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## PHONY FIGHTERS DISCOVERED AMONG FIG WASPS

### A newly discovered species has a fraction of dishonest guys with big mouthparts

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#### HONEST GUY

A new, as-yet-unnamed species of tiny fig wasp has two forms of males. The majority look like this one, but about 18 percent have somewhat larger jaws for their body size. Males use jaw size to take a rival's measure when deciding to fight, so researchers say the outsized mouthparts could be a new example of a dishonest signal of fighting power.

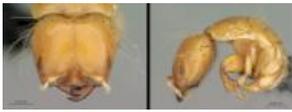
James Cook, U. of Reading

A fig wasp walks into a bar — but if he belongs to one new species, there's about a one in five chance that he's bluffing about beating the frass out of somebody.

Male fig wasps may measure only a few millimeters in length, but they rank among the most violent fighters on Earth. The tiny wasps have fascinated evolutionary biologists because males show an unusually high willingness to battle to the death.

In a newly discovered species, the jagged, cutting jaws grow unusually long in about 18 percent of males, report Jamie Moore of University of Oxford in England and his colleagues in an upcoming *Animal Behaviour*. After studying body measurements and behavior, Moore and his colleagues propose that those big-mouth males are bluffers when it comes to fighting.

Before getting into battle over the ladies, males in this yet-to-be-named species face off as if sizing up each other, the researchers report. A male with some extra mouth for his body size probably looks more formidable than he is.



Enlarge

### IT'S RELATIVE

A male fig wasp of the African species *Philotrypesis dicranostyla* belongs to the same genus as the newly discovered species with the bluffing male forms. A close-up of a male fig wasp's face (*Philotrypesis dicranostyla*) shows the crossed jaws that do so much damage during fig wasps' notoriously violent fights.

Simon van Noort (Iziko Museums of Cape Town)/figweb.org

These big-mouth males indeed get into fewer actual fights than typical males, suggesting others back down from confrontations, Moore says. But when big-mouths do fight, they're more likely than usual to lose. Outsized mouthparts on these fig wasps could thus be a dishonest signal of fighting ability, Moore and his colleagues argue.

Depending on the animal, the power of a male's roar, or the size of his antlers can give a rival some signals about whether to start swinging or to slink away. What keeps some of these signals as reliable indicators has inspired ample debate, as cheating offers benefits if males can get away with it.

Evolutionary biologists have predicted that dishonesty should be common in fights, but proving this for animals has been difficult. "This is only the fifth example," Moore says.

"Yes, there are a bunch of papers on theories, but few neat empirical studies like this," says Rodrigo Augusto Santinelo Pereira of the University of São Paulo in Ribeirão Preto, Brazil.

Ideas about dishonesty in signaling apply far beyond bar fighting. Harmless butterflies that mimic a poisonous species, insects that mimic inedible twigs and many other mimics rely on some aspect of bluffing. Documented cheats in aggression "are rare indeed, but reports of dishonest signals are very frequent, especially in interspecific communication," says Szabolcs Számadó of Eötvös Loránd University in Budapest.

This new species with the natural bluffers lives in the large, tropical *Ficus rubiginosa* often planted as landscaping trees in Australia and other tropical climates. Moore did much of the observations along the streets and parks of Brisbane, where he had to explain to local police that he was lurking for scientific purposes only.

Moore has yet to name the new species, which belongs in the *Philotrypesis* genus of fig wasps. These don't actually pollinate figs but live inside the fruits

as freeloaders. The tiny males have no wings and, as far as researchers now know, spend their entire lives, including their battles, inside a single fig. According to Moore's observations, a typical fig holds three males and four females of this species, and a male's adult life lasts only about 48 hours. Thus the chances to mate are limited and apparently worth fighting for.