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SHORT NOTE

Possible tool use by an Australian magpie (*Gymnorhina tibicen*)

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Members of the parvorder Corvida, including the Australian magpie *Gymnorhina tibicen*, have a relatively high level of innovative behaviour amongst birds (Timmermans *et al*. 2000; Lefebvre *et al*. 2004). An example of this behaviour is tool use in *Corvus* spp. (Hunt 1996; Caffrey 2000). Although Australian magpies (magpies hereafter) are known to manipulate objects in behaviour such as play (Pellis 1981ab; Kaplan 2004) they have not been reported to use tools. Here, I report a possible case of tool use by an adult magpie.

From 2004 to 2006, I observed a resident group of magpies around the Stardome Observatory in One Tree Hill Domain, Auckland, New Zealand. The Observatory is located on the southwestern slope of the 48 ha park that surrounds the extinct volcanic cone of Maungakiekie, or One Tree Hill. The

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vegetation consists of mostly grazed pasture amongst native and introduced trees. Public can access the park by either roads or walking tracks. Members of the magpie family are not banded, but the behaviour of the birds that I have observed for 2 years suggests that they consist of the same breeding pair and their offspring. For example, the adult pair is somewhat habituated to human presence and forage around the office window sills of the observatory, sometimes even flying onto them. Breeding pairs of magpie are generally sedentary and live on permanent territories (Kaplan 2004), which is consistent with my observations. The resident pair produced 2 successful broods between 2004 and 2006.

In late Jan 2006 at *c*.1230h, I observed an adult magpie and its recently fledged juvenile 15 m away, at the base of a large Japanese cedar *Cryptomeria japonica* behind the observatory building. I saw the adult pick a slender stick off the ground with its bill and poke it into the trunk of the cedar. The stick was held straight in its bill for several seconds before being dropped. After dropping the stick, the adult appeared to inspect or move it with its bill briefly, but I could not see what it was doing. This was the only time that I have seen a magpie probe anything with a stick. There was no interaction between the parent and juvenile from the time that the parent picked up the stick until it finished poking at it with its beak on the ground. The weather during the period of observations was fine and warm.

Interaction between the adult and juvenile magpies often included what has been described as "play" in that species (Pellis 1981a,b). This sometimes involved an adult and juvenile chasing each other around a tree trunk, or the use of objects like sticks, leaves, and paper. Object exploration and play is common in young magpies and species of *Corvus* and may be a process by which these birds develop their foraging skills (Pellis 1981a; Kilham 1989; Heinrich & Smolker 1998). Pellis (1981a) found that exploration and "play" with objects by young magpies was associated with foraging activities. All "play" that I observed in the family was social, involving 2 or more family members, but juvenile magpies can play alone with objects (Kaplan 2004). Object-play in other bird species has been reported by adults when no juveniles were present (Pettifor 1984; Watson 1992).

There are rare observations of tool in other corvoids. For example, the 1st reported instance of tool use by American crows *Corvus brachyrhynchos* was in a single individual (Caffrey 2000). Therefore, the lack of past evidence for tool use in magpies does not exclude this explanation for the behaviour that I observed. Indeed, that magpies, like many corvoids, manipulate objects in their bills when not nest building might facilitate the development of tool use by some individuals. I therefore interpret the behaviour described here as potentially the 1st observation of tool use in the Australian magpie.

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