

Birds' harmonious duets can be 'aggressive audio warfare,' study finds

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Researchers reporting in the September 4th *Current Biology*, a Cell Press publication, have new insight into the motivating factors that drive breeding pairs of some tropical bird species to sing duets. Those duets can be so closely matched that human listeners often mistake them for solos.

They now report evidence that male and female rufous-and-white wren partners sing as a way of keeping track of one another when they are apart. But the duets, as pleasant as they may sound, also have a more sinister purpose. During confrontations with rivals, the wrens essentially duel one another with their duets.

The discovery was made possible by sophisticated sound recording technology developed by the University of Windsor and Cornell University team. That system, including eight microphones recording to a single laptop computer, allowed them to triangulate the duetting birds' positions in the dense tropical forests of Costa Rica where they live.

"Your first impression after you hear the duet of a pair of tropical birds is one of great harmony and cooperation," said Daniel Mennill of the University of Windsor. "Their duets require coordination and synchronization, and my multi-microphone recordings confirm that birds do coordinate their activities by performing duets. But there is a darker side to duetting; tropical birds also perform duets in very aggressive contexts, and respond with special aggression to rival individuals of the same sex. Their voices are beautiful harmonies, but they're also

aggressive audio warfare."

The researchers found that male and female wrens approach each other following duets and use them to play a version of the children's game Marco Polo. "One bird sings, listens for the song of its partner, and moves towards their partner after hearing a response," Mennill said.

In another set of experiments, Mennill used two loudspeakers to simulate the voices of a pair of duetting wrens and found that birds fight duets with more duets. As soon as the birds heard the duets of a rival pair, their singing rate "shot through the roof," he said, evidence that the melodies play an important role in aggressive territory defense.

Mennill said he expects that, like the rufous-and-white wrens, the songs of many other duetting species also serve different purposes depending on the context in which they are performed.

Source: Cell Press

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