

ABSTRACT

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Sex roles in coucals – a unique model system to answer Tinbergen's four questions

Host: Jutta Schneider

Female-biased investment into zygote formation (anisogamy) often leads to 'Darwinian sex roles' with stronger male competition and larger female choice. Often, this also comes with larger female investment into parental care. In some species, however, these sex roles are 'reversed' with females competing more strongly, and males providing more care. In birds, this occurs in about 1% of all species, most of which are precocial, that is the young hatch with feathers fully developed and leave the nest after hatching. So far, the only known group of altricial birds (where young hatch naked and need to be warmed and fed in the nest) in which sex roles are reversed are coucals (Centropodinae). At least one species – the black coucal (*Centropus grillii*) – has evolved a classical polyandrous mating system with large females competing for access to small males. A female forms a 'harem' with up to five males, each of which tends his own nest and young without help from the female. In south-western Tanzania, black coucals share their habitat with white-browed coucals (*C. superciliosus*), which are socially and genetically monogamous and provide biparental care, allowing me to study close relatives with different mating systems in the same habitat. I ask how and why sex roles in coucals evolved, attempting to explore the phenomenon from all four angles of Tinbergen's questions. Specifically, I ask which mechanisms drive sex roles, how do sex roles develop during ontogeny, what are the benefits of reversed sex roles, and which life-history and ecological factors led to their evolution?

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