Are Scientists Who Study Insects Afraid of Spiders?

Research About Fear of Spiders

compiled by Alice Shirrell Kaswell, Improbable Research staff

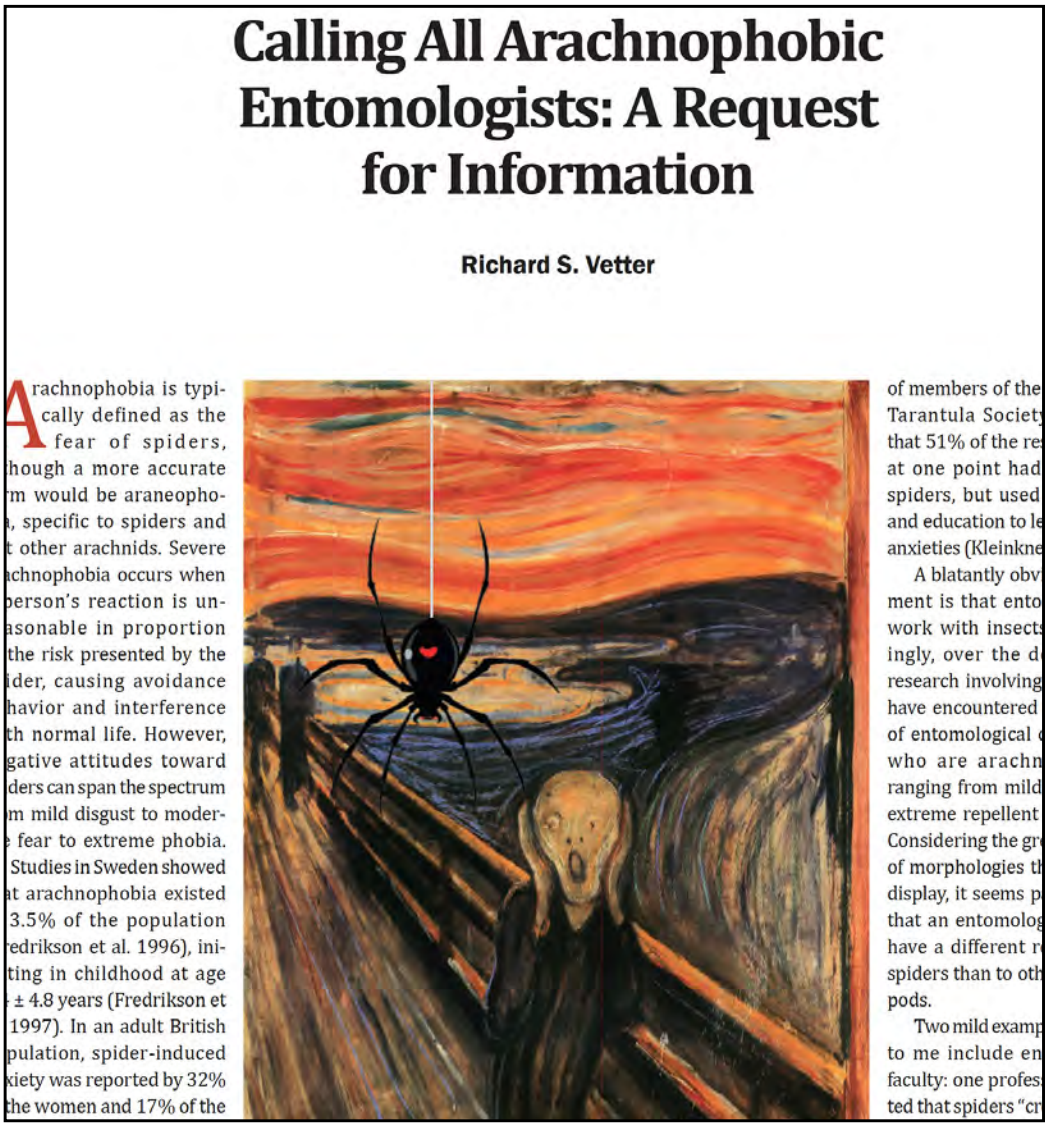
While some scientists study spiders, other scientists study the fear of spiders. Other scientists study still other scientists' fear of spiders.

Do Many Scientists Who Study Bugs Have a Fear of Spiders?

Richard S. Vetter is a leader in studying scientists' fear of spiders. He published studies in 2012 and 2013.

"Calling All Arachnophobic Entomologists: A Request for Information," Richard S. Vetter, *American Entomologist*, vol. 58, no. 4, Winter 2012, pp. 199-201. Vetter, at the University of California, Riverside, writes:

> [Over] the decades of research involving spiders, I have encountered a number of entomological colleagues who are arachnophobic, ranging from mild dislike to extreme repellent reactions. Considering the great variety of morphologies that insects display, it seems paradoxical that an entomologist would have a different reaction to spiders than to other arthropods....
>
> [F]ear of spiders is not an isolated occurrence in our profession... [I present here] a questionnaire regarding arachnophobia. I am asking for your participation if
>
> 1) you consider yourself to be an entomologist,
>
> 2) you work with whole-bodied insects that are alive at some point..., and
>
> 3) [you] have negative reactions (from mild disgust to severe arachnophobia) to spiders....
>
> [If] you are concerned that disclosure would lead to your unmasking... please decline to state [specific information that might identify you].



