Australian National University

PUBLIC LECTURE

Competitive phenotypes in females: proximate origins and ultimate outcomes

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Slatyer Seminar Room R.N. Robertson Building (Bldg. 46), Linnaeus Way, ANU

In a variety of taxa, male reproductive success is positively related to expression of costly traits such as large body size, ornaments, armaments, and aggression. These traits are thought to improve male competitive ability, and thus access to limited reproductive resources. Females of many species also express competitive traits. However, we know very little about the consequences of individual variation in competitive traits and the mechanisms that regulate their expression in females. Consequently, it is currently unclear what advantage a female gains from competitive traits. Female expression of competitive traits could be a non-adaptive by-product of selection on males, or due to selection acting on females. When males compete for mates, individuals that are capable of expressing a more competitive phenotype may receive benefits that offset potential costs i.e. an increase in the number of mates often compensates for a shorter lifespan. For females, additional mates may not enhance fecundity; so expressing a more competitive phenotype may incur the additional costs of trait expression without additional benefits.

I integrate proximate and ultimate frameworks in order to better understand the evolution and maintenance of female expression of competitive traits. I used a North American songbird, the dark-eyed junco (*Junco hyemalis*) to address the following questions: do females compete; do competitive traits covary; does adult, or developmental, androgen exposure predict competitive ability; do females pay a cost; and how does trait expression relate to fitness.

We found that females do compete, that larger females are more competitive, that androgen exposure predicts competitive trait expression, and though females appear to pay a cost for trait expression they also have higher reproductive success. This suggests that our assumptions about female reproductive success, female-female competition and female expression of competitive traits may be overly simplistic and in need of a reappraisal.

Presented by

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