

'Virtual mates' reveal role of romance in parrot calls

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This is one of the budgies from the study sitting on the perch and activating the "virtual mate." Credit: Nancy Burley

Parrots are famed for their ability to mimic sounds and now researchers have used 'virtual mates' to discover if female parrots judge male contact calls when deciding on a mate. The research, published in *Ethology*, challenges traditional understandings of the difference between birds 'songs' and 'calls'.

Parrots are among the few species of bird to have developed the ability

to quickly learn and mimic new sounds, but the evolutionary reason for this ability is little understood. The Californian based team used a species of budgerigar to discover if the ability to mimic new calls is linked to courtship and mate choice.

"We wanted to know whether a female budgie pays attention to a male's call when she first meets him and if she uses that information when deciding to mate," said senior author Dr Nancy Burley from the University of California. "If so the question is: are females attracted to males that produce calls similar to her own?"

The problem facing the team was that because budgerigars are quick vocal learners a male presented with a female will quickly adapt their call to imitate the female. For the study to be successful it was crucial that the female was able to hear and evaluate the male's call before the male had the chance to adapt his call.

To get around this problem the team developed 'virtual mates' by installing a series of monitors showing videos of male budgerigars dubbed with different calls. Each monitor had a pressure activated perch which would start the clip when the female landed on it.

In each experiment a female was presented with two monitors, each playing the same video but one had been dubbed with a call similar to her own. Budgerigars are intelligent and highly visual animals, yet the females in this experiment readily interacted with the video images as if they were live males.

The results revealed that female budgerigars are attracted to males which produce calls similar to their own call but increase further in similarity during courtship.



This is an illustration of the apparatus used in the study. Credit: Marin Moravec

Traditionally biologists have focused their research on song birds and it is well established that songs are used by these species to attract mates and defend territory. Researchers have assumed that 'calls' differ to 'songs,' however this research challenges that traditional assumption.

"In our study females listen to variations in calls and use that information as a basis for [mate choice](#). This suggests that songs and calls may not be the different categories they have always been thought to be", concluded Burley. "While we don't yet fully understand 'why parrots parrot', we now know that the answer to this question parallels, in some respects, that of 'why birds sing'."

More information: Moravec. M, Striedter. G, Burley. N, "Virtual parrots' confirm mating preferences of female budgerigars," *Ethology*, Wiley-Blackwell, July 2010, [DOI: 10.1111/J.1439-0310.2010.01809.X](https://doi.org/10.1111/J.1439-0310.2010.01809.X)

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