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All Abstracts

Ground floor lecture hall centre HZ
Essence poster E-Sy14-i003-E



Symposium 14
Family interactions

**Determinants and fitness consequences of infidelity in the cooperatively breeding
Seychelles warbler**

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Summary statement:

Infidelity is widespread yet its evolutionary basis remains elusive due to low power to assign paternity; we apply powerful techniques to unravel this.

Abstract:

Female infidelity is widely reported in the literature, yet the causes and fitness consequences of extra-pair parentage remain elusive mainly due to low power to assign paternity and difficulties in monitoring fitness accurately. The low power results from the presence of unsampled candidate fathers, especially in open populations, and the presence of closely related candidate fathers, which is particularly problematic in group-living species with limited dispersal. The latter problem can be overcome by using large numbers of polymorphic microsatellites and applying a powerful Bayesian technique that uses these genotypic data to assign parentage, while incorporating informative phenotypic data, such as paternity distance. Furthermore, closed wild systems represent a rare opportunity to measure fitness accurately. The Seychelles warbler *Acrocephalus sechellensis* is such a system; warblers almost never leave their resident island, so through annual monitoring and genetic sampling we can accurately measure survival and fecundity of the whole population. We use the Bayesian pedigree construction method on a 15-year dataset (30 microsatellite loci and paternity distance) to assess the effect of age and social status on paternity. Paternity success was predicted by age and dominance status. Males, but not females, displayed individual variation in extra-group parentage; however, extra-group paternity did not significantly increase a male's annual breeding success. We combine our findings to improve our understanding of the adaptive basis of reproductive decisions and trade-offs between helping, breeding and extra-group parentage in the cooperatively breeding Seychelles warbler.

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