



ScienceWatch – City Birds are Smarter Birds

“We were interested whether behavioral flexibility can increase the chance of a given species to successfully colonize cities.” – A. Maklakov

What do you need to survive in an urban landscape? A big brain if you are a bird, according to evolutionary biologist Alexei Maklakov. Maklakov and his team from Uppsala University, Sweden, looked at the ratio of brain size to body size for various passerine species—small perching birds—found in 12 cities in France and Switzerland. This ratio, known as Cuvier’s fraction, has been widely used as an indication of intelligence in birds and mammals. The 22 avian families represented by the 82 species the team studied ranged from the big-brained *Corvidae*, (crows, rooks and magpies) *Sturnidae* (starlings) and *Paridae* (tits, chickadees and titmice) to smaller-brained *Oriolidae* (orioles) and *Hirundinidae* (swallows and martins).

The researchers found that species breeding in cities have relatively larger brains in relation to body size than those that avoid urban environments and that the differences were statistically significant. In addition, families with larger brains, on average, contributed more species to city populations than the smaller-brained families.

According to lead author Maklakov, “Species with relatively larger brains tend to have broader diets, live in diverse habitats and have a higher propensity for behavioral adaptations in foraging”. It should come as no surprise that birds like the carrion crow (*Corvus corone*), jackdaw (*Corvus monedula*) and European magpie (*Pica pica*), all well-known for their intelligence, can readily adapt to—and take advantage of—the new habitats and food sources provided by cityscapes and humans.

Other city dwellers include the Eurasian wren (*Troglodytes troglodytes*), Eurasian nuthatch (*Sitta europaea*) and the blue tit (*Cyanistes cearuleus*). The latter is famous for having figured out in the 1960’s how to remove the foil cap and drink the cream from milk bottles delivered in England. This behavior was culturally transmitted to subsequent generations until recently when home milk delivery virtually stopped.

The scientists expressed concern that small-brained birds like flycatchers are being squeezed out of viable habitat as farmland is urbanized. One small-brained group, swallows, seems to be an exception because, “... they are lucky enough to find niches in urban habitats that are by coincidence a pretty good approximation of their original habitats”, said Maklakov.

Although not studied because they are not passernes, pigeons (*Columba livia*) are small-brained birds that certainly flourish in cities. “Pigeons probably represent a great example of a bird for which we inadvertently created a fantastic replica of their original habitat (cliffs) with plenty of nesting places, near lack of predators, and an ample food supply”, was the explanation offered by Maklakov.

For similar reasons New York City has seen an upsurge in the once-rare peregrine falcon (*Falco peregrinus*), which, hopefully, makes the city a bit less hospitable for pigeons.

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