



February, 15th 2021

Evolution of communication : does it pay to exaggerate ?

Press release

Body size exaggeration is common in the animal kingdom, with many species having evolved adaptations to look or sound BIG in order to threaten competitors or attract mates. But to what extent does such deception actually fool listeners?

To answer this age-old question, researchers Kasia Pisanski and David Reby examined the perception of deceptive vocal signals of body size in humans. “By studying deception in our own species”, explains Prof. Reby, “we can answer many important questions about deceptive signalling that are difficult to tackle in studies with non-human animals”.

The study, published this week in *Nature Communications*, shows that human listeners often overestimate the perceived heights of men and women who volitionally lower their voice frequencies to sound bigger. But listeners are not so easily fooled: they can still judge the true relative heights of these cheating vocalisers, likely due to anatomical constraints that limit vocal tract length and preserve ‘honest’ cues to real body size. The study also shows that listeners often detect attempts to deceive, and that when they do detect a ‘cheater’, they recalibrate their height judgments accordingly, especially in the case of men judging the heights of other men.

The research thus provides answers to long-standing questions in animal communication:

- Deceptive vocal signals do retain an element of truth (in the case of body size this is likely due to anatomical constraints affecting vocal production).
- Listeners can detect such deception and correct their judgments when they do.
- There are sex differences in the production and perception of exaggerated signals: male vocalisers exaggerate their size more effectively than do females, and male listeners most effectively detect (and correct for) the deceptive signals of other males.
- Yet, it still benefits vocalisers to exaggerate their perceived size, as listeners’ assessments of height remain biased overall.

“Our results provide a unique lens into an evolutionary arms race between signallers and receivers.” explains Dr. Pisanski. “Vocal communication often poses a conflict of interest. In a competitive context between two males, for example, the vocalising male can benefit by exaggerating his size. At the same time, the listening male stands to benefit by detecting this deceit, and correcting for it. Our research suggests that while listeners are not easily fooled, it still pays off to deceive.”

Find out more in the freely available paper online: Pisanski, K. & Reby, D. (2021). Efficacy in deceptive vocal exaggeration of human body size *Nature Communications*, and the associated *Behind the Paper* blog in *Nature Ecology and Evolution*.

Reference:

Efficacy in deceptive vocal exaggeration of human body size, *Nature Communications*,
Pisanski, K. & Reby, D. (2021)
Blog *Behind the Paper* dans Nature Ecology and Evolution.

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