Effects of nestling age and season on prey selection in pied flycatchers (*Ficedula hypoleuca*)

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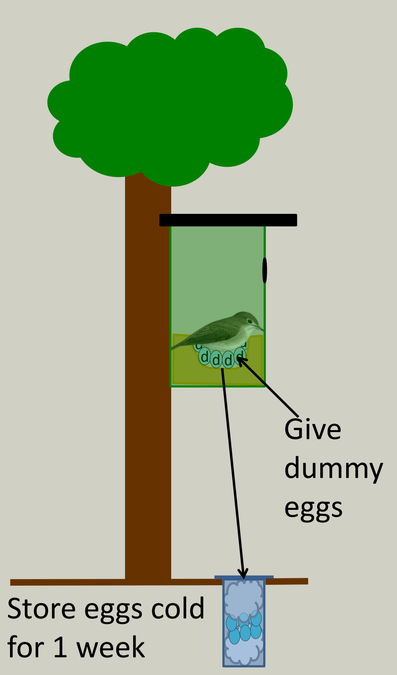
INTRODUCTION

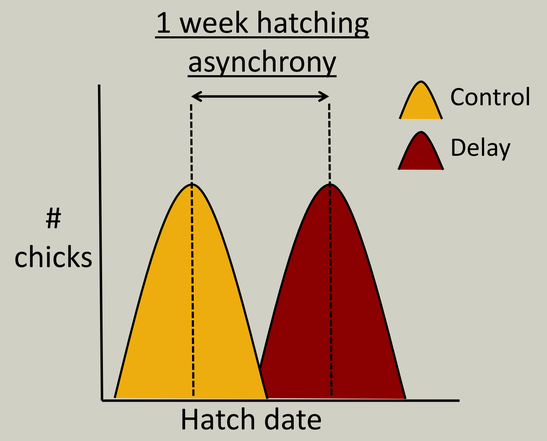
Many temperate passerines match their provisioning effort with a short peak of caterpillar abundance and with ontogenetic shifts in dietary preferences of their brood. Past studies have found a seasonal decline of caterpillar provisioning (Burger et al. 2012), and an early age dependent provisioning of Arachnida (Betts 1955, Royama 1970 in titmice). However, few studies have looked at several prey types simultaneously to disentangle nestling age or season dependent constraints in an experimental setup.

AIMS

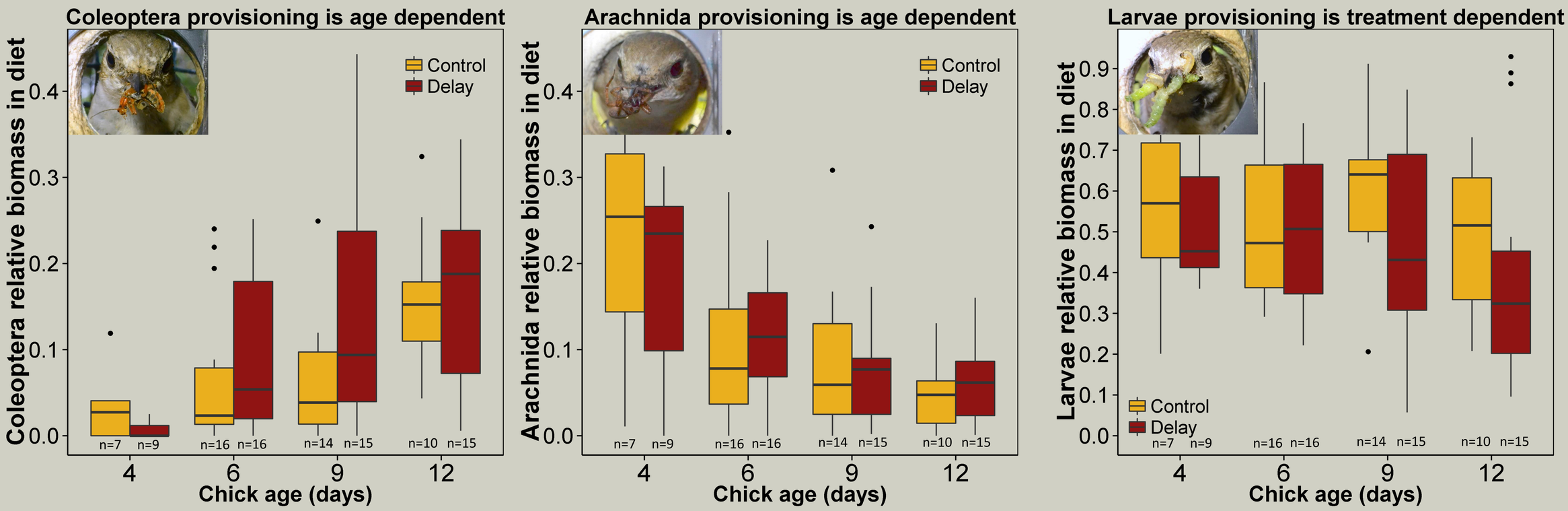
- Understanding parental prey choice in relation to:
  - Seasonal availability: delay experiment
  - Offspring age: 4 sampling efforts per brood

