

Psychologists Identify Key Characteristics Of Earworms

Study helps explain why tunes get stuck in our heads

WASHINGTON — If you've found yourself singing along to Lady Gaga's "Bad Romance" hours after you switched the radio off, you are not alone. Certain songs do tend to stick in our heads more than others for some very specific reasons, according to research published by the American Psychological Association.

These songs, often called earworms, are usually faster, with a fairly generic and easy-to-remember melody but with some particular intervals, such as leaps or repetitions, that set them apart from the average pop song, according to the first large-scale study of earworms. The article appears online in the APA journal [*Psychology of Aesthetics, Creativity and the Arts*](#)[®]. In addition to "Bad Romance," examples of common earworms named in the study include "Don't Stop Believing" by Journey and, perhaps not surprisingly, "Can't Get You Out Of My Head" by Kylie Minogue.

"These musically sticky songs seem to have quite a fast tempo along with a common melodic shape and unusual intervals or repetitions like we can hear in the opening riff of 'Smoke On The Water' by Deep Purple or in the chorus of 'Bad Romance,'" said the study's lead author, Kelly Jakubowski, PhD, of Durham University. She conducted the study while at Goldsmiths, University of London.

Earworms are also more likely to get more radio time and be featured at the top of the charts, which is not surprising. However, there has previously been limited evidence about what makes such songs catchy regardless of popularity or how often people may have heard them. "Our findings show that you can, to some extent, predict which songs are going to get stuck in people's heads based on the song's melodic content. This could help aspiring song-writers or advertisers write a jingle everyone will remember for days or months afterwards," said Jakubowski.

The study found that the tunes most likely to get stuck in people's heads were those with more common global melodic contours, meaning they have overall melodic shapes commonly found in Western pop music. For example, one of the most common contour patterns is heard in "Twinkle, Twinkle Little Star," where the first phrase rises in pitch and the second falls. Numerous other nursery tunes follow the same pattern, making them easy for young children to remember, according to the authors. The opening riff of "Moves Like Jagger" by Maroon 5, one of the top named earworm tunes in the study, also follows this common contour pattern of rising then falling in pitch.

In addition to a common melodic shape, the other crucial ingredient in the earworm formula is an unusual interval structure in the song, such as some unexpected leaps or more repeated notes than you would expect to hear in the average pop song, according to the study. The instrumental interlude of "My Sharona" by the Knack and "In The Mood" by Glen Miller both have this unusual interval structure.

The researchers asked 3,000 people to name their most frequent earworm tunes and compared these to tunes that had never been named as earworms in the database but were a match in terms of popularity and how recently they had been in the United Kingdom music charts. The melodic features of the earworm and non-earworm tunes were then analyzed and compared. Songs were limited to popular genres, such as pop, rock, rap and rhythm and blues. The data for the study were collected from 2010 to 2013.

Studies of earworms can help to understand how brain networks — which are involved in perception, emotions, memory and spontaneous thoughts — behave in different people, the authors said.

Jakubowski offered tips for how to get rid of an earworm:

- ✓ Engage with the song. Many people report that actually listening to the earworm song all the way through can help to eliminate having it stuck on a loop.
- ✓ Distract yourself by thinking of or listening to a different song.
- ✓ Try not to think about it and let it fade away naturally on its own.

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