

A Brief Analysis of the Innovative Ideas of Music Acoustics in Film Soundtrack

-- Take Interstellar as an Example

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Abstract: The film *Interstellar* is an important work directed by Nolan and scored by master of film music, Hans Zimmer. This work has won the 87th Academy Award for Best Score and Best Sound. It is a work worth thinking about both in music and sound. This paper will explain the innovative use of music acoustics through the analysis of some music in this film.

Keywords: Film Soundtrack; Music Acoustics; Innovative Ideas.

1. Introduction

Film music is a vital part of the film, if the plot is regarded as the backbone of the film, then the film music would be the flesh and blood to enrich the backbone. Some excellent movie music could even be used as a new language to express the voice and feelings of the characters, and play a role in promoting the development of the movie plot. *Interstellar* is a 2014 science fiction film co-produced by the United States and the United Kingdom directed by Christopher Nolan, starring Matthew McConaughey and Anne Hathaway. Based on physicist Kip Thorne's theory of black holes, the film follows the adventures of a group of astronauts who travel through a wormhole to find a new home for humanity. In 2015, the film was nominated for five Academy Awards at the 87th Academy Awards, and won the award for Best Visual Effects, this film could be regarded as a work of art combining sound and picture.

2. Analysis of Soundtrack Dreaming of Crash

The film *Interstellar* has been nominated for an Academy Award and a *Hollywood Music Media Award* for its original score. In the film's soundtrack *Dreaming of Crash*, the music starts at the beginning of the title, disappears during the dream, and when the dream returns to reality, the background music continues to play, distinguishing the dream from the reality. The soundtrack has a high-pitched sustained sound around 14KHZ, as shown in Figure 1. Zimmer uses this method to introduce the repressed emotions, and uses the high and low frequency response to seize the audience's attention. The continuous high frequency also symbolizes the despair of the protagonist. The score in this film is characterized by the powerful energy of the music in the undercurrent, until it explodes into a stunning sonic climax. This kind of introduction from simple notes, progressive to the impact of the symphony orchestration writing, has always been one of the characteristics of Zimmer's creation.

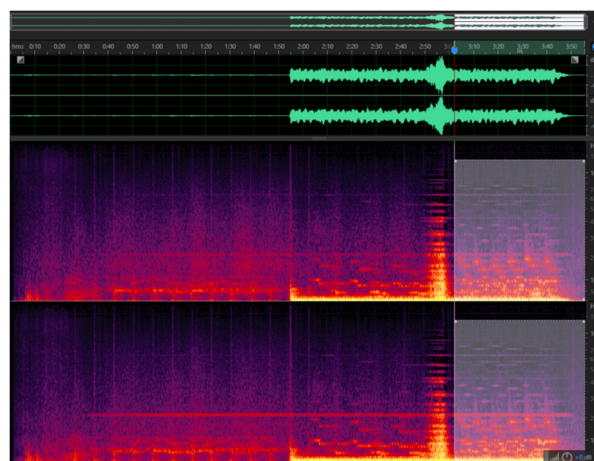


Figure 1. The soundtrack of Dreaming of Crash from the movie Interstellar

3. Analysis of the Soundtrack Cornfield Chase

The melody of *Cornfield Chase* is very distinctive, and it swings from A-E fifth, then B-E fourth, then C-E third, and finally D-E second interval. Every time there is a slight relaxation, the melody once again falls back to the bottom, nobody knows when to end this sadness, just like the hero does not know when to go home and reunite with his children. In the soundtrack of *Interstellar*, the use of organ is very characteristic. In the score *Cornfield Chase*, the organ arrangement represents the religious music of the Middle Ages in Europe, which has a deep connection with religious belief. When listening to the organ, people's hearts are pious and full of awe. In people's traditional cognition, the organ is only played permanently in the church, which means that it is played in a huge confined space, which has a deep sense of weight and history. Finally, the principle of organ sound is very similar to human breathing, there is its own kind of metaphor. In the soundtrack of *Cornfield Chase*, organ and piano are skillfully combined, and the main theme is repeated throughout the film.

Through the electronic processing, this cycle and change are constantly added layers. The combination of electronic processing and pipe organ enables the audience to have more

associations and construction of the music space.

4. Analysis of the Soundtrack Mountain

In the soundtrack of *Mountain*, there begins to be a huge sound that sounds as if a metronome is timing or counting down, which also sounds like water droplets when heard from another Angle. The sound actually comes from violins and woodwinds, but Hans Zimmer uses a violinist striking the strings with a pen and a bass player striking the sides of the instrument. The brass instruments were no longer just blowing, but pounding their mouthpieces, letting the air burst out, making a creepy sound, and adding the soft singing of the choir, the mood became tense, just like the plaintive sound at the beginning of the song, even a sense of crying and lost desolation. In this musical score, many special performance methods in orchestral music are used to express the correlation between music and picture, which plays a role of setting off and contrasting effect, and gives the audience a lot of associative space.

From the soundtrack of the movie *Interstellar*, we can see that technological innovation plays an important role in the development of the concept of film soundtrack. Just like the composer Hans Zimmer, he not only pursues the innovation

of music, but also pursues the deeper artistic effects brought by music and sound technology. Film music creation technology, like the film, needs to rely on the development, progress, enrichment and maturity of science and technology. Film music not only needs to narrate, depict the hearts of characters and set off the film atmosphere, but also needs to sublimate, extend and supplement the spiritual level of "sound and picture thinking", so that the music in the film has a more divergent meaning and connotation. Through the analysis of music acoustics in Zimmer's film *Interstellar*, we hope to introduce more experts and scholars to explore and innovate the modern film music creation system, and apply new ideas and new methods to more contemporary film music analysis and creation practices through the use of specific creative techniques and technologies.

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