

LAST LAID, FIRST SERVED: AN EXPERIMENTAL APPROACH TO DISENTANGLE THE EFFECTS OF HATCHING ASYNCHRONY AND TESTOSTERONE IN COMMON TERN CHICKS

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In many larid species asynchronous hatching establishes a distinct within-brood hierarchy accompanied with competitive asymmetries which are often detrimental to last-hatching chicks. A possible mechanism that is thought to mitigate the effects of hatching asynchrony is the differential allocation of resources across the laying sequence by the mother. In this context, the maternal deposition of androgens into the egg yolk increasing with laying sequence has received a lot of attention in recent research. In order to disentangle the effects of hatching asynchrony and the adaptive value of maternal androgen deposition we conducted a field experiment using the common tern (*Sterna hirundo*) as a model species as there is evidence for increasing concentrations of yolk androgens with egg-laying order (French *et al.*, 2001). We manipulated the natural hatching sequence within a brood, so that chicks from last laid eggs hatched first and vice versa. We hypothesized that chicks hatching first from last eggs should benefit from the combined advantages of hatching first and from an egg containing more androgens. We measured continuous chick growth and testosterone (T) levels in sibling broods at three successive post-natal developmental stages. Our preliminary results do not yet show a coherent picture but in general testosterone levels were low, and we did not find clear effects of egg position on plasma T levels and growth of the chicks.

References

French J.B., I.C.T. Nisbet, I.C.T. and H. Schwabl. Maternal steroids and contaminants in common tern eggs: a mechanism for endocrine disruption? *Comp. Biochem. Phys. C* 128:91-98.