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## Geometric morphometric methods show no shape differences between female and male kākāpō (Strigops habroptilus) bills and claws

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### Abstract

Kākāpō (Strigops habroptilus) are the only parrot species known to have a lek-based mating system. In competing opportunities with females, males can fight intensely with one another, sometimes with fatal consequences. Males may have evolved more deeply hooked bills and raptorial claws than females if these confer advantages in conflicts with other males. We studied bill and claw shape in 28 museum specimens using geometric morphometric methods and found no sex differences. While no claw shape sex differences were identified, we did find kākāpō lateral toe claws are significantly more hooked than their medial toe claws which are flatter. Claw shape in other parrot species has yet been analysed via geometric morphometric methods, it is therefore unknown whether this claw configuration is unique to kākāpō.

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