

Evidence of Pair Bonding Between Common Raven (*Corvus corax*) and American Crow (*Corvus brachyrhynchos*)

by
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Since 1985, a single Common Raven (*Corvus corax*) has frequently been observed approximately 145 km south of its usual range, in Etobicoke, Metropolitan Toronto, Ontario (43° 36' N, 79° 30' W), in the area of the former Lake Shore Psychiatric Hospital, generally from September to June. It is believed that it is surviving by killing Rock Doves (*Columba livia*). Two nests were built by this bird during the spring of 1987. At that time there was no sign of a mate (Jefferson 1989).

Many observations during 1990 indicate that it has now paired with an American Crow (*Corvus brachyrhynchos*). Because crows commonly chase ravens (Bent 1946), this unusual and rare occurrence is worth documenting.

On 5 April 1990, Mike DeLorey (pers. comm.) observed a raven circling with a crow in the Etobicoke Creek Valley, approximately 3-4 km ("as the crow flies") northwest of the hospital grounds. No harassment was involved. The raven would often return to a perch in a tree where it would sit for a while, then fly out and circle on the outside of the crow.

Cora McEvoy and I observed a raven on 8 May 1990, sitting on one of the nests illustrated in the above mentioned article — the one on the right (east). Only the tail of the raven was visible. The size of the nest (approximately 60 cm across and 45

cm high) has increased since the 1987 photograph, so that it is now larger than the one on the left.

Approximately ten minutes after the raven had been observed on the nest, it flew south to the edge of the lake, picked up a piece of what appeared to be white tissue (or plastic garbage), shredded it with its beak and flew back to the nest with it. The tail of the raven was observed sticking out of the nest when we left 40 minutes later.

On 9 May 1990, about 250 m northeast of these nests, a group consisting of C. McEvoy, J. Hooey, and B. Wilkinson, and the author, observed a raven fly into a Norway Spruce (*Picea abies*) beside a crow. In the raven's feet was what appeared to be a freshly killed animal, about the size of a Rock Dove. While on the branch the raven continued holding the carcass, tearing it apart with its beak and eating. The raven then moved a few centimetres closer to the crow (Figure 1), fed the crow and tried to mount it (observed by McEvoy, Hooey, and Wilkinson, while the author was attempting to photograph the pair). We were standing around the tree about 5 m away and the raven and crow were on a branch 2 m above the ground. The raven then quickly flew off to the east; the crow moved to its right to get the "left-overs" to eat, then flew off in the same direction as the raven.



Figure 1: Common Raven (left) and Common Crow (right) at former Lake Shore Psychiatric Hospital, Toronto on 9 May 1990. Photo by *Beth Jefferson*.

Don McClement and I observed a raven and crow fly into a tree on Fifth Street, just north of Lake Shore Blvd., approximately 1.25 km northeast of the nest site, on 19 June 1990. They remained there for more than ten minutes. Foliage and private property prevented accurate observation of behaviour.

On 25 June 1990, D. McClement (pers. comm.) watched a raven and a crow engaging in mutual or allopreening, at the hospital grounds, for a considerable period of time, slowly moving their bills along the top and sides of each other's heads and down the necks.

On 3 August 1990, Helen Smith observed a raven and crow on the grass in the Old Mill area, approximately 9 km northeast of the forementioned nests.

During the OFO Outing, Sunday,

21 October 1990, lead by Ron Scovell and Alvaro Jaramillo, a number of members, including the author, watched a flock of 8-10 crows and the raven flying west along the shoreline of the former Lake Shore Psychiatric Hospital grounds. The raven peeled off from the flock, alternately flying, wheeling and gliding with wings tucked in, to the northeast where it was then observed for several minutes sitting on a T.V. antennae beside a crow, doing its crow call. This could have been a flight display from the raven.

