

Why your favourite song takes you down memory lane

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Fans attend a rock concert on June 22, 2013 in Clisson, western France

Music triggers different functions of the brain, which helps explain why listening to a song you like might be enjoyable but a favourite song may plunge you into nostalgia, scientists said on Thursday.

Neuroscientists in the United States used a [functional magnetic resonance imaging](#) (fMRI) scanner to map [brain activity](#) in 21 young

volunteers as they listened to different types of music, including rock, rap and classical.

They were played six songs, each five minutes long, four of them considered to be "iconic" to each genre, one song that was unfamiliar and one which they had identified as a favourite.

The scientists spotted patterns of activity that told when a volunteer liked or disliked what was being played.

And they also noted a telltale signature that occurred when the favourite song popped up.

Listening to music that was liked, but was not the volunteer's favourite, opened up a neural circuit in both [brain hemispheres](#) called the [default mode network](#), which is important for "internally-focussed" thoughts.

But listening to a favourite song also boosted activity in the adjoining hippocampus, a region responsible for memory and socially-linked emotions.

The research, published in the journal *Scientific Reports*, was led by Robin Wilkins at the University of North Carolina at Greensboro.

The authors said they were surprised to see that the fMRI patterns among those in the study were so similar, given that music is so different and preference is such an individual thing.

"These findings may explain why comparable emotional and mental states can be experienced by people listening to music that differs as widely as Beethoven and Eminem," they said.

Jean-Julien Aucouturier, an investigator at France's National Centre for

Scientific Research (CNRS), said the work strengthened a theory about how music affects the brain.

"Up till now, there was the hypothesis that favourite songs were a kind of super-stimulus, triggering the same pattern, but a stronger one, compared to other songs," he told AFP.

"But this research shows that it's not stronger activity in given parts of the brain which is stimulated, but a greater 'connectedness' between various parts."

The findings suggest listening to one's favourite [music](#) could help the search to treat memory loss, Aucouturier said.

More work, though, would be needed to see whether reviving connections to damaged memory areas lasts longer than the duration of a [song](#), he cautioned.

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