A CASE OF MOBBING BEHAVIOR IN FERAL PIGEONS Columba livia DIRECTED TOWARDS A SPARROWHAWK Accipiter nisus

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Riassunto - Un caso di mobbing di Piccione domestico *Columba livia* **diretto verso uno Sparviere** *Accipiter nisus.* Viene descritto un caso di *mobbing* di gruppo effettuato da Piccioni domestici nei confronti di una femmina di Sparviere. Questo comportamento, molto poco frequente nei piccioni, è difficile da interpretare e potrebbe essere stato appreso per imitazione dai Parrocchetti dal collare che frequentemente lo attuano in quell'area nei confronti di svariate specie di rapaci. **Parole chiave -** Piccione domestico, Sparviere, mobbing

Abstract - A case of group mobbing by Feral Pigeons *Columba livia* directed at a female Eurasian Sparrowhawk *Accipiter nisus* is described. This behavior, which is rarely observed in pigeons, is difficult to interpret and may have been acquired through social learning by imitation of Rose-ringed Parakeets *Psittacula krameri*, which frequently exhibit such behavior in the area towards various raptor species.

Key words - Feral Pigeon, Sparrowhawk, mobbing

One of the most well-known examples of avian cooperation is the mobbing of a predator by a group of birds. Predators that rely on surprise to capture their prey gain no advantage from remaining in an area where they have been detected and are now encircled by persistent mobbers (Lovette & Fitzpatrick, 2016). The Feral Pigeon *Columba livia* is a species that only occasionally engages in mobbing behavior (Goodwin, 1983; Chitty, 2019). Johnston & Janiga (1995) report that "some flocks engage in apparent harassment of a flying predator" and Azzopardi (1979) describes an instance of a pigeon attacking two Black-headed Gulls *Chroicocephalus ridibundus*.

On February 9, 2025, at 11:00 AM, in an agricultural area with scattered houses in the municipality of Cerveteri, Rome (42°00'N, 12°03'E), I observed a female Eurasian Sparrowhawk *Accipiter nisus* circling at approximately 30–40 meters above the ground. The raptor was attacked twelve times by a flock of 24 Pigeons. Initially perched on the roof of a nearby house, the Pigeons took flight as a tightly coordinated group and, performing continuous turns and ascents, maintained a position above the raptor before rapidly diving towards it without making physical contact. This behavior, which can be unequivocally classified as mobbing, lasted for approximately seven minutes until the Sparrowhawk left the area. The Pigeons then returned to their original rooftop perch.

Female Sparrowhawks regularly prey on Pigeons (Panter & Amar, 2021), and a resident pair frequently hunts in the observation area. In the preceding weeks, two predation events involving Pigeons were recorded within a few dozen meters of the house where the mobbing Pigeons were roosting, but predation events are likely more

frequent than those observed.

In previous instances when the Sparrowhawk flew over the area at altitudes exceeding 10 meters, the Pigeons exhibited panic responses, taking off in rapid and erratic protean flight patterns. Other raptor species that are potential predators and regularly frequent the area, such as the Black Kite *Milvus migrans*, Red Kite *Milvus milvus*, and Common Buzzard *Buteo buteo*, have never triggered mobbing behavior.

A high level of stress caused by the high risk of predation could stimulate mobbing behavior, but it is difficult to hypothesize the actual reason behind such an infrequent behavior. One potential pathway towards the emergence of such behaviour is imitation of other species. Notably, several instances of mobbing by flocks of Rose-ringed Para-keets *Psittacula krameri* targeting raptors have been observed in this location (Battisti & Fraticelli, 2023), as well as other species (e.g. Yellow legged Gull *Larus michahell-is*, Starling *Sturnus vulgaris*, Hooded Crow *Corvus cornix*). While this remains only a remote hypothesis, several studies have investigated the imitative abilities of Pigeons, but always with the aim of obtaining food (e.g.: Zentall *et al.*, 1996; Klein & Zentall, 2003; Saggerson *et al.*, 2005; McGregor *et al.*, 2006).

Moreover, the species exhibits a high degree of behavioral plasticity, which has led to the selection of breeds with distinctive flight characteristics (e.g.: Entrikin & Erway, 1972; Kabir, 2015), potentially facilitating the selection of these traits. Future research should focus on areas where the studied species (Pigeons and Sparrowhawks) are highly prevalent to maximize opportunities for observing such rare behavior.

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