Why vocal fry? A recent phenomenon among pop musicians, the lowest vocal register is being examined by researchers

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Researchers at the University of Texas at San Antonio are studying the lowest vocal register used by chorus singers to better understand the emotional properties of music.

The lowest register used by chorus singers is called vocal fry, and it sounds a little bit like a growl or a croak. The technique has become popular in today's pop and country music. When female singers use this lowest register, listeners rate her as more expressive, according to a small study. The opposite is true for men.

"If you put on any recording of Britney Spears 'oh baby baby'—that is fry," said John Nix, an associate professor of voice and vocal pedagogy at the university. "It's a habit that we're hearing more and more in popular styles." Nix will make a presentation on vocal fry in music at the 171st Meeting of the Acoustical Society of America (ASA), which will be held May 23-27, 2016, at the Salt Lake Marriott Downtown at City Creek Hotel.

Singing is measured in hertz, which is the part of sound that determines pitch. Humans can hear tones between 20 Hz and 20,000 Hz, though as we age and our ear drums deteriorate, that range shortens. Vocal fry is at the low end of the spectrum at 70 Hz. Mariah Carey is at the high end of vocal artists, hitting 3,135.96 Hz.

What makes vocal fry unique is the gap of silence in between each burst of sound. The silence is short —less than the time it takes to blink an eye. But it exists because, when a singer uses vocal fry, their vocal cords are slack and long. As the air flows through, it creates a sound similar to food sizzling and popping in a frying pan, which is where the term originally got its name.

Nix and his team measure that space using a frequency extraction VoceVista software. The software uses spectrum analysis to pinpoint each individual sound waveform.

Because vocal fry is so low, it's very difficult to project on its own. Unlike pop singers who usually sing into microphones, opera singers and classical singers—who generally do not use microphones—are unable to use this technique.

Nix is conducting experiments to see how far vocal fry sound can carry. He makes recordings with and without vocal fry, and with and without piano accompaniment. It's easier to hear vocal fry without accompanying instruments and with amplification, he says.

"You don't hear a classical opera singer who has to sing [without a] microphone to a 4,000-person audience using vocal fry," Nix added, "but someone who has a microphone next to their mouth does use it."

Nix suggested that music students learn to use vocal fry sparingly—not just because they've heard it in pop songs.

"I want my students to choose to do it for an expressive purpose," Nix said. "It is one of the tools that they have in their tool box. Use it wisely and judiciously, [and] save it for those times when you really want to express something."

Presentation #2aMU3, "Why fry? An exploration of the lowest vocal register in amplified and unamplified singing," by John P. Nix will take place on Tuesday, May 24, 2016, at 9:05 AM MDT in Salon B/C. The abstract can be found by searching for the presentation number here:http://acousticalsociety.org/content/spring-meeting-itinerary-planner

Provided by Acoustical Society of America

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