

Spiders target sexy signals from 'vibrating' insects

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Insects using vibration to attract a mate are at risk of being eaten alive by killer spiders, Cardiff University scientists have discovered.

Studying spider behaviour experts from Cardiff University's School of Biosciences found that the vibrations used by leafhoppers and many other insects to attract a mate can be intercepted and used by predatory spiders to identify their [prey](#).

[Predators](#) are already known to exploit the sight, sound and smell communications of their prey – but this is the first time that scientists believe they have discovered predators such as spiders can pick up these secretive vibrational signals and use them to find prey.

"Vibrational signalling is a widespread form of sexual communication between animals" according to Dr Meta Virant-Doberlet and Professor William Symondson, who undertook the research.

"By observing this behaviour we have been able to see, for the first time, that spiders are able to exploit sexual vibrational communication signals as a mean of tracking down their prey," they added.

The scientists made the discovery by observing the behaviour of one spider species *Enoplognatha ovate* - a relative of the highly poisonous Black Widow spider.

When recordings of male leafhopper vibrational signals were played,

spiders began homing in on the signal and searching for food.

The [spiders](#) were also seen to have a preference for male leafhoppers over females, probably due to the 'louder', more complex signals used by males during courtship.

Although vibrational signalling is widespread amongst animals, this is the first time that anyone has shown that predators can use these signals to find their prey. The scientists believe this opens up a whole new field of scientific investigation.

Professor Symondson and Dr Virant-Doberlet add: "Predators have evolved to intercept the signals of their prey but until now this was thought to be limited to visual, acoustic and chemical ways of communicating.

"This new discovery represents a previously overlooked strategy for prey location and a major unrecognised driver in the evolution of both predators and prey.

"This is a very significant scientific advance, opening up a whole new area for scientific investigation. Vibrational signalling is widespread amongst invertebrates and it is highly likely that many predators have evolved to exploit it."

The findings were published in the journal *Molecular Ecology* and was supported by a Marie Curie Fellowship, funded by the European Union.

Provided by Cardiff University

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