MARSH HAWK RETRIEVES YOUNG TO THE NEST

by
H. G. Lumsden
Ontario Ministry of Natural Resources
P.O. Box 50
Maple, Ontario, Canada LOJ 1EO

Abstract

Semialtricial Harrier chicks frequently crawl from the nest into surrounding vegetation. A Marsh Hawk female was seen to retrieve 3 of her chicks to the nest. Records of raptors, including Harriers, eating dead chicks or feeding them to siblings are frequent. When a raptor encounters its chicks away from the nest, how does it distinguish them from prey? A breakdown in behavior between parents and their chicks has been suggested as a possible cause of kronism or progenicide in Herring Gulls and Double-crested Cormorants. Attack or predatory responses may be inhibited and retrieving behavior evoked by the color and doddering movements of Harrier chicks.

Introduction

Nice (1962) listed Harriers (*Circus* sp.) as having semialtricial young. Brown (1976) reported that chicks of the three British species of breeding Harriers may leave the nest at an early age and move temporarily into the surrounding vegetation. Brown and Amadon (1968) in their account of *Circus cyaneus* stated that from 2 weeks onward, the young creep out of the nest and hide in the vegetation near it, returning when the female arrives with food. Frances Hamerstrom (in litt.) wrote that North American Marsh Hawk (*Circus cyaneus hudsonius*) chicks commonly crawled away from the nest into the grass, but she presumed that they returned by themselves.

Von Frisch (1966) described how a female Montagu's Harrier (*Circus pygargus*) picked up a 3-day-old chick by the neck and carried it back to the nest from which it had crawled. He was able to film this behavior the next day after placing a chick 70 cm from the nest.

Observations

On 9 June 1979, I placed a blind at a nest of a Marsh Hawk near Anten Mills (44°29'N, 79°50'W), Simcoe County, Ontario. On 16 June at 0915, I entered the blind to watch and photograph the birds. One chick was at least 10 days old, having hatched before 7 June, a second had hatched by 9 June, and 3 more by 14 June. The youngest were therefore less than 7 days old. Their first pale cinnamon coat of down had either faded or had molted, and they had lost the dark eye ring present at hatching. They were still feeble and with many pauses crawled from the nest into the shade of the surrounding vegetation. At 1042 the female landed on a cedar about 1 m above the ground, and at 1048 she settled on the nest. Almost immediately 2 of the chicks crawled back to the nest and pushed under her. After 15 minutes, she stood up, moved about 60 cm and, with her beak, picked up a chick by the down and perhaps skin of the upper neck, turned and carried it to the nest and dropped it. About 20 minutes later she again left the nest and picked up a chick (figure 1) about 45 cm away, turned back to the nest and dropped it. The movements were slow and deliberate taking about 20 seconds from first

grasping the chick to dropping it in the nest. At 1143 she again moved about 30 cm behind the nest, picked up the fifth chick by a leg, turned and dropped it into the nest. All three chicks which she carried protested this treatment with chittering calls, but subsequent examination did not reveal any injury. All survived until at least 1 July, but by 9 July they had been killed by an unknown predator.

Discussion

Parental carrying of young to a nest or den is very common in mammals particularly among carnivores and rodents. Instances of birds carrying young have been rarely witnessed except among some waders. In raptors von Frisch (1966) cites Holstein's report in Makatsch (1959, not seen) of a Goshawk (*Accipiter gentilis*) which carried its young to another nest after disturbance.

Raptors seize their mammal and bird prey with their feet before the beak is used to kill and often decapitate it. The Harriers discussed here picked up their chicks with their beaks which suggests a pattern not derived from hunting behavior. Its basis may have stemmed from nest-building behavior, for Brown and Amadon (1968) have reported that the Hen Harrier (*Circus c. cyaneus*) brings nest material to the nest in both the beak and feet.

The question arises, How does a parent raptor distinguish its poorly developed chicks from prey when it encounters them away from the nest? Such a question seldom arises in arboreal or cliff nesters, but is a valid question for ground-nesting species such as the Harriers. This question is particularly pertinent in the light of Brown and Amadon's (1968) generalized statement that an adult female (raptor), finding a dead chick in the nest, is likely to feed the carcass to the remaining young or possibly eat it herself. Balfour and Macdonald (1970) specifically reported a case of an adult female Hen Harrier which carried off a dead chick, brought it back decapitated, and fed it to the brood.

Brown (1976) also states that the Sparrowhawk (*Accipiter nisus*) is to a degree a cannibal on its own young. He does not, however, discuss the circumstances.

The mechanisms involved in preventing predators from killing and eating their own young occasionally break down. Parsons (1971) reported 15 cases of kronism among 747 pairs of Herring Gull (*Larus argentatus*) in which parents killed and ate one of their brood. He also describes extensive cannibalism in this colony in which certain pairs preyed upon the young of other pairs. He suggested that kronism may be due to a breakdown in the behavior between adults and their chicks rather than to a response to food shortage. This suggests the existence of, and breakdown of, an inhibiting mechanism.