DELAY EXPERIMENT





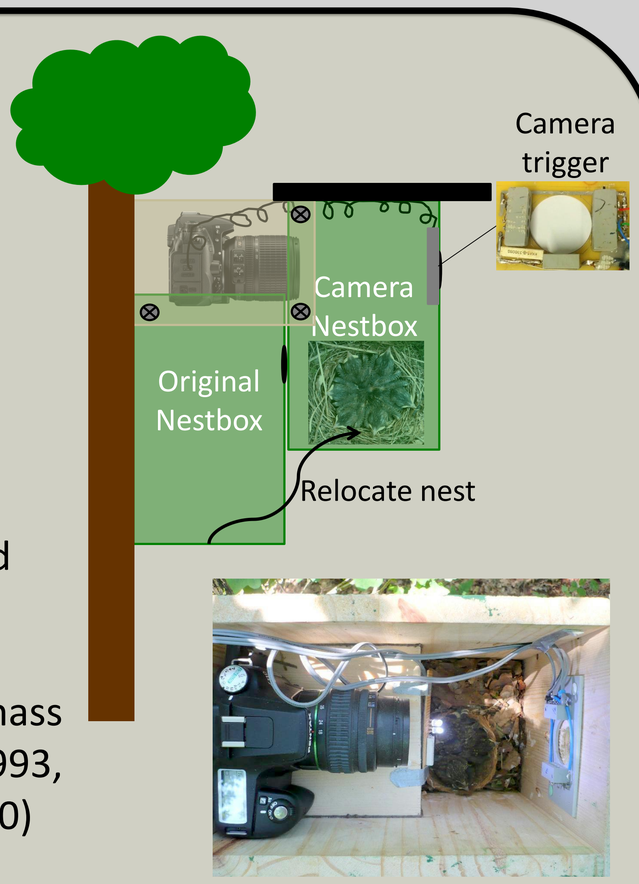
RESULTS



Model: relative biomass ~ chick age + treatment + (1|area) + (1|nestbox)

CAMERA TRAPS

- Two hour photo sessions
- Four discrete chick ages
  - 4, 6, 9, 12 days old
- 8670 food items analyzed
  - Prey type
  - Prey size
  - Converted to biomass (Sample et al. 1993, Gowing & Recher 1970)



DISCUSSION

Our results show that young nestlings receive more Arachnida and old chicks receive more Coleoptera prey items, irrespective of their seasonal timing. Moreover, the diet of experimentally delayed animals consisted of fewer caterpillars. We suggest that some prey items are crucial to the early development of flycatchers, and that late breeders are potentially more food limited than early breeders.

An exciting next step would be to relate specific provisioning choices to components of fitness, which can be done now that we have quantitative and qualitative diet data. If pied flycatchers are food limited later in the season, we expect to find an effect on parental survival, chick growth or recruitment success of delayed broods.

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