

How do spiders hunt 'in unison'?

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Social spider colony (*Anelosimus eximius*) in French Guyana. Credit: Raphaël Jeanson/CNRS

Within the 50,000 known species of spiders about 20 have developed a permanent social life characterized by a remarkable cooperation. Among these, one or two species hunt "in packs," such as the *Anelosimus eximius* spiders of French Guyana, whose colonies can house several thousand individuals of all ages, coexisting peacefully in gigantic webs that often reach several cubic meters. When prey falls into their web, the

spiders instantly adopt astonishing behavior: Synchronizing their attack by coordinating phases of moving and stopping, they strike as one. In this way, they are able to capture prey up to several hundred times their size.

A team from the Centre de Recherches sur la Cognition Animale (CNRS/Université Toulouse III—Paul Sabatier) led by a CNRS researcher has just revealed the mechanisms at work in this unified hunt. By combining [fieldwork](#) and modeling, the team's results identified the actions involved in the synchronization of these movements. Synchronization involves a modulation of each [spider](#)'s behavior, according to the relative intensity of the [prey](#)'s signals compared to those of the other spiders: Some spiders remained motionless on the web just so long as the vibrations emitted by their fellow spiders masked those of the prey. This coordination increases their ability to detect prey and optimizes their hunting performance.

These results are published in the March 7, 2022 edition of the *Proceedings of the National Academy of Sciences (PNAS)*.

More information: A variable refractory period increases collective performance in noisy environments, *Proceedings of the National Academy of Sciences* (2022). [DOI: 10.1073/pnas.2115103119](https://doi.org/10.1073/pnas.2115103119).

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