Birds of a different color: Why some birds have more than one color type

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In some animals, the same species can occur in two or more color types, or morphs. New research may help solve the mystery of how this can occur despite the pressures of evolution.

Researchers who studied Black Sparrowhawks, which occur as either dark or light birds, found that the hunting success (measured by how much food they brought to their chicks) of each color type differed depending on light levels. Thus dark birds did better when it was darker and light birds did better when it was brighter. When the investigators looked at Black Sparrowhawks across the whole of South Africa, they found that the frequency of the color types varied according to the ambient light levels found during the breeding season.

"Our study is the first study to reveal support for the idea that color polymorphism is due to different morphs being better adapted to different light conditions," said Gareth Tate, PhD student at the Percy FitzPatrick Institute and lead author of the *Ecology Letters* study. "This is an important finding and helps evolutionary biologists understand how multiple color varieties can co-exist together in the face of natural selection."

Dr. Arjun Amar, supervising author of the paper added, "We think that dark morph birds capture more prey in duller conditions because they are better camouflaged against darker cloudier skies. Within our study area, high rainfall coincides with when the species is breeding, and this may also explain why we have so many of this usually rare colour type

here."

More information: Gareth J. Tate et al, Differential foraging success across a light level spectrum explains the maintenance and spatial structure of colour morphs in a polymorphic bird, *Ecology Letters* (2016). DOI: 10.1111/ele.12606

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