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Why Do We Hate The Sound Of Fingernails On A Chalkboard?

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05:58 pm

November 9, 2011

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[4 min 47 sec]



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Those were fingernails working their way across a chalkboard. Some

of you might have felt a shiver. It's one of those sounds that provokes a physical reaction. Scientists have looked into the why [for years](#) and this week, scientists presented another theory at the Acoustical Society of America meeting.



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Fingernails on a chalkboard.

What musicologists Christoph Reuter, of the University of Vienna, and Michael Oehler, of the Macromedia University for Media and Communication in Cologne, Germany found was that the sound produced is at a critical frequency (2000 Hz to 4000 Hz) where your ear is most sensitive.

Oehler told *All Things Considered's* Robert Siegel that could be explained because at that frequency sounds are amplified because of the shape of the ear; it's called "open ear gain," he said.

But Oehler also told Robert that there is a psychological component to it. Oehler said they tested the sounds on volunteers. They warned some of them that the sound they were about to hear was nails on a chalkboard; they told others they were about to listen to a piece of contemporary music.

Those who thought they were listening to music, "perceived the sound to be less unpleasant," said Oehler.

What Oehler said he couldn't answer is whether there is an evolutionary reason for the reaction. He did say that "many important sounds of speech" are in that frequency and other sounds like a baby's cry and the sound of a vacuum cleaner fall in that category, too.

What Oehler is looking at now is how pitch contour relates to this reaction. Oehler said the findings could lead to a more pleasant-sounding world.

We'll post the as-aired version of the interview a little later tonight.