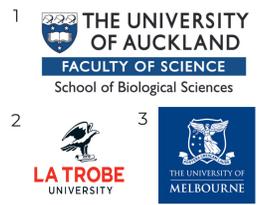


Are sleepy magpies worse singers?

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Background

Australian **magpies** are highly territorial and **sing** to defend their borders, attract mates, maintain hierarchy and social bonds¹.

Song maintenance occurs through repetition during the day but also through memory consolidation during **sleep**².

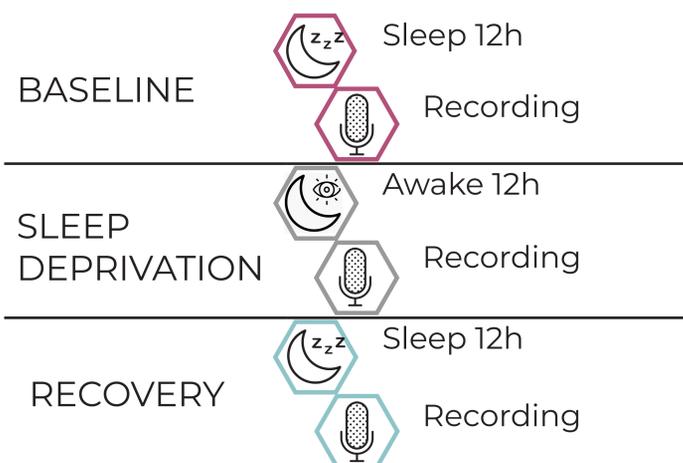
Sleep is known to affect song learning during the developmental phase of young birds³, but little is known about how sleep, or lack thereof, affects **adult song performance** in birds.

Question

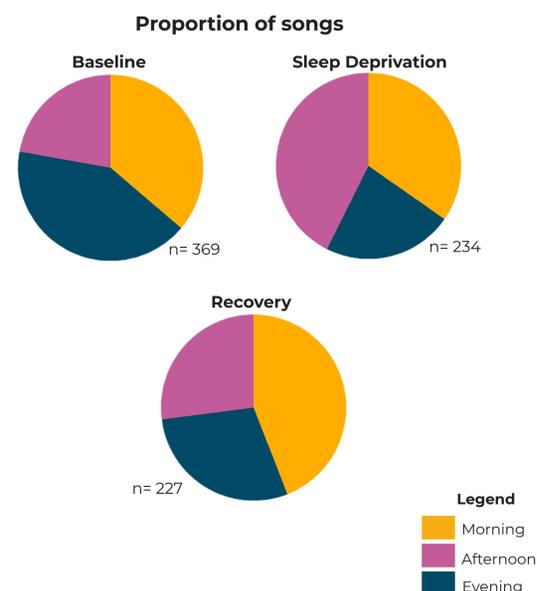
Does sleep deprivation change song performance in Australian magpies?

Methods

- **Eleven wild-caught magpies** were kept in a laboratory with a light regime of 12 hours.
- The test consisted of 3 nights and 3 days, divided into **Baseline**, **Sleep Deprivation** and **Recovery**.
- Their vocalizations were recorded during **Morning** (9:00-11:59), **Afternoon** (12:00-14:59) and **Evening** (15:00-18:00).



Results and Discussion

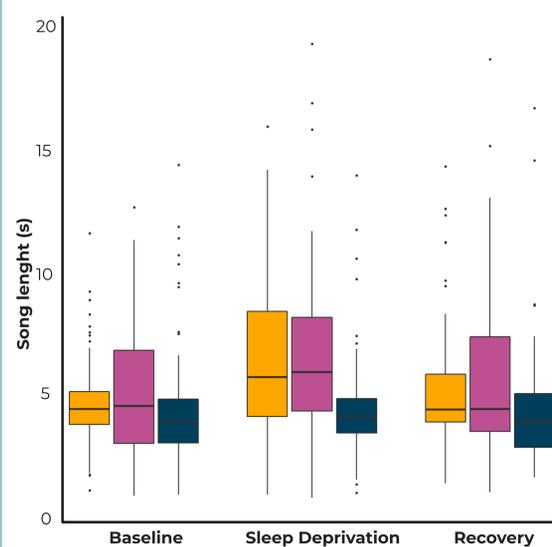


Magpies sing less after sleep deprivation.

- Prioritize sleep over singing?

Sleep deprived birds sing more often in the afternoon.

- Overcompensate for poor morning chorus?



Magpies sing longer songs after being sleep deprived...

- To maintain territory?

...especially in the morning.

- Stressed birds.
- Less songs, but higher "quality".

Findings

- Magpies sing longer songs but less frequently after being sleep deprived.
- Sleep deprived magpies sing more during the afternoon, instead of mornings and evenings.

What comes next?

- Analyze more song parameters to quantify performance
- Measure sleep quality, quantity and times

¹McCarthy, A. H., et al. (2013). Differences between the songs of rural and urban Australian magpies (*Cymnorhina tibicen*) and the potential consequences for territorial interactions. *Notornis* 60: 143-150.

²Giret, N. (2019). The Role of Sleep in Song Learning Processes in Songbird. *Handbook of Sleep Research*: 395-410.

³Deregnacourt, S., et al. (2005). How sleep affects the developmental learning of bird song. *Nature*, 433: 710-716.

* Icons made by Freepik, Smashicons, Good Ware at flaticon.com and edited by Juliane Gaviraghi Mussoi.



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