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I WANT MORE! FAMILY FEUDS OVER FOOD

When most of us think of parent birds feeding a brood of nestlings, it conjures up an image of familial harmony. But this could not be further from the truth as beneath this veneer of cooperation and altruism lies a complex network of optimal investments and subversive strategies.

Each time an adult finds a prey item it must weigh up multiple options. Should I eat this myself or, if I pass it on, to which nestling should I give it? Offspring also have multiple decisions to make when an adult arrives with food. How much should I beg? Is that really my brother and if it's not, then should I lie about how hungry I am? Family life is far from peaceful.

In the 1970s, biologist Robert Trivers proposed a theory of Parent–Offspring Conflict (POC). In sexually reproducing species, offspring only share half of their genes with each of their parents and each of their siblings. Individual young therefore stand to gain the greatest long-term benefits by trying to monopolise parental care, while the best strategy for parents is to distribute care evenly among their offspring. POC can occur on many levels of severity, from siblicide to the evolution of begging behaviour.

Most studies of POC in birds have focused on nestlings. But for many bird species parental care is not confined to the nestling stage. In a number of cooperatively breeding species, for example, the peak period of provisioning and the longest period of care occurs after the young have left the nest. The fledgling phase of a bird's development is very different to that of the nestling phase: the brood is much more dispersed, thereby potentially reducing competition for food, and fledglings can actively follow adults and beg for food.

A juvenile Southern Pied Babbler begs for food. But is this begging a genuine signal of need or an attempt to monopolise care?

PhD student Alex Thompson is using a habituated population of Southern Pied Babblers *Turdoides bicolor* in the southern Kalahari (see pages 30–34) to investigate conflict between parents, fledglings and other group members. Through supplementary feeding he is able to manipulate the hunger level of fledglings. By doing this in conjunction with playing back recordings of different begging calls, it is possible to explore the ways in which fledglings solicit food (is begging an honest signal of need?), how adults respond (can they be manipulated by devious fledglings?) and how the fledglings within a group react to one another when they are all seeking the same resource – food from adults (do they ignore each other, work as a group or compete?). Because the babblers have been trained to jump onto scales and weigh themselves on request, researchers can track the growth of fledglings (whether they are winners or losers in the parent–offspring wars) and determine how this influences their future success in life.

The outcomes of these conflicts affect offspring development and, eventually, their quality as an adult. Young birds that can win this conflict stand a greater chance of getting a high-quality mate and of having many offspring themselves: they are therefore the winners in the Darwinian struggle for survival. Given, however, that the 'perfect solution' differs for young and adults, it is likely that this is an evolutionary struggle, comparable to the ongoing arms races between parasitic birds and their hosts, with each trying to outwit the other. Interestingly, this type of conflict is not only observed in wild animals: many elements of human pregnancy are the result of an evolutionary struggle over resources between mother and child.