

Birds take cues from their competitors

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The idea that animals other than humans can learn from one another and pass on local traditions has long been a matter of debate. Now, a new study reveals that some birds learn not only from each other, but also from their competitors. The findings appear online on July 5th in *Current Biology*, a Cell Press publication.

Through a novel field experiment, the researchers showed that female members of two migrant flycatcher species can acquire a novel preference for nesting sites on the basis of the apparent attraction of competing resident tits for nest boxes bearing an otherwise meaningless symbol.

“Animals are not merely programmed to behave in a fixed manner, but use information and make decisions,” said Janne-Tuomas Seppänen of the University of Jyväskylä, Finland. “Most importantly, individual animals live in communities, and they may learn from each other, even from other species.”

Seppänen and Jukka Forsman of Uppsala University, Sweden and University of Oulu, Finland, stumbled onto the idea for the experiment when looking for some weathered nest boxes in a dimly lit forest one morning. They realized it would be more convenient if the boxes were marked in some conspicuous way, and began to consider what the consequences of such identifying symbols might be for the birds’ behavior.

Earlier research had shown that some flycatcher species pay attention to

others of their own species and to tits when choosing breeding patches.

“We knew that pied flycatchers prefer to settle near tits, and to patches with tits rather than without,” Forsman said. “These cavity-nesting birds share the same predation risk, along with much of their other breeding ecology, and they have been shown to compete with each other. If patch and microhabitat ‘copying’ occurs, why not more generalized social learning of nest-site features”

At two different study sites, the researchers created artificial, neutral nest-site preferences of tits by attaching a geometric symbol on their nest boxes before the flycatchers arrived, making it appear that all tits within each forest patch favored the symbol.

They found strikingly similar responses of the collared and pied flycatchers in both experiments, which were about 950 kilometers apart. Over the course of the season, the flycatchers became increasingly more likely to choose a nest box with the symbol matching that on the tits’ nest boxes. On average, more than 75% of the late-arriving birds chose a nest box with the “favored” symbol.

The findings may have evolutionary and ecological implications, according to the researchers.

“Conventional theory of species coexistence predicts that overlap in resource use between species results in costs and divergence of niches,” Seppänen said. “However, our results suggest that if information possessed by another species—even by a strong competitor—is valuable enough, interspecific social information use and social learning in particular may lead to increased co-occurrence, proximity, and niche overlap between species.”

Source: Cell Press

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