

Male birds may sing, but females are faster at discriminating sounds

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It may well be that only male zebra finches can sing, but the females are faster at learning to discriminate sounds. Leiden researchers publish their findings in the scientific journal *Animal Behaviour*.

The scientists reached this conclusion after a meta-analysis of different experiments with the songbirds. Combining the results of 14 separate studies gave them a population of 87 [birds](#) to work from. The aim of the research was to find out why some birds could recognise sounds faster

than others.

Go and no-go

The zebra finches heard one of two sound types after pecking at an LED sensor. If – after hearing the right sound (the 'go sound') – they pecked on the sensor again, they received a reward. Pecking on the sensor after hearing the so-called no-go sound gave them no reward, and even 'punished' the birds by leaving them in the dark for a short while.

Dr Pralle Kriengwatana: 'Our meta-analysis shows that female zebra finches learn to discriminate sounds faster, which is surprising considering that females don't sing. On the basis that male songbirds usually sing more than female songbirds, scientists have long assumed that the males must also be better at recognising and learning song (and perhaps also other sounds). It now seems that [sex differences](#) in producing complex sounds do not necessarily correlate exactly with the ability to perceive and discriminate these complex sounds.'

Cause unknown

The scientists are still in the dark about the reasons why females learn better than males, although the female hormone oestrogen may play a role. According to Kriengwatana, further research is needed to determine the precise cause of the sex differences.

The researchers also discovered that the [zebra finches](#) try out different theories in their efforts to understand the test. In the first instance some birds stop pecking as soon as they hear new sounds, and then start pecking after each sound (both 'go' and 'no-go'). Once they realise that pecking after the 'no-go' sound does not bring them any reward, they peck much less after this sound. The other group of birds also initially

stop pecking, and then slowly but surely start pecking on the LED sensor again after both sounds. As soon as they understand that the 'go' sound gives them food, they peck more after hearing this sound.

Family size and body mass

Surprisingly enough, [family size](#) and [body mass](#) also seem to play a role. The finches from larger nests learned to distinguish sounds faster than birds with fewer siblings. The same applied for finches that weighed more at the age when they learned to eat by themselves and stop relying on parents for food. One explanation could be that more contact with other birds and better health may promote the faster recognition of sounds.

More information: Buddhamas Kriengwatana et al, Auditory discrimination learning in zebra finches: effects of sex, early life conditions and stimulus characteristics, *Animal Behaviour* (2016). [DOI: 10.1016/j.anbehav.2016.03.028](#)

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