The evolution of song discrimination in pied flycatchers

We are seeking a motivated, responsible student to perform song playback experiments to 12-day old nestling flycatcher songbirds to resolve a key question about what factors drive the evolution of song discrimination in birds. The student would gain valuable experience conducting field work, analyzing data, and to be a co-author on a high-level publication.

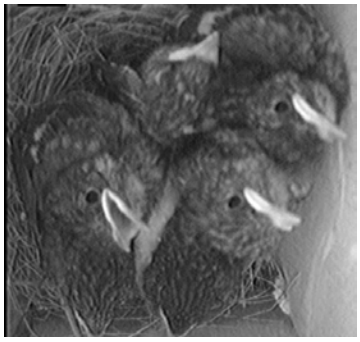
Fieldwork would take place in **Sweden** or the **Netherlands** between **May and June, 2018**.

Background

Juvenile songbirds learn their songs by listening to and copying the vocalizations produced by adults. But how do they ensure they learn the right songs?

Remarkably, birds as young as 10 days old can recognize their own species' songs, which should help them learn the "right" songs. However, we do not know how or why this ability has evolved.

Adult pied flycatcher male singing.



12 day old pied flycatchers responding to song during a playback experiment.

Research Plan

Nestling collared and pied flycatchers (*Ficedula spp.*) respond more to their own species' songs more than to the songs of the other species where they co-occur. The project has two goals:

1) Determine which song features young flycatchers listen for to "know" they are listening to their own species.

2) Determine if discrimination of their own species' songs is stronger in populations where nestlings co-occur with the other species.

Methods

The student would, in collaboration with a Swedish-based researcher or a local Dutch team, perform field experiments to resolve these hypotheses. The experiments involve temporary collecting nestlings and video recording their responses to different songs in the field. Each experiment takes around 20 minutes and we hope to test 30-50 clutches. After recordings are collected, the behavior of individual nestlings is quantified from video analysis and compared across song treatments. These protocols are well-established and have been used successfully over the last 4 years.

Interested bachelor and/or master's level students are encouraged to contact **David Wheatcroft**, the post-doctoral researcher leading this project.

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