Calling All Arachnophobic Entomologists: A Request for Information

Richard S. Vetter

Arachnophobia is typically defined as the fear of spiders, though a more accurate term would be araneophobia, specific to spiders and not other arachnids. Severe arachnophobia occurs when a person's reaction is unreasonable in proportion to the risk presented by the spider, causing avoidance behavior and interference with normal life. However, negative attitudes toward spiders can span the spectrum from mild disgust to moderate fear to extreme phobia. Studies in Sweden showed that arachnophobia existed in 3.5% of the population (Fredrikson et al. 1996), initiating in childhood at age 7 ± 4.8 years (Fredrikson et al. 1997). In an adult British population, spider-induced anxiety was reported by 32% of the women and 17% of the

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Are Scientists Who Study Insects Afraid of Spiders? [continued]

Yes, Many Scientists Who Study Bugs Do Have a Fear of Spiders

"Arachnophobic Entomologists: When Two More Legs Makes a Big Difference," Richard S. Vetter, *American Entomologist*, vol. 59, no. 3, 2013, pp. 168-175. Vetter reports:

> Forty-one entomologists qualified for inclusion in the survey. Because most of the respondents had low scores, indicating a mild reaction to spiders, it is most accurate to refer to them as arachno-adverse rather than arachnophobic, though a few scored in the arachnophobic range.

Detail from the study "Arachnophobic Entomologists: When Two More Legs Makes a Big Difference."

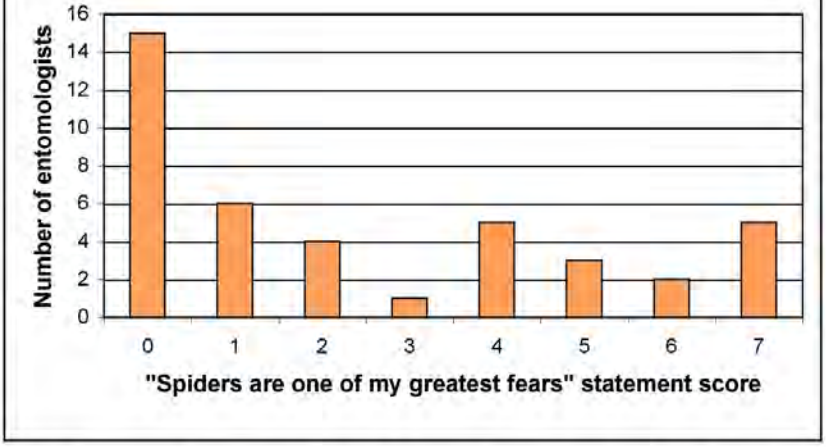

Fig. 2. Respondents' reactions to the statement "Spiders are one of my worst fears." Totally agree = 7, totally disagree = 0.

