

'Wingman' -- how buddies help alpha males get the girl



Alpha and beta lance-tailed manakins dance for an attentive female.
Photograph by Emily DuVal

Why do some individuals sacrifice their own self-interest to help others? The evolution and maintenance of cooperative behavior is a classic puzzle in evolutionary biology. In some animal societies, cooperation occurs in close-knit family groups and kin selection explains apparently selfless behavior. Not so for the lance-tailed manakin.

Males of this little tropical bird cooperate in spectacular courtship displays with unrelated partners, and the benefits of lending a helping wing may only come years down the line. Instead of fighting over females, pairs of male lance-tailed manakins team up to court prospective mates. Two males dance together for interested females, using tightly synchronized 'leapfrog' and flight displays to impress the opposite sex. But when the dance is over, only the dominant male, the alpha, gets the chance to mate.

Emily DuVal, of UC Berkeley's Museum of Vertebrate Zoology, studied these birds to answer the question of why subordinate beta males cooperate. Starting in 1999, DuVal color-banded and observed wild lance-tailed manakins in Panamá to follow changes in status over multiple years. Then she used genetic analyses to determine chicks' paternity and genetic relationships among adults.

The results of DuVal's work, to be published in the April issue of *The American Naturalist*, showed that male partners were unrelated, and betas rarely sired chicks, ruling out two of the major hypotheses explaining males' cooperative behavior. Following males across years showed that betas became alphas more often than other males, but not necessarily at the same territory where they were betas. Even when the local alpha slot was empty, some betas moved to be helpers elsewhere rather than take over the vacant position.

"Without being an alpha, there's essentially no chance for these males to reproduce," says DuVal. "My results suggest that betas could actually benefit from staying betas for a while, for example by gaining courtship skills during a sort of apprenticeship or by forming alliances with other males who later act as their betas." These results contrast with those from studies of other birds with cooperative courtship displays: wild turkeys strut cooperatively with close relatives, and ruffs (a shorebird) form alliances of males that often both mate while they are partners. These contrasts are interesting because they show that similar behavior can result from very different social and selective environments. DuVal is now a postdoctoral researcher at the Max Planck Institute for Ornithology, Germany, where she is investigating how female lance-tailed manakins choose their mates.

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