Differentiating between terrifying and anxious music in emotion research

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Disciplinary background A. Evidence from the field of topic theory suggests that "scary" film music is divisible into at least two distinct types described as ombra and tempesta (McClelland, 2014). Ombra describes music written for scenes with ghosts or witches, suspenseful in nature. Tempesta describes music written for stormy, chaotic, terrifying scenes.

Disciplinary background B. Studies in neuroscience offer further support for the division of scary music into two subtypes. The brain has different neural networks for terror and anxiety (Adolphs, 2013). These separate networks may be related to the difference in the behaviors these fearful emotions motivate.

Abstract

This study has two aims: i) the creation of a large database of original film music excerpts that accurately portray terror and anxiety, respectively, and ii) the determination of how music communicates these two different fearful emotions musically and acoustically.

This study has produced a new database of music that communicate terror and anxiety called FEARMUS. These highly ecologically valid musical stimuli are useful for research on fear, film music, music and emotion, and emotion research more broadly. The database contains 100 musical excerpts (50 for terror, 50 for anxiety) that are taken from contemporary horror film soundtracks. Each excerpt is 10-30 seconds in length. FEARMUS, along with metadata and emotion rating data collected from 99 participants (66 female, age M = 25.84, SD = 5.84), is available online for use in psychological experiments and music research (https://osf.io/8sjtw/). The study also clarified the musical and acoustic differences between music that communicates terror and music that communicates anxiety through the use of topic theory analyses and acoustic analyses. Terrifying music is frantic, noisy, thundering, and shrill with walls of sound that evoke screams, earthquakes, cars crashing, or animals shrieking. On the other hand, anxious music communicates a sense of impending doom with ponderous marching tempi, held tones, sudden entrances, dynamic swells, and figurations that evoke whispering, footsteps, or ticking clocks. Acoustically, terrifying music also has a brighter timbre than anxious music exhibited by a higher average spectral centroid, flatness, rolloff, and zero crossing rate.

Interdisciplinary implications. As shown by these results, classic music theory methods pair well with psychological research in the pursuit of understanding how music communicates emotions. Topic Theory in particular provides useful terminology and analytic methods for similar studies. Topic theory analysis also aids in communicating the musical significance of acoustic analyses, as shown in this investigation. We hope that our methods provide a useful template for future work in this area. Research on music and emotions is integral to the theme of participation in music scholarship. In better understanding musically conveyed emotions, we further our understanding of how composers, performers, and listeners interact and communicate as they each participate in music making together.

References

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