Siegel-Causey (1980) recorded that out of 56 Double-crested Cormorant (*Phalacrocorax auritus*) chicks which died in the colony he studied, 16 were killed by parental attack. They were, however, not eaten; some were incorporated in the nest material. He speculated that parental inexperience and aberrant chick behavior may have been responsible.

A description of a mechanism which inhibits attack by a parent on her chicks has been documented by Schleidt et al. (1960) in domestic Turkeys (*Meleagris gallopavo*). They found that the peeping calls of newly hatched chicks appeared to inhibit attack by normal hens which attacked silent golden hamsters placed near the nest. Artificially deafened hens attacked chicks and hamsters indiscriminately.

Many raptors vigorously defend the vicinity of the nest from intruders. It seems likely that attack behavior by parent Harriers was either inhibited by the appearance of the chick or was not released because the movements and behavior of the chick were not appropriate.

Marsh Hawks prey on a variety of mammals and birds, including the juvenile young of precocial species such as pheasants and domestic poultry (Breckenridge 1935), which are similar in size to Marsh Hawk chicks at the age when they first crawl from the nest. However, the cryptic coloration of these species is very different from the pale, unspotted down plumages of Harrier chicks.

Räber (1950) found in simulation experiments with Tawny Owls (*Strix aluco*) that dummies of small mammals were not seized unless they had legs and moved in a particular manner. The total configuration of mammal prey was important in releasing Tawny Owl predatory behavior. It is possible that a similar mechanism is present in Harriers.

Small Harrier chicks seem to have heads too heavy for their necks, they shuffle on their tarsi, and their movements can best be described as doddering and quite unlike the movements of potential prey. There is a possibility that the color of Harrier chicks and/or their characteristic movements may release the retrieving behavior observed. This behavior in Harriers, when their chicks are small, is certainly adaptive and probably normal. It has seldom been observed because the period during which it takes place is short, and Harriers are not easy to watch at the nest.

Ministry of Natural Resources, Wildlife Research Section, Contribution No. 79-20

Literature Cited

Balfour, E., and M. A. Macdonald. 1970. Food and feeding behaviour of the Hen Harrier in Orkney. *Scottish Birds* 6:157–166.

Breckenridge, W. J. 1935. An ecological study of some Minnesota Marsh Hawks. *Condor* 37(6):268–276.

Brown, L. 1976. *British birds of prey.* Collins, Glasgow. 400 pp.

Brown, L., and D. Amadon. 1968. *Eagles, hawks and falcons of the world.* McGraw-Hill, New York. 945 pp.

Makatsch, W. 1959. *Der Vogel und seine Jungen.* Neue Brehm-Bücherei, Ziemsen-Verlag Wittenburg/Lutherstadt.

Nice, M. M. 1962. Development of behavior in precocial birds. *Trans. Linn. Soc.* 8. 211 pp.

Parsons, J. 1971. Cannibalism in Herring Gulls. *British Birds* 64 (12): 528–537.

Räber, H. 1950. Das Verhalten von gefangener Waldohreulen (*Asio otus otus*) und Waldkauze (*Strix aluco aluco*) zur Beute. *Behaviour* 2: 1–95.

Schleidt, W. M., M. Schleidt, and M. Magg. 1960. Störung der Mutter-kind-beziehung bei Truthühnern durch Gehörverlust. *Behaviour* 16: 254–260.

Siegel-Causey, D. 1980. Progenicide in Double-crested Cormorants. *Condor* 82: 101.

von Frisch, O. 1966. Wiesenweihe (*Circus pygargus*) trägt Junge ein. *Zeitschrift für Teirpsychologie* 23: 581–583.

Figure 1. A Marsh Hawk carrying her chick back to the nest.

KESTREL ROBBING BARN OWL

by
Peter J. Dunn
25 Wreyfield Drive
Scarborough, Y012 6HA, England

At approximately 10:30 hours on 30 January 1971, while walking along a lane close to Loch Ken, Dumfries, F. Oates and I saw a male Kestrel (*Falco tinnunculus*) sitting on the apex of a chicken coop in the centre of a small field. It was uttering a very excited chatter: "Kee-kee-kee." Suddenly, a Barn Owl (*Tyto alba*) flew out of the coop carrying a small rodent toward an old barn. The Kestrel gave chase and attacked the owl from behind; it grabbed the rodent and appeared to be "back-pedalling" frantically, trying to take it from the owl. The latter continued flying, dragging behind it the Kestrel, which was still hanging on to the rodent when the owl disappeared into the barn. Neither bird was seen for half an hour; then the Kestrel was seen preening in the top of a tree. In the afternoon, we revisited the area and again saw the Barn Owl quartering the same field, at times only 4 m from us. It dropped into the grass twice, but did not appear to catch anything; on a third occasion it caught a large rodent and mantled it in the grass. Within seconds, the Kestrel arrived apparently from nowhere, and landed on the owl's back. The two rolled over in the grass, fighting for the prey; the falcon managed to take it and flew off over the valley. The Barn Owl lay in the grass for about a minute, with its beak open and wings spread, and then resumed hunting. When it next caught a small rodent, it swallowed it almost immediately.