

Deepness of male voice in primates found to be more likely to intimidate rivals than to attract mates

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Credit: George Hodan/public domain

(Phys.org)—An international team of researchers has found that deep voices in primates, including humans, might have evolved more as a means to intimidate rivals than to attract females for mating. In their paper published in *Proceedings of the Royal Society B*, the team describes three separate experiments they carried out to test their ideas on the

reasons for large differences in the vocal frequency range of male primates.

The goal of the researchers with this new effort was to try to better understand why vocalizations of male and females primates differ so dramatically and what impact there was, if any, on low vocalizations of some members of the different groups, which they noted, can exaggerate body size.

In the first experiment, the researchers studied recorded vocalizations of both Old and New World monkeys, apes and humans, looking for differences in species. They report finding that humans had the greatest difference in degree of pitch between males and females.

The second experiment consisted of asking 175 men and 258 women to listen to recordings of both men and women reading the same text out loud. The volunteers were asked to rate the people they were listening to on attractiveness regarding both long term and short term relationships. All of the listeners were also asked to rate the [male voices](#) on their degree of dominance. In studying the results, the team found that both males and females rated the men with deeper voices as more dominant, but the males rated them on average, three times higher.

In the third experiment, the researchers checked testosterone and [cortisol levels](#) of male volunteers, and found that males with low voices tended to have lower levels of cortisol (a stress hormone) and higher levels of testosterone, both of which they note, have been linked to a stronger immune system, something which potential mates might find attractive.

The researchers acknowledge that their study was deliberately narrow, which leaves the door open to other interpretations of vocal range in humans. Other factors could be at play as well they note, such as vocal range could be a means for offering a wider choice in mate selection for

both genders.

More information: David A. Puts et al. Sexual selection on male vocal fundamental frequency in humans and other anthropoids, *Proceedings of the Royal Society B: Biological Sciences* (2016). [DOI: 10.1098/rspb.2015.2830](https://doi.org/10.1098/rspb.2015.2830)

Abstract

In many primates, including humans, the vocalizations of males and females differ dramatically, with male vocalizations and vocal anatomy often seeming to exaggerate apparent body size. These traits may be favoured by sexual selection because low-frequency male vocalizations intimidate rivals and/or attract females, but this hypothesis has not been systematically tested across primates, nor is it clear why competitors and potential mates should attend to vocalization frequencies. Here we show across anthropoids that sexual dimorphism in fundamental frequency (F0) increased during evolutionary transitions towards polygyny, and decreased during transitions towards monogamy. Surprisingly, humans exhibit greater F0 sexual dimorphism than any other ape. We also show that low-F0 vocalizations predict perceptions of men's dominance and attractiveness, and predict hormone profiles (low cortisol and high testosterone) related to immune function. These results suggest that low male F0 signals condition to competitors and mates, and evolved in male anthropoids in response to the intensity of mating competition.

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