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## Pair behaviour – prey deliveries

Owls, like other birds of prey, capture most prey with their talons and deliver this prey to nidicolous young, that is, altricial young that stay in the nest until branching or fledging. Newton (1979) described three overlapping phases of female behaviour typical for breeding raptors with nestlings:

- 1) almost continuous brooding or shading before the young have developed their own thermoregulation;
- 2) presence near the nest for feeding and defending the largely helpless young; and
- 3) attendance with flexible periods of time spent distant from older nestlings or fledged broods.

Attendance patterns during the third phase varied greatly, and Newton suggested that the variation depends largely upon the hunting success of the male. Females seemed to leave broods only when the males' hunting efforts were insufficient and chicks required additional food. Researchers develop experiments to test such hypotheses around food shortage, by artificially increasing the number of nestlings (adding chicks from one nest to another) or decreasing brood size (removing chicks from a brood so adults do not have to hunt for them). Experiments largely confirm Newton's hypothesis. Female flight time increased when broods were increased in Eurasian Kestrels, and female hunting ceased almost completely in reduced broods (Dijkstra *et al.* 1990). Female American Kestrels spent more time hunting when broods were enlarged in a poor vole year, but there was no clear pattern in a year of higher vole abundance (Gard and Bird