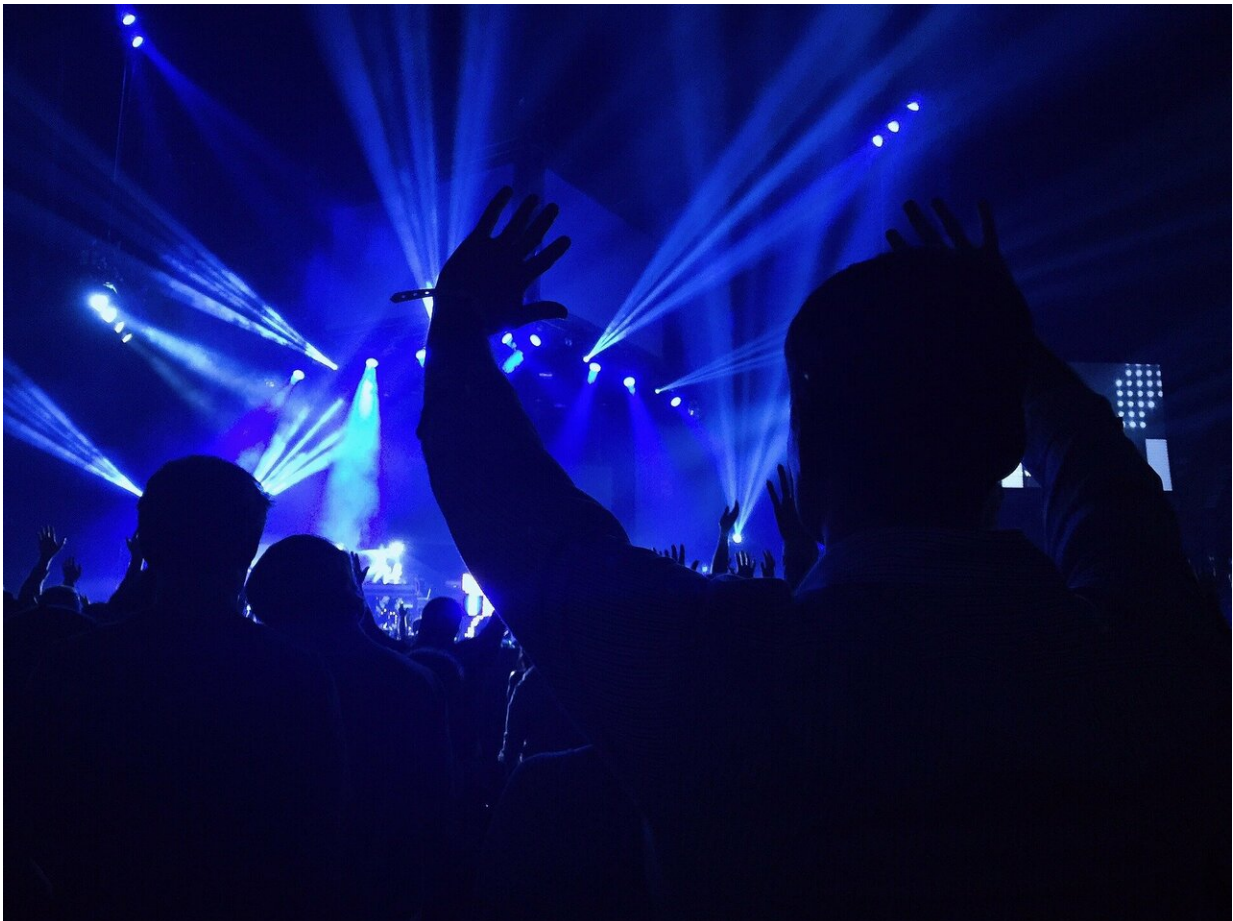


Computer analysis shows that popular music lyrics become angrier and sadder over time

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Popular music has changed over the years, and the music of 2019 is

noticeably different from the music of the 1960s or 1970s. But it is not just the music that changed, but also the lyrics. Data scientists at Lawrence Technological University in Michigan used quantitative analytics to study the change in lyrics of popular music over seven decades, from the 1950s to 2016. The results showed that the expression of anger and sadness in popular music has increased gradually over time, while the expression of joy has declined.

In a [research paper](#) published in the most recent issue of the *Journal of Popular Music Studies*, Kathleen Napier and Lior Shamir analyzed the lyrics of over 6000 songs of the Billboard Hot 100 in each year. The Billboard Hot 100 songs are the most popular songs each year, and reflect the preferences of music fans. In the past the songs were ranked mainly by record sales, radio broadcasting, and jukebox plays, but in the more recent years it is based on several other popularity indicators such as streaming and social media to reflect the changes in music consumption.

The tones expressed in each [song](#) were analyzed by applying automatic quantitative sentiment analysis. Automatic sentiment analysis associates each word or phrase in the song with a set of tones that they express. The combination of the tones expressed by all words and phrases of the lyrics determines the sentiment of that song. The sentiments of all Billboard Hot 100 songs in each year are averaged, and the average of each year allows to measure whether the expression of that [sentiment](#) increased, decreased, or remained constant.

The analysis showed that the expression of [anger](#) in [popular music](#) lyrics has increased gradually over time. Songs released during the mid 1950s were the least angry, and the anger expressed in lyrics has increased gradually until peaking in 2015. The analysis also revealed some variations. Songs released in the three years of 1982-1984 were less angry compared to any other period, except for the 1950s. In the mid

1990s, songs became angrier, and the increase in anger was sharper during that time in comparison to previous years.

The expression of sadness, disgust and fear also increased over time, although the increase was milder compared to the increase in the [expression](#) of anger. Disgust increased gradually, but was lower in the early 1980s and higher in the mid and late 1990s. Popular music lyrics expressed more fear during the mid 1980s, and the fear decreased sharply in 1988. Another sharp increase in fear was observed in 1998 and 1999, with a sharp decrease in 2000. The study also showed that joy was a dominant tone in popular music lyrics during the late 1950s, but it decreased over time and became much milder in the recent years. An exception was observed in the mid 1970s, when joy expressed in lyrics increased sharply.

The study shows that the tones expressed in popular music change over time, and the change is gradual and consistent, with a few exceptions. Since the researchers analyzed the most popular songs in each year, the study does not show that music changed, but in fact that the preferences of music consumers have changed over time. While music fans preferred joyful songs during the 1950s, modern music consumers are more interested in songs that express sadness or anger. "The change in lyrics sentiments does not necessarily reflect what the musicians and songwriters wanted to express, but is more related to what [music](#) consumers wanted to listen to in each year," says Lior Shamir, who participated in the research.

More information: Quantitative Sentiment Analysis of Lyrics in Popular Music, [DOI: 10.1525/jpms.2018.300411](https://doi.org/10.1525/jpms.2018.300411) , jpms.ucpress.edu/content/30/4/161.article-info

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