

New research suggests that men and women perceive consonants differently

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The science behind what makes a human voice sound pleasant, or "vocal attractiveness," is something that people are exposed to everyday while interacting with a digital assistant like Apple's Siri. Once the province of psychologists and linguists, vocal attractiveness is now of increasing interest to acousticians as well as artificial intelligence (AI) researchers.

In a study to be presented during the 172nd Meeting of the Acoustical Society of America and the 5th Joint Meeting with Acoustical Society of Japan, being held Nov. 28-Dec. 2, 2016, in Honolulu, Hawaii, a Canadian researcher has new data about the vocal attractiveness of [consonants](#). Vowels are already well studied and there are several acoustic cues intrinsic to vowels—such as pitch—that effect listeners' judgments of attractiveness.

Data show that both female and male listeners typically agree in their "vocal attractiveness" ratings of voiced vowels whether they were spoken by a female or a male.

According to the researchers, consonants are different. Results of this new study show that both the sex of the speaker and the sex of the listener were important to how an acoustic cue was perceived and ranked a 7-point "vocal attractiveness" scale.

"Overall, I think the big take away from my study is the fact that the sex and gender of speakers and listeners influence the vocal attractiveness of consonants in different ways—and this influence has not been found for listeners when judging vowels," explained Emily Blamire, a doctoral student in linguistics at the University of Toronto in Ontario, Canada.

One of her key findings specifically pertains to the vocal cue of "s" duration (written by linguists as /s/). In her tests, two native speakers of Canadian English (one male, one female) spoke words containing the /s/ sound to make audio recordings. The recordings were then manipulated to both increase and decrease the value of each cue linguists study such as center of gravity and duration. Unlike other test parameters, it was only the manipulations of "s" duration that evoked statistically significant rating differences by 32 test participants aged 19-32, 16 of whom were female, who were asked to rate vocal attractiveness.

"Results show female listeners rank the male voice as more attractive when /s/ duration is decreased," Blamire said, while male listeners did not.

Blamire continued, "This suggests that not only are male and female voices judged by different standards as to what is attractive, but that men and women are using different criteria when making these judgments."

Why consonants might be different is a topic for future research.

"For the linguistic community, I think one of the most important aspects of this work was that not all consonant cues that encode social information—such as sex—played a role in perception of vocal attractiveness," she said.

Though vocal attractiveness research may in fact influence how your phone talks to you, for Blamire, there is a deeper significance.

"Truly, the wider value of this study, I feel, is that it is one little step more in illustrating the complexity of the human mind in how we perceive and categorize the world around us," Blamire said.

More information: Presentation 1pSPb6, "The role of consonants in the perception of vocal attractiveness," by Emily Blamire is at 4:50 p.m. HAST, Nov. 28, 2016 in Room Coral 3.

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