

Fwd: The Science Behind the Song Stuck in Your Head

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The Science Behind the Song Stuck in Your Head

With all the tunes out there, why is it stuff like 'My Sharona' that takes over our brains?

By ROY RIVENBURG
TIMES STAFF WRITER

<http://www.latimes.com/news/science/la-000080020oct07.story?coll=la%2Dnews%2Dscience>

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Warning: This article could be hazardous to your sanity. It contains discussions of songs so diabolically annoying that merely reading their titles--"It's a Small World," "The Lion Sleeps Tonight," "My Sharona"--can cause them to get stuck in your head. Proceed at your own risk.

For years, humans have been tortured by Stuck Tune Syndrome, in which a seemingly innocuous piece of music lodges in the brain and won't leave. So far, no reliable cure exists, but a University of Cincinnati professor hopes to change that. James Kellaris has embarked on a study to figure out why songs sometimes commandeer people's thoughts.

Kellaris, a marketing teacher who moonlights as a bouzouki player in a Greek band, theorizes that certain types of music operate like mental mosquito bites. They create a "cognitive itch" that can only be scratched by replaying the tune in the mind. The more the brain scratches, the worse the itch gets. The syndrome is triggered when "the brain detects an incongruity or something 'exceptional' in the musical stimulus," he explained in a report made earlier this year to the Society for Consumer Psychology. To help determine which factors cause songs to stick, Kellaris surveyed 1,000 students at four universities.

Almost without exception, the respondents had regularly endured stuck songs or jingles, with the typical episode lasting anywhere from a few hours (55%) to a full day (23%). Another 17% said the malevolent melodies persisted several days, and 5% said tunes haunted them longer than a week. One person claimed--perhaps facetiously--that music from an Atari 260 videogame had been playing in his head "since 1986."

The survey also asked people to identify the stickiest songs. From this list, Kellaris hopes to pinpoint the characteristics that make a tune more likely to bore into the brain.

One possibility is excessive repetitiveness. Although all songs contain repetitious elements, some rely on the technique so heavily that they might cause the brain to echo the pattern automatically, Kellaris suggests. Examples: "Follow the Yellow Brick Road," Queen's "We Will Rock You" and the theme from "Mission: Impossible."

A related factor is musical simplicity. "Children's songs seem more prone to get stuck than complicated material, such as a Bach fugue," Kellaris says. "Perhaps the ease with which a tune can be reconstructed" increases its adhesiveness.

Greg Scelsa of Lancaster, who composes and performs children's music for

the duo Greg & Steve, acknowledges that simplicity and repetition are key ingredients for making children's songs memorable.

A classic example is "If You're Happy and You Know It," he says. The melody in each verse builds sequentially from the previous verse. He demonstrates by singing, "If you're happy and you know it, clap your hands. If you're happy and you know it, clap your hands. If you're happy and you know it, then your face will surely show it. If you're happy and you know it, clap your hands."

With each "happy and you know it" line, the melody changes slightly, "but in a predictable way," he says. "It's the same pattern, which makes it more memorable."

Does that also make it more likely to implant itself in someone's cranium? Probably, he says. Probably? Three hours after Scelsa hangs up, "If You're Happy and You Know It" has staged a coup d'etat in our brain.

Another possible component of sticky songs is incongruity. If the beat or lyric defies listener expectations, it might incite a cognitive itch, Kellaris says. As an example, he mentions the song "America" from "West Side Story," which has a jarring 12/8 meter.

Then again, maybe melody has nothing to do with Stuck Tune Syndrome, says Diana Deutsch, a UC San Diego psychology professor who also served as founding editor of the journal *Music Perception*.

Perhaps persistent songs are like recurring dreams, she says: "Something in the back of your mind is trying to tell you something." As proof, Deutsch cites her own experience. Whenever she can't get a song out of her head, she contemplates the meaning of the lyrics--and the song instantly goes away. "Even songs without words can have a larger meaning," she notes, mentioning anthems and religious music as examples.

