

South American spider females pick their mates according to how well the nuptial gift is wrapped

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This photo shows a *Paratrechalea ornata* male offering a nuptial gift to a female.
Credit: Mariana Trillo

It's not only what's inside the nuptial gift that a potential suitor brings to a female *Paratrechalea ornata* spider that counts. It's the whole package, white silk wrappings and all, that can give one male spider the edge over another. So say Mariana Trillo, Valentina Melo-González and María José Albo of the Instituto de Investigaciones Biológicas Clemente Estable in Uruguay, who carried out the first study to look at the role of silk wrappings during the courtship and mating of this South American semi-aquatic spider. The findings were published in the journal *Naturwissenschaften – The Science of Nature*.

The *Paratrechalea ornata* [spider](#) is one of many animals and especially invertebrates that use nuptial gift-giving during courtship and mating. During mate searching, [males](#) of this species walk with vibrating forelegs and feeler-like pedipalps, while carrying prey wrapped in white [silk](#) in their mouth parts.

To find out more about this ceremony, Trillo's team collected spiders from the Santa Lucia River in Uruguay and ran a set of experiments in their laboratory in Montevideo. In one experiment, the mouth parts of some males were painted white, and others not. Females exposed to males with white mouth parts were more active, showed more physical contact and spent more time in front of them. They also accepted the matings earlier, and with more frequency than those exposed to males without paint.

The researchers therefore believe that the white coloring of the silk itself holds the big appeal for female spiders. This highlights the importance of visual cues during courtship and mate choice in *Paratrechalea ornata*. Also, Trillo's team does not believe that white is just a random choice for this spider. Members of this species are most active during sunset and at night, when bright or white objects stand out over longer distances compared to black ones. The white wrapping therefore could make it easier for a female to spot a male over a distance and to see if he is

carrying a gift or not.

Trillo's team also found that gift wrapping is indeed a way in which females can judge a male's [body condition](#), and therefore its suitability to mate with. Males in poor condition produced poorly constructed and wrapped gifts, while males in better shape added more silk to the package, which made it also appear whiter.

"Females evaluate the physical condition of a male based on his silk wrapping performance, and how the gifts he brings look," Trillo summarizes. "Also, silk wrapping is a condition dependent trait and most probably allows a *Paratrechalea ornata* female to acquire information about her potential mate, including body condition and quality."

More information: Trillo, M.C. et al. (2014). Silk wrapping of nuptial gifts as visual signal for female attraction in a crepuscular spider, *Naturwissenschaften* – The Science of Nature. [DOI: 10.1007/s00114-013-1139-x](#)

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