

# Study uncovers link between musical preferences and our inner moral compass

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A new [study](#), published in *PLOS ONE*, has uncovered a remarkable connection between individuals' musical preferences and their moral values, shedding new light on the profound influence that music can

have on our moral compass.

The research, conducted by a team of scientists at Queen Mary University of London and ISI Foundation in Turin, Italy, employed machine learning techniques to analyze the lyrics and audio features of individuals' favorite songs, revealing a complex interplay between [music](#) and morality.

"Our study provides compelling evidence that music preferences can serve as a window into an individual's [moral values](#)," stated Dr. Charalampos Saitis, one of the senior authors of the study and Lecturer in Digital Music Processing at Queen Mary University of London's School of Electronic Engineering and Computer Science.

The study involved an existing dataset of over 1,400 participants who completed psychometric questionnaires assessing their moral values and provided information about their favorite artists through Facebook Page Likes. The researchers then extracted acoustic and lyrical features from the top five songs of each participant's preferred artists.

Using ML algorithms, the team analyzed the extracted features to predict participants' moral values. Various text processing techniques, including lexicon-based methods and BERT-based embeddings, were employed to analyze narrative, moral values, sentiment, and emotions in lyrics. Additionally, low- and high-level audio features provided via Spotify's API were used to understand encoded information in participants' musical choices, enhancing moral inferences.

The results demonstrated that a combination of lyrical and audio features outperformed basic demographic information in predicting individuals' moral compasses. Specifically, musical elements like pitch and timbre emerged as crucial predictors for values of Care and Fairness, while sentiments and emotions expressed in lyrics were more effective in

predicting traits of Loyalty, Authority, and Purity.

"Our findings reveal that music is not merely a source of entertainment or aesthetic pleasure; it is also a powerful medium that reflects and shapes our moral sensibilities," remarked Vjosa Preniqi, lead author of the study and a Ph.D. student in Queen Mary's Center for Doctoral Training in Data-informed Audience-centric Media Engineering.

"By understanding this connection, we can open up new avenues for music-based interventions that promote positive moral development."

The study's implications extend beyond mere academic curiosity, holding the potential to impact how we engage with and utilize music in diverse aspects of life. "Our breakthrough can pave the way for applications ranging from personalized music experiences to innovative music therapy and communication campaigns," commented Dr. Kyriaki Kalimeri, senior co-author of the study and researcher at ISI Foundation.

"Our research has uncovered an important link between music and morality, paving the way for a deeper understanding of the psychological dimensions of our musical experiences," concluded Vjosa Preniqi. "We are excited to continue exploring this rich and uncharted territory."

This study was conducted using data from the LikeYouth Facebook application, a research-focused survey tool that has engaged over 64,000 participants primarily in Italy. Participants provided voluntary and informed consent and completed various psychometric surveys, including the Moral Foundations Questionnaire (MFQ), in addition to sharing demographic details and Facebook Page Likes.

**More information:** Vjosa Preniqi et al, Soundscapes of morality: Linking music preferences and moral values through lyrics and audio, *PLOS ONE* (2023). [DOI: 10.1371/journal.pone.0294402](https://doi.org/10.1371/journal.pone.0294402)

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