.

It's impossible to cover the extent of Liška's abilities in a single text. His filmography will continue to fascinate more and more generations of cinematic music fans and scholars and will certainly be the subject of many studies in the future. The increased interest in his work is evidenced by the reissues of his soundtracks by the British

label Finder Keepers and many efforts to transfer his music to the world of contemporary production, whether it's the work of Petr Ostrouchov or concert programmes of the Prague Symphony Orchestra. Liška's music, however, will best serve its original purpose. Listening to his work may be a fascinating experience, but when disconnected from film stock, it loses its original meaning. Just as Liška's life was connected to film, his music is an integral part of Czech film history. Its specific sound, sense of sound dramaturgy and unprecedented work with film rhythm make it one of the highlights of Czech cinema without which films by František Vlášil, Karel Zeman, Jan Švankmajer, Hermína Týrlová, Juraj Herz and many other would lose a significant part of their magic.

Notes:

[1] Eva Strusková, O věcech trvalých a pomíjivých hovoří František Vlášil. *Film a doba* 43, 1997, no. 4, p. 171.

[2] Interview of Jonáš Kucharský (NFA curator) with Ivo Špalj (sound engineer and former employee of the Studio of Electronic and Experimental Sound of the Barrandov Studios), 4 December 2018. The interview is stored in the archive of the Czech Museum of Music.

[3] Barbora Dušková, *Czech Cinematic Music up to the 1960s*) Master's Thesis, Brno: Janáček Academy of Performing Arts, 2011, p. 26.

[4] Richard Vacula, IKARIE XB1 – Sound Analysis. *Postřeh* [online]. 2013 [quoted 2022-03-14]. Available at:
<https://www.postreh.com/phprs/view.php?cisloclanku=2013020901>

[5] Jan Novotný, *Studios of Electroacoustic Music in Czechoslovakia and their Development Before 1980*. Thesis, Prague: Faculty of Arts of the Charles University, 1979, p. 76.

[6] Věra Morgan, *Czech Film Music in the 1960s Influenced by the European Artificial Avant-Garde Music*, Dissertation, Olomouc: Faculty of Arts of the Palacký University in Olomouc 2016, p. 92.

[7] Ivo Vítek, Studio elektronického a experimentálního zvuku a jeho uplatnění ve FSB. In: *Filmová technika. Sborník vědeckotechnických informací*. Published by UŘ ČSV, line C – Sound Technology. 1978. 14(1/C). p. 10, quote from: Jan Novotný, p. 224.

[8] Jan Novotný, *ibid* p. 215, 218.

[9] Interview of Jonáš Kucharský (NFA curator) with Ivo Špalj (sound engineer and former employee of the Studio of Electronic and Experimental Sound of the Barrandov Studios), 4 December 2018. The interview is stored in the archive of the Czech Museum of Music.

[10] Compare with the pioneering composition by Laurie Spiegel *Drums* from 1975.

[11] Jan Novotný, *ibid.*, p 221.