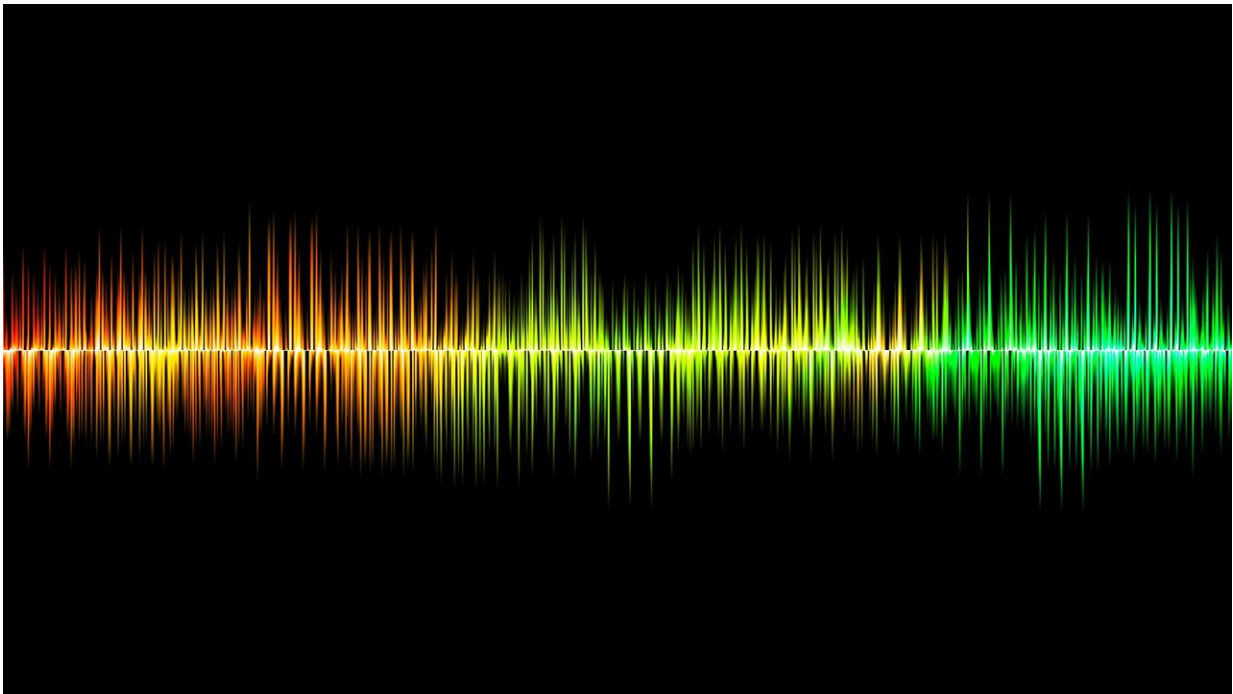


Low voice pitch increases standing among strangers, cross-cultural study finds

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If you're looking for a long-term relationship or to boost your social status, lower your pitch, according to researchers studying the effects of voice pitch on social perceptions. They found that lower voice pitch makes women and men sound more attractive to potential long-term partners, and lower voice pitch in males makes the individual sound more formidable and prestigious among other men.

The results of the cross-cultural study, [published](#) in the journal *Psychological Science*, have implications for understanding [human evolution](#) and how people today confer and evaluate [social status](#).

"Vocal communication is one of the most important human characteristics, and pitch is the most perceptually noticeable aspect of [voice](#)," said David Puts, study co-author and professor of anthropology at Penn State. "Understanding how voice pitch influences social perceptions can help us understand social relationships more broadly, how we attain social status, how we evaluate others on social status and how we choose mates."

To study how voice pitch influences social perceptions, the researchers selected two male and two female voice recordings all repeating the same sentence. They edited the clips to produce the average pitch for the speaker's sex plus a higher-pitched and lower-pitched version of each voice, for a total of 12 clips, and divided the clips into male-male and female-female pairings.

The researchers then asked more than 3,100 participants across 22 countries, representing five continents and New Zealand, to listen to the paired recordings and answer questions about which voice sounded more attractive, flirtatious, formidable and prestigious.

The researchers found that women and men preferred lower-pitched voices when asked which voice they would prefer for a long-term relationship such as marriage. They also found that a lower male voice pitch made the individual sound more formidable, especially among younger men, and more prestigious, particularly among older men. Perceptions of formidability and prestige had a larger impact in societies with more relational mobility—where group members interact more often with strangers—and more violence.

"We looked at homicide rate as a way of quantifying the degree of physical violence in a society, which was probably an important factor for our male ancestors' reproductive success," Puts said, explaining that human males often experienced threats of violence in competition over mates and those who were bigger—or seemed bigger—tended to have more success.

"Human males have sex traits, such as upper body muscle mass, that look like they were shaped by male use of force or threat of force to win mating opportunities. A low voice pitch exaggerates size. It makes an organism, whether it's a person or non-human primate, seem big and intimidating."

The fact that study participants across cultures perceived a lower male voice pitch as conferring formidability and high social status suggests that these characteristics were likely conferred to our ancestors as well, Puts said. He likened the effect to that of Darth Vader's voice in the Star Wars franchise: No matter where the character goes in the galaxy, his low pitch is perceived as formidable because larger beings tend to produce lower frequencies.

"The findings suggest that deep voices evolved in males because our male ancestors frequently interacted with competitors who were strangers, and they show how we can use evolutionary thinking and research from nonhuman animals to predict and understand how our psychology and behaviors vary across social contexts, including cross-culturally," Puts said.

"Male traits such as deep voices and beards are highly socially salient, but this new research shows that the salience of at least one of these traits varies in predictable ways across societies, and it suggests that others, such as beards, do too."

In addition, the researchers found that men perceived females with higher-pitched voices as more attractive for short-term relationships, and women perceived higher pitches as sounding more flirtatious and being more attractive to men. In societies with lower relational mobility, where [group members](#) are more likely to know one another, women may perceive these flirtatious voices as a threat to existing social networks, according to the researchers.

"Female secondary sex traits, like voice, look like they're much better designed for mate attraction rather than threatening each other physically," Puts said. "We found that we could use relational mobility to predict women's sensitivity to raised voice pitch in competitors. Sensitivity may have been higher in societies with lower relational mobility because flirtatious behavior is not just a threat to your romantic relationship but your friendships as well."

A common misconception is that early humans lived only in small-scale societies where everybody knew each other, Puts said. This was sometimes true, but the ethnographic and archaeological records show that group sizes were often large.

And although many people lived in small societies, he added, mounting evidence suggests that they periodically joined other groups to form large-scale societies numbering in the hundreds or thousands. They sometimes lived in these larger groups for months at a time and maintained these social networks even when they returned to living in smaller communities.

"This study suggests that voice pitch is relevant to social perceptions across societies," Puts said. "But it also shows that the extent of our attention to voice pitch when making social attributions is variable across societies and responsive to relevant sociocultural variables. In a society where there's higher relational mobility and you have less direct

information about your competitors, people appear to be more attentive to an easily identifiable, recognizable signal like voice [pitch](#)."

More information: Toe Aung et al, Effects of Voice Pitch on Social Perceptions Vary With Relational Mobility and Homicide Rate, *Psychological Science* (2024). [DOI: 10.1177/09567976231222288](https://doi.org/10.1177/09567976231222288)

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