OK, but what if the tune circulating in your skull is the theme from "The Flintstones"? What's the deeper message behind that? Deutsch isn't sure, but insists that if the human brain has a tendency to play songs over and over, there must be an evolutionary reason.

If so, evolution should be outlawed. That's because it inevitably favors the most irritating songs. Let's say the brain wants to send itself an anti-anxiety message. It could play something like the Beatles' "Let It Be" or the Beach Boys' "Don't Worry Baby." But nooooo. Instead, the inner jukebox naturally selects Bobby McFerrin's "Don't Worry, Be Happy."

Kellaris isn't surprised. Other research has shown that disturbing thoughts are usually more memorable and compelling than pleasant ones, he says.

The first case of Stuck Tune Syndrome is lost to history. If ancient Romans had "Parvus Orbis Est" (Latin for "It's a Small World") chirping incessantly in their heads, they were kind enough not to mention it.

"Maybe this is a modern phenomenon," says H.A. Kelly, director of UCLA's Center for Medieval and Renaissance Studies. "I can't think of any literary references to a haunting or persistent melody."

In recent times, the most bizarre cases of Stuck Tune Syndrome involve elderly men and women. In rare instances, they begin to hallucinate music, according to reports in medical journals. The songs are "so vivid that people will look for a nearby radio," says neurologist Oliver Sacks, author of "The Man Who Mistook His Wife for a Hat."

Curiously, many of the auditory hallucinations are hymns or patriotic tunes, sung by a chorus. Some fade after time; others are permanent. "It goes 'round and 'round in their heads and they can't get it to go away," says UCSD's Deutsch, who has interviewed three sufferers and hopes to conduct a formal study of the disorder. "One woman went to her doctor and complained about hearing a hymn because she's not religious."

Sacks says the songs tend to be "music that was popular or important in the first 15 years of the person's life." In other words, future generations can expect to hallucinate Eminem, Britney Spears and the theme from *Barney the Dinosaur*.

Scientists don't know what causes the hallucinations. Some people begin hearing music after surgery, others after taking too much aspirin. But most of the patients are partially deaf, so the hallucinations might be akin to phantom-limb syndrome, Sacks says.

In any case, no cure is known.

Music exerts a powerful grip on the mind, Sacks says. "It's the catchiest

of all stimuli, at least for humans. I don't know whether it's catchy for monkeys or apes."

As for run-of-the-mill stuck tunes, the remedies vary. In Kellaris' survey, people outlined several strategies for derailing a nagging melody. The most obvious is to drive out the offending song by playing or thinking of another melody. Unfortunately, the substitute tune also might get stuck. "Some people turn to folkloric remedies," Kellaris says. "One chews on a cinnamon stick--and swears it works."

Others try to distract their minds by reading out loud or doing another task.

Finally, there's the "cooties" method, in which a stuck song is "transferred" to someone else by humming a few bars. Says Kellaris: "It's like, 'Tag, you're it.'"

Of course, the technique isn't practical for all songs. For instance, composer John Cage's "As Slow as Possible," which is currently being performed in Germany, begins with a silence that lasts 16 months, followed by a single chord to be played on Jan. 5, 2003, then another silence, then another chord on July 5, 2004, and the final chord in 639 years.

Luckily, humming isn't the only way to transfer a song. Simply telling someone the title might also be enough to insert it into their thoughts.

With that in mind, we feel compelled to mention some of the most common stuck tunes from Kellaris' survey, all of which infected our brain while writing this article: "The Macarena," "I'm a Little Teacup," "Gilligan's Island," the Chili's baby-back ribs jingle, Tchaikovsky's "1812 Overture," Kenny Rogers' "The Gambler," "YMCA," two Dr. Pepper jingles, Mozart's "Eine Kleine Nachtmusik" and the themes from "The Andy Griffith Show" and "The Odd Couple."

Tag, you're it.

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