At approximately 1600 h, on 10 November 1990, hoarse cawing drew my attention to a Great Horned Owl (*Bubo virginianus*) and the raven that had landed in the top of a bare eastern cottonwood tree (*Populus deltoides*) outside my apartment windows in Etobicoke, approximately

30 metres from the Lake. The owl remained and the raven flew out of my sight. A couple of minutes later the owl flew, closely followed by both the raven and a crow to another tree, a silver maple (*Acer succharinum*) which had more foliage remaining, on the southwest side of the building. The owl landed about a metre below the crown of the tree and the raven 30 cm above it, calling occasionally. The raven proceeded to break off several small twigs with leaves and drop them on the owl. Its aim was poor and often these twigs missed the target. At this point I could not see the crow. A few minutes later the owl moved farther west, followed by the raven that was virtually landing on its back in its pursuit. My visibility was quickly obstructed by trees, however, so that the position of the crow could not be ascertained. Although using twigs as tools to attack is an unusual form of corvid behaviour to me, Kilham (1989) cites a number of incidents of ravens dropping objects like stones on intruders near their nests.

Again on 26 January 1991, I saw the raven and crow together on the new landfill adjacent to the hospital grounds, Col. Samuel Bois Smith Park, then flying west along the shoreline, the crow following the raven.

An additional sighting of pairing behaviour between the raven and crow was observed 7 March 1991, but this time two crows were involved, following the raven. They were circling around together, back and forth to and from the trees, for at least five minutes, in the vicinity of the previously described nest at the Lake Shore Psychiatric Hospital grounds (D. McClement, pers.

comm.). More recently — April and May 1991 — the raven has been observed carrying branches north across Lake Shore Blvd. at Twentieth St. (B. Wilkinson, D. McClement, pers. comms.). The raven has been seen south of this without the crow on the hospital grounds and the new lakefill several times since then, but not using the old nests, in which Rock Doves have taken up domicile. On 17 May 1991, close to the buildings, M. DeLorey and the author closely watched the raven eating what on later inspection turned out to be a nestling, and then fly off, being chased by Red-winged Blackbirds (*Agelaius phoeniceus*) after it had consumed all but the head, wings and intestines of said nestling. At this time, we were able to admire close at hand, the silvery grey cast to the raven's black wing feathers, both on the top and bottom, giving it a two-tone colour similar to that of a Turkey Vulture (*Cathartes aura*).

Both sexes of crow take an active part in nest building. Both sexes of ravens also contribute to the building of the nest, but in any particular pair either the male or female may do more work at some or all stages than the other. Both sexes of crow may help incubate (Bent 1946; Goodwin 1976). If a crow had been sitting on the particular nest described above, in the spring of 1990, it would have been impossible to have seen it. With ravens, the male is not reported to incubate but only covers the eggs when the female leaves the nest. In corvids, the male feeds the female during incubation and the female sometimes leaves the nest to be fed by the male nearby (Bent 1946; Goodwin 1976). The raven was seen offering food to the crow and trying

to mount the crow, so that it is likely to be a male (or a very oddly behaving female raven).

In Britian, three reports of hybridization of *C. corax* X *C. corone* (Carrion Crow) are cited in Gray (1958). Is it possible for hybridization to occur from the interspecies pairing of *C. brachyrhynchos* and *C. corvus*? If so what characteristics would be passed on to the next generation?

Acknowledgements

I greatly appreciate the many helpful comments of Clive E. Goodwin in reviewing this paper, who added the following interesting sideline: "On 7 January 1979, Arnold Dawe and I saw a raven being chased by a flock of crows in Coronation Park, Oakville!". Dr. James R. Rising, University of Toronto, Dept. of Zoology has been most helpful in the research of this article. Alvaro Jaramillo also reviewed this paper,

speculating on possible reasons for the unusual behaviour observed: "I don't know how these species pair, i.e. what displays or behaviour do they need to do to attract a mate. Something that may be significant is vocalization, and that this raven mimics the call of crows. Could this have led to its acceptance by the crow?"

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