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## Hostile Female Spiders Eat Males Before Mating

Posted by [Carrie Arnold](#) in [Weird & Wild](#) on April 26, 2014

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Call it the ultimate *femme fatale*: Scientists have found that aggressive female burrowing wolf spiders (*Lycosa hispanica*) eat males before having sex with them.

For many spiders, mating is a risky proposal. Not only are they exposed to predators while in the act, but copulation can end when the female eats the male. The fathers, though, are usually willing to make the sacrifice to pass on their genes to the next generation. (Also see "[Male Spiders Self-Sacrifice, Lose Genitals.](#)")



A wolf spider at the top of its burrow in Australia. Photograph by Brooke Whatnall, National Geographic

But there's more bad news for the males: New observations reveal that some females don't even wait for mating to begin before they start snacking on their mates. Called pre-copulatory sexual cannibalism, this behavior occurs in about 10 to 15 percent of spider species, including the burrowing wolf spider.

Scientists already knew that an animal's individual personality can influence who it chooses as a mate, but the new research shows that violent female spiders tend to attack males more often than easygoing females, according to [Jordi Moya-Laraño](#), an ecologist with the Spanish National Research Council in Madrid and senior author on a new study published in March in the journal *Ethology*.

On the surface, it doesn't seem like a very smart mating strategy. After all, the females are eating the males before they have a chance to reproduce. In certain circumstances, however, it's not as pointless as it sounds.

"If there are lots of males around and a female eats a few, no big whoop—there are plenty of others to mate with," said [Jonathan Pruitt](#), a spider expert at the University of Pittsburgh in Pennsylvania. (Related: "[Surprise! Male Spiders Eat Females, Too.](#)")

"But if males are very rare, the female may have just eaten her only chance to pass on her DNA and will die a virgin, spinster spider," said Pruitt, who wasn't involved in the new study.

## Basic Instincts

Even with these caveats, pre-copulatory sexual cannibalism is a risky choice, since a female is betting on the availability of a good male down the line.

Moya-Laraño and Rubén Rabaneda-Bueno, of the Experimental Station of Arid Zones (EEZA) in Almería, [Spain](#), wanted to know what factors made females more likely to engage in this behavior. They focused on the burrowing wolf spider, with which they had conducted other experiments.

Studies in the wild had revealed that some females are more aggressive than others, and the ecologists suspected that the nastier females would also act the same way toward males. To test this, they captured a group of virgin female wolf spiders from near the research station in Almería and measured how much prey the arachnids ate from a live buffet of darkling beetles and woodlice.

More aggressive females—determined by how much they attacked prey—ate more [insects](#) and also reached their adult sizes more quickly than their more docile counterparts did. They also reached sexual maturity faster. (See "[Male Spiders Give 'Back Rubs' to Seduce Their Mates.](#)")

## Weighing the Costs

Next, the researchers presented each female with a male spider and watched what happened.

Some of the docile females attacked and ate the male before mating, whereas other females mated with the male. When the researchers analyzed the data, they found that the docile females were selective when they cannibalized the males, eating the ones that would make less than ideal mates. The aggressive females, however, attacked all the males. (See [pictures of spiders up close.](#))

These results, Moya-Laraño said, provide support for their hypothesis of aggressive females being equally so with

males.

“Early in the season, there are lots of males. Since aggressive females reach sexual maturity sooner, we think that they can afford to eat more males since they will have the opportunity to mate later on,” he said.

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