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Some bees ‘shout’ to warn would-be competitors

This is their attempt to warn would-be competitors that the bees’ prime source of food will be fiercely defended if they show up to the site.



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According to a **report** from UC San Diego, researchers studying a select number of species of bees in Brazil found that, instead of using “whispers” in their signals to counter eavesdroppers – as is the case with many animals seeking to conceal the location or quality of resources from competitors – they use “shouts” in their food-recruitment signals.

Rather than a passive attempt to protect vital information, this act seeks to warn would-be competitors that the bees’ prime source of food will be fiercely defended if they show up to the site. Although bold and risky, this communication strategy is remarkably successful in warding off competitors.

The study findings appear in a paper published in the July 7 issue of the journal **Current Biology**.

“It’s a signal with honest aspects and the possibility of lies,” said James Nieh, a professor of biology at UC San Diego who oversaw the research study conducted in Brazil by Elinor Lichtenberg, a former PhD student in his laboratory who is now a postdoctoral researcher at Washington State University. “It tells nestmates where to find good food and hints at a larger occupying force.”

According to Lichtenberg, her discovery of this counterintuitive method of communication by bees suggests that eavesdroppers can modify the evolution of animal signals in ways that were previously thought impossible.

Lichtenberg’s study concentrated on stingless bees – including two from the genus *Trigona* that recruit nestmates to food sources with chemically distinct pheromones – that contend with one another for similar food sources. *Trigona hyalinata* spies that identify food sources marked by *Trigona spinipes* foragers will often displace *T. spinipes* from desirable sites in the wild if they can recruit sufficient nestmates. However, Lichtenberg found in a controlled field study that the eavesdropping species will avoid desirable sources of food that have been visited frequently by *T. spinipes* to avoid being attacked. On the other hand, *T. hyalinata* foragers are attracted to food sources with fewer *T. spinipes* foragers.

In addition to providing information concerning the evolution of different strategies of animal communication, the study also suggests how these strategies can affect the ecology of plant communities.

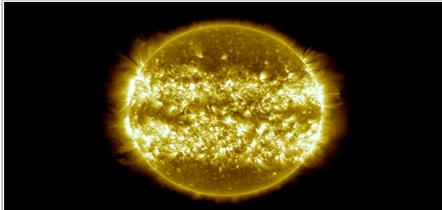
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