

And a nightingale sang... experienced males 'show off' to protect their territories

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Male song birds sing to attract mates and to deter other males from their territory and it is well known that the solo repertoire of many male song bird species increases with age and experience. However, new research published in BioMed Central's open access journal *Frontiers in Zoology* has examined the songs sung by male nightingales in response to recordings which mimicked an invading male and suggests that older males are less threatened by intruders resulting in less song matching.

Researchers from Freie Universität Berlin observed the behaviour of male nightingales in Treptower Park in response to playback of prior recordings of nightingale songs. Males in their first breeding season are recognisable by pale tips to their secondary feathers and tertials, and individual nightingales could be tracked by colour coded leg rings. Five of the one-year olds returned for a second year and were again tested with playback of recorded nightingale songs.

The length of the song (three seconds) and, if the male chose to sing before the recorded 'intruder' finished its song, the amount of overlap (approximately two seconds after the recording started) did not differ between the two age groups. Nor did these values alter for the birds followed over two seasons. However, there was a difference in song matching. Song matching (repeating the song that was just played) is thought to signal aggressive intent or at least provide a warning that the interloper is encroaching on established territory. While most of the one year olds tended to match songs with the recorded intruder, older birds matched songs less often, and birds in their second year overlapped

songs more frequently than in the previous year. Additionally, one year old nightingales used a third less individual songs than two-year olds (127 compared to 179).

Sarah Kiefer, who led the research, explained, "Song matching in other song [bird species](#) has been linked to escalating violence, so we expected the older male nightingales to also adopt this strategy. What we saw suggests a different story. Half of the older male nightingales never matched songs at all - perhaps in this species the younger birds may put more energy into matching to prevent a physical fight. Additionally if older male fitness is demonstrated by a larger song repertoire, then not matching songs would provide an opportunity to show off."

She continued, "Male nightingales add new songs to their repertoires between their first and second breeding seasons. This extended repertoire may increase their ability to attract females (a male with more songs must be 'fitter' because they have managed to survive longer) and to scare away intruders. The increased rate of overlap, compared to the previous year, for two year old birds may also signal aggression and fighting ability to the interloper, and to any eavesdropping females."

More information: Does age matter in song bird vocal interactions? Results from interactive playback experiments. Sarah Kiefer, Constance Scharff and Silke Kipper. *Frontiers in Zoology* (in press)

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