# Female birds -- acting just like the guys -- become sexual show-offs in cooperative breeding species

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The superb starling is an example of a cooperatively breeding species in which the females have evolved the same elaborate plumage as males.

(PhysOrg.com) -- Female birds in species that breed in groups can find themselves under pressure to sexually show off and evolve the same kinds of embellishments - like fanciful tail feathers or chest-puffing courtship dances - as males, according to new research in the latest issue of *Nature* (Dec. 10, 2009).

"We've known it happens with females in some specialized cases, but it's probably more widespread than we ever realized before," said Irby Lovette, the Fuller Director of Evolutionary Biology at the Cornell Lab of Ornithology and co-author of the Nature study published with Dustin

Rubenstein, Cornell Ph.D. '06, of Columbia University.

The researchers found compelling evidence for why sexual selection sometimes acts with equal strength on both females and males. Sexual selection is strongest in situations where not every individual gets a chance to reproduce - as when rams butt heads over access to a flock of ewes.

Called reproductive skew, this pattern tends to be common in males. Females of most species generally invest more in producing and nurturing young and tend to have more steady reproductive success.

Rubenstein and Lovette reasoned that if sexual selection were to operate on females, it would likely be in situations where females had to compete for mates. They found such scenarios among more than a dozen species of cooperatively breeding starlings in Africa.

In these systems, family groups raise young jointly, helping one or more breeding pairs with feeding and protecting against predators.

With only a limited number of breeding pairs, many of the females don't get to nest each year. On the other hand, unpaired males still have chances to father young through infidelity with one of the breeding females. Competition to be chosen as a mate is somewhat relaxed for males but intensified for females.

To test whether females show evidence of sexual selection on the same traits that males have used to compete for mates, Rubenstein and Lovette compared the 17 species of cooperatively breeding starlings in Africa with the continent's 28 species of typical pair-breeding starlings. They also used DNA samples to reconstruct the African starlings' evolutionary history, confirming that cooperative breeding had developed independently several times within the family.

After measuring more than 1,600 museum specimens of all 45 species, the researchers report that males and females of cooperatively breeding species were substantially more similar to each other - closer in size and with similar plumage - than males and females of pair-breeding species.

The result paints two different pictures of evolution: Among pair-breeders, sexual selection on males makes the sexes look increasingly different; in cooperative breeders, competition among females leads to them evolving the same showy traits as males.

The finding that reproductive skew dictates how sexual selection acts could apply to nearly any species that breeds in groups, the researchers believe.

"This goes beyond starlings," Rubenstein said. "Any species that lives with relatives might be expected to show similar patterns. This type of complex social behavior is not only common in birds, but also many mammals - including humans - and insects."

Source: Cornell University (news : web)