

Rules of attraction: Catching a peahen's eye

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Getting the undivided attention of a female is tough at the best of times but it's even harder when surrounded by other male suitors. It's no wonder males often resort to ostentatious displays to distinguish themselves from the crowd, and nowhere is this clearer than in peacocks. Sexual selection has driven the evolution of their showy iridescent trains, whose main purpose is to attract females. But what is it about this train of colourful feathers that attracts peahens? Is it the characteristic eyespots or perhaps the green scale-like feathers?

Researchers have tried to answer this question by manipulating the trains, for example by removing feathers, but Jessica Yorzinski thought, why not just ask the females what they found attractive? So, during her PhD in Gail Patricelli's lab at the University of California Davis, USA, and Michael Platt's lab at Duke University, USA, Yorzinski investigates using an eye-tracking technique, publishing her findings in *The Journal of Experimental Biology*.

Yorzinski began the project by gradually introducing captive peahens to the eye-tracking equipment, training them to carry the small backpack and a helmet carrying two cameras. Of these two cameras, one filmed the field of view in front of the peahen while the other tracked the movement of the eye's [pupil](#). Afterwards, Yorzinski could use the movements of the pupil to work out exactly where the peahens had been looking. After testing the equipment by throwing a tasty mealworm into the peahens' enclosures or placing a potential [predator](#) in the enclosure in the form of a taxidermy raccoon, Yorzinski was satisfied that the eye tracker was successfully identifying the object of their gaze.

Next, Yorzinski, put the peahens to the test and introduced two males to each female. As the males began their elaborate displays, the peahens performed their characteristic courtship steps, first inspecting the [peacocks](#) from behind and then evaluating them from the front. Despite all the peacocks' tiring efforts, the peahens spent merely 21–27% of their time gazing at the peacock. The rest of the time they spent surveying their environment, on the look out for predators or food. By rattling his feathers, the peacock could engage her attention longer, but it was where the peahens were focusing that surprised Yorzinski most: 'The female spent most of her time gazing at the lower portion of the train, going back and forth along the bottom of the train. Almost all of her [gaze](#) was directed below the head and very little on the upper part of the train.'

So, is the upper train defunct? 'I wondered why females primarily looked at the lower portion of a peacock's train', recalls Yorzinski. 'It became clearer to me after travelling to India to observe the birds in their native habitat. I saw that only the upper train of a peacock was visible at a distance because of the dense vegetation.' Yorzinski thought that perhaps peahens used the upper train to locate the peacocks in the first place. To test this idea, she crafted a train out of peacock feathers and obscured the lower portion behind a barrier. When peahens were presented with these partial trains, they gazed more at the upper train than when the lower train was also visible. What's more when they were far away they tended move in towards the train to get a better close-up view. It seems that while a nice upper train may initially lure a peahen in, it's the bottom feathers that really intrigues her close-up. Although quite what it is about this region that interests a female remains to be seen.

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