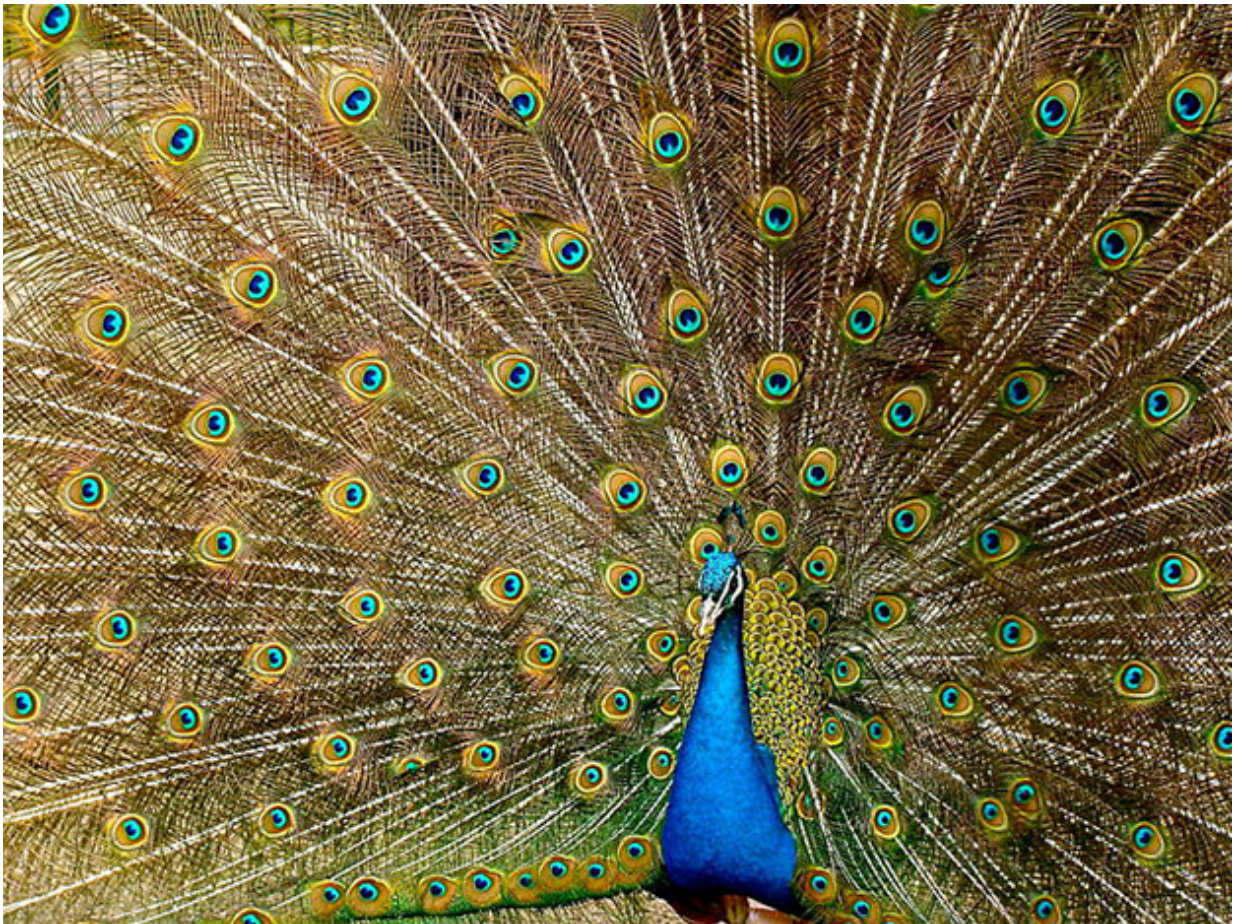


Peacocks might not shake those tail feathers for the reasons you think

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A provocative study by evolutionary biologists at McMaster University takes on one of Charles Darwin's central ideas: that males adapt and compete for the attention of females because it is the females who ultimately choose their mates and the time of mating. Credit: Wikipedia/Jebulon

What if Darwin was wrong?

A provocative study by evolutionary biologists at McMaster University takes on one of Charles Darwin's central ideas: that [males](#) adapt and compete for the attention of [females](#) because it is the females who ultimately choose their mates and the time of mating.

Instead, new research using fruit flies as a representative species indicates that females do not have specific preferences, suggesting that 150 years of evolutionary theory around mating choice may need to be tossed out.

"Darwin's female-choice theory has become the foundation for explaining the presence of exaggerated secondary sexual traits in many males, such as the peacock's tail feathers," says evolutionary biologist Rama Singh, an author of a paper in the journal *PLOS One* that explains the findings.

"It has also led to a cottage industry based on the idea that female choice is based on the genetic quality of the males, known as the 'good gene hypothesis'," Singh says. "Sexually exaggerated traits are said to be male advertisements to females of their good genes, when in fact they may simply be a means of making the male more visible to females or intimidating other males."

Did Darwin get it right? Could it be that the Victorian values of his time, when men tipped their hats and made other exaggerated displays of sensitivity to women, subtly affected Darwin's scientific thinking, leading him to attribute a veto power to females in matters of sexual negotiations? Is female choice more apparent than real?

When a female seems to "choose" a large male over a small male, how do we know if she really prefers the large male or she is making the

"choice" under coercion or threat, or if the large male has eliminated others from the competition?

Singh and his co-authors designed a simple trick to answer these questions. Using a garden variety of fruit fly, *Drosophila*, they sexually aroused a female with a male (large or small), then removed the male and offered the female two fresh males – one small and one large. The results were clear-cut and unambiguous: the aroused females did not show any particular preference for large males and mated as if randomly, leading the authors to conclude that once sexually aroused, females have no preference in terms of mates.

The key to understanding the question of choice may be in the longer time it takes female fruit flies reach a state of arousal – a lag that is often misinterpreted as females exercising mate choice.

In matters of [mate choice](#) and mating, there is no such thing as pure male charm, Singh says. All male moves can be seen as tinged with direct or indirect coercion or threat of physical force.

This may be so because the physical strength and aggressive behaviors that males develop through male-male competition can also be used in male-female sexual interactions, which are all lumped into "male sex drive" a term proposed by Singh as a complement to Darwin's "[female choice](#)".

In the case of humans, Singh says, things are different. Sexual behaviors are not hard wired; we assume that they can be modulated and moderated through rules of social interactions imposed by the brain's veto power over the body.

Provided by McMaster University

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