

Mating with relatives? Not a big deal in nature

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The study demonstrates that animals rarely attempt to avoid mating with relatives, a finding that was consistent across a wide range of conditions and experimental approaches. Wolves were among the species studied. Credit: Eric Dufour/Mostphotos

We usually assume that inbreeding is bad and should be avoided under

all circumstances. But new research performed by researchers at Stockholm University, published in *Nature Ecology and Evolution*, shows that there is little support for this assumption.

The idea that [animals](#) should avoid mating with relatives has been the starting point for hundreds of scientific studies performed among many species. But it turns out the picture is more complicated.

"People assume that animals should avoid mating with a relative when given the chance," says Raïssa de Boer, researcher in zoology at Stockholm University. "But [evolutionary theory](#) has been telling us that animals should tolerate, or even prefer, mating with relatives under a broad range of conditions for more than four decades."

The study provides a synthesis of 139 experimental studies in 88 species spanning 40 years of research, settling the longstanding debate between theoretical and empirical expectations about if and when animals should avoid inbreeding.

"We address the 'elephant in the room' of inbreeding avoidance studies by overturning the widespread assumption that animals will avoid inbreeding whenever possible," says Raïssa de Boer.

The study demonstrates that animals rarely attempt to avoid mating with relatives, a finding that was consistent across a wide range of conditions and experimental approaches.

"Animals don't seem to care if their potential partner is a brother, sister, cousin or an unrelated individual when they are choosing who to mate with," says Regina Vega Trejo, a researcher at Stockholm University and an author of the paper.

The study also looked at inbreeding avoidance in humans, comparing the

results with similar experiments with animals.

"We compared studies that asked if humans avoid inbreeding when presented with pictures of faces that were digitally manipulated to make the faces look either more or less related to studies that used similar approaches in other animals. Just like other animals, it turns out that there is no evidence that humans prefer to avoid inbreeding," says Raïssa de Boer.

"Our findings help explain why many studies failed to find clear support for the inbreeding avoidance and offer a useful roadmap to better understand how cognitive and ecologically relevant factors shape inbreeding avoidance strategies in animals," says John Fitzpatrick an associate professor in Zoology at Stockholm University and the senior author of the study.

The findings will have wide reaching implications for [conservation biology](#). Mate choice is increasingly being used in conservation breeding programs in an attempt to the success of conservation efforts for endangered species. What does this mean?

"A primary goal of conservation efforts is to maintain [genetic diversity](#), and mate choice is generally expected to achieve this goal. Our findings urge caution in the application of [mate choice](#) in [conservation](#) programs," says John Fitzpatrick.

More information: Meta-analytic evidence that animals rarely avoid inbreeding, *Nature Ecology and Evolution* (2021). [DOI: 10.1038/s41559-021-01453-9](https://doi.org/10.1038/s41559-021-01453-9)

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