Perceptions of happy and sad music may not be universal across cultures, new research finds

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New research led by Western Sydney University has found that perceptions of major and minor chords and melodies—what Western

culture commonly thinks of as "happy music" and "sad music"—may not be universal and is likely the result of culture-dependent familiarity and associative conditioning.

In the new study published in the journal *PLOS ONE*, researchers from the University's MARCS Institute for Brain, Behaviour and Development, the Australian National University, and the University of Konstanz worked with remote communities in Papua New Guinea with varying levels of exposure to Western music—playing them major and minor melodies and chord progressions (cadences) and asking them which music made them happier.

Researchers repeated the musical experiment with a group of musicians and a secondary group of non-musicians in Sydney, Australia. They then compared the emotional perceptions and preferences for major or minor harmonies and chords across all the study's participants.

The results revealed the Australian-based participants had a clear preference for major melodies and chords being perceived as happier.

The PNG participants with some exposure to Western music had a less decisive preference for major being happier than minor; however, the PNG participants with minimal exposure to Western music exhibited no detectable association with major chords and an emotional perception of happiness.

Co-author Dr. Andrew Milne, Senior Research Fellow in Music Cognition and Computation with the MARCS Institute for Brain, Behaviour and Development says differing emotional perception of music, commonly thought to be a universal response to major and minor keys, may be due to familiarity and conditioning within western culture.

"Music is such a vital part of most cultures and features heavily in our

everyday lives. It underscores milestone moments such as celebratory events like birthdays and weddings, while at somber events like funerals music has the power to move us, evoke memories or bring us to tears," said Dr. Milne.

"Every movie or TV show we watch is also underscored with a soundtrack to accompany emotional scenes. Typically, major chords are used in happy and upbeat scenes, while minor chords commonly convey a sense of unease and sadness."

"This associative conditioning throughout our lives may be one reason both musically trained and non-musicians from western culture identify major keys as happier, while those with minimal or limited exposure to western music and culture have weaker associations, or none at all," he said.

Lead author, Dr. Eline Smit Adjunct Researcher with the MARCS Institute for Brain, Behaviour and Development, said the findings reflect how the degree of familiarity with major and minor music plays a large role in people's emotional responses.

"The higher your familiarity, the more likely you are to experience these types of responses. However, our results cannot exclude the possibility that those without any familiarity with major and minor music may also perceive major as happy and minor as sad," said Dr. Smit.

More information: Eline Adrianne Smit et al, Emotional responses in Papua New Guinea show negligible evidence for a universal effect of major versus minor music, *PLOS ONE* (2022). DOI: 10.1371/journal.pone.0269597

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