

# Fraternal singing in zebra finches

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Singing siblings: zebra finches that grew up without their dads and therefore without a "song model", don't have to worry about a lack of singing repertoire. As researchers discovered, the birds can also learn their song through their brothers. Credit: Huet des Aunay

The song of songbirds is usually transmitted from one generation to the next by imitation learning and is thought to be similar to the acquisition of human speech. Although song is often learnt from an adult model, there is some evidence of active vocal learning among siblings. Researchers from the Max Planck Institute for Ornithology in Seewiesen

now showed that juvenile zebra finches that have been raised without their fathers are able to learn their song via a brother that for a short period had been exposed to the father's' song.

Remarkably, when comparing the songs of the two brothers, they turned out to be more alike than the song of the brother with its father. Thus, just like an adult tutor, a juvenile peer has the same potential to serve as a song model, and this could be a common strategy in birdsong learning.

Social learning from peers is a widespread phenomenon in infants. [Peer group](#) size may influence the degree to which interactions within the group can influence their own behaviour. This insight nowadays gains more importance as an increasing number of children get into contact with large group peers at an even earlier age, for example in day nurseries. The type of [social partners](#) can also be crucial for the intensity of social learning. A well-known example is the spontaneous development of a particular language in adolescent [deaf children](#) in several schools in Nicaragua in the eighties. These pupils invented a private [sign-language](#) with Creole characteristics. With this, they emancipated themselves from their unaware teachers who taught the normal sign language. Therefore, the same-age peers had the same or an even larger role model function than the adult teachers.

Song learning from peers has now been investigated by Sébastien Derégnaucourt and Manfred Gahr from the Max Planck Institute for [Ornithology](#) in Seewiesen using juvenile [zebra finches](#). In their study, young males were raised by both parents until the age of 14 days. Afterwards the mother and her chicks were separated from the father. Juvenile zebra [finches](#) start to memorise song from the age of 17 days on. When the chicks were about one month old, one of the sons was given back to his father for one week in order to hear his songs, while the other son was kept alone in another room. After the week the two brothers were reunited. When they became adult at 100 days of age the

researchers recorded their songs. First, they found that juveniles exposed to their fathers learned his song, although the degree of song learning showed large individual variation, which the researchers attributed to the relatively short exposure period. These sons were then able to transmit their songs to their brothers that had been without their fathers since they were two weeks old. Remarkably, after the completion of the song learning phase as adults, there was a high similarity in the songs of the two brothers. This similarity was even higher than the similarity that the researchers measured between the paternal song and the song of the son to whom he was exposed. These results show that a juvenile peer can be a role model that is as efficient as an adult suggesting a large social component underlying song learning, explains Sébastien Derégnaucourt.

**More information:** Sébastien Derégnaucourt and Manfred Gahr  
Horizontal transmission of the father's song in the Zebra Finch  
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