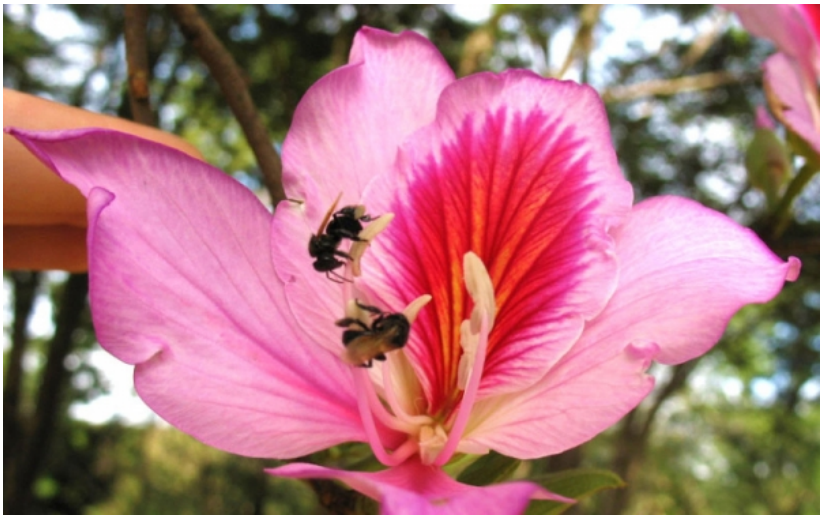
'Whispers' Among Bees Turn into 'Shouts'

By **Jenna Iacurci** Jul 07, 2014 05:32 PM EDT



When bees are pollinating and stumble upon a particular lucrative source of nectar or pollen, they "whisper" the good news to their fellow bees to avoid being overheard by "eavesdroppers." But a new study finds that some bee species in Brazil do the opposite, and in fact "shout" as a means of communication. (Photo : Elinor Lichtenberg)

When bees are pollinating and stumble upon a particular lucrative source of nectar or pollen, they "whisper" the good news to their fellow bees to avoid being overheard by "eavesdroppers." But a new study finds that some bee species in Brazil do the opposite, and in fact "shout" as a means of communication.

Researchers from the University of California, San Diego have found that rather than quietly whispering to one another about a sweet treat, these Brazilian bees shout to warn other competitors listening that they are prepared to fiercely defend their food source.

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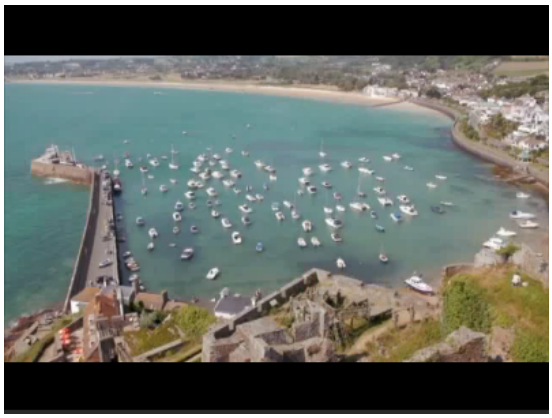
Though it seems like a risky and bold move, it's actually quite effective.

"It's a signal with honest aspects and the possibility of lies," James Nieh, a professor of biology at UC San Diego, explained in a press release. "It tells nestmates where to find good food and hints at a larger occupying force."

Elinor Lichtenberg, a PhD student who led the study, says her discovery of this counterintuitive method of communication by bees suggests that eavesdroppers can alter the evolution of animal signals in ways that were previously not thought possible.

"Our study provides a new way of looking at how eavesdroppers affect the evolution of animal communication signals," she added. "Until now, it was thought that eavesdroppers select against conspicuous signals, for example by more easily finding and eating prey that sings loudly. But our results show that eavesdroppers can



help select for the same conspicuous signals that are easiest for intended recipients to detect and understand."

The study focused on stingless bees that compete with one another for similar food sources. *Trigona spinipes* are foragers that alert nestmates using chemical pheromones and *Trigona hyalinata* are the eavesdroppers that spy on them. It turns out that eavesdroppers don't want to go through the trouble of battling *T. spinipes* bees, which are very aggressive towards intruders.

"Our study provides a new way of looking at how eavesdroppers affect the evolution of animal communication signals," Lichtenberg said.

The findings were published in the journal *Current Biology*.

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