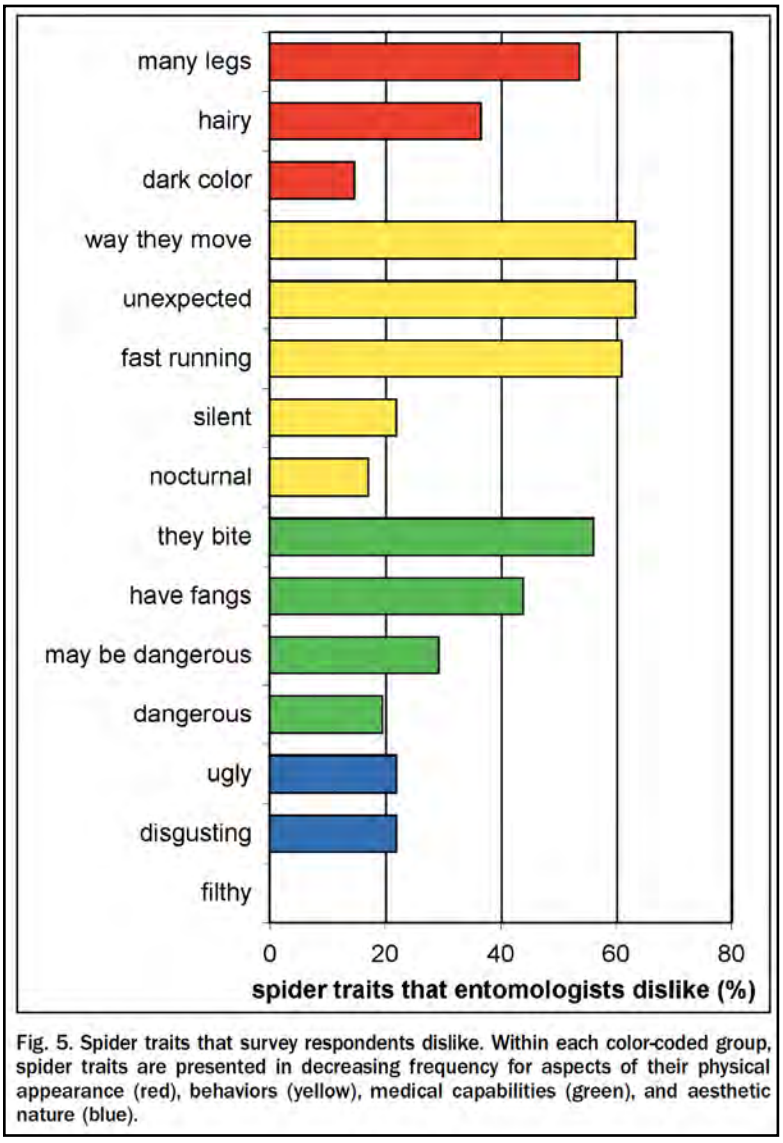

Fig. 5. Spider traits that survey respondents dislike. Within each color-coded group, spider traits are presented in decreasing frequency for aspects of their physical appearance (red), behaviors (yellow), medical capabilities (green), and aesthetic nature (blue).

Further detail from the study "Arachnophobic Entomologists: When Two More Legs Makes a Big Difference."

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Are Scientists Who Study Insects Afraid of Spiders? [continued]

Youths Do Not Necessarily Automatically Fear the Sight of Spiders

Youths are not, all of them, necessarily fearful of spiders, suggests this report:

"Spider is Not Special Comparing With Other Animals in Human Early Visual Attention: Evidence From Event-Related Potentials," Hongshen He, Kenta Kubo, and Nobuyuki Kawai, *JCSS Japanese Cognitive Science Society*, 2014, pp. 187-190. The authors, at Nagoya University, Japan, report:

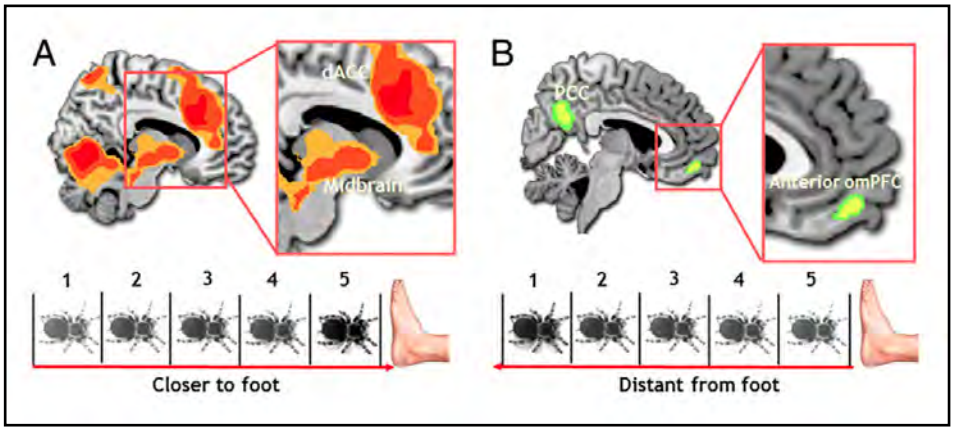
> Participants engaged in a passive viewing experiment, which contained two conditions (spider and snake). In spider condition, participants watched a rapid serial presentation of 480 spider, 480 wasp, 480 bumblebee and 480 scrub beetle pictures. In the snake condition, the manipulations are the same to spider condition, except the rapid serial presentation of 480 snake pictures and 480 bird pictures. Each picture was presented 60 times in random order and the duration was 300 ms. Electroencephalogram (EEG) recordings were obtained during both conditions....
>
> In summary, the presented study demonstrated that the early visual attentional capture of animate objects is stronger for snake, but spider which thought to be a great threat-stimulus cue, is not special to other animals including wasp, bumblebee and beetle.

A Tarantula at One's Feet, Whilst One Is in a Big Tube

Some people grow fearful when they are imprisoned in a large metal tube whilst someone places a live tarantula near their feet, suggests this report:

"Neural Activity Associated With Monitoring the Oscillating Threat Value of a Tarantula," Dean Mobbs, Rongjun Yu, James B. Rowe, Hannah Eich, Oriel Feldman Hall, and Tim Dalgleish, *Proceedings of the National Academy of Sciences*, vol. 107, no. 47, 2010, pp. 20582-20586. *(Thanks to Oran Parker for bringing this to our attention.)* The authors, at the University of Cambridge, UK, explain:

> With the use of a modified behavioral approach task within functional MRI, we show that, as a tarantula was placed closer to a subject's foot, increased experiences of fear coincided with augmented activity in a cascade of fear-related brain networks including the periaqueductal gray, amygdala, and bed nucleus of the stria terminalis. Activity in the amygdala was also associated with underprediction of the tarantula's threat value and, in addition to the bed nucleus of the stria terminalis, with monitoring the tarantula's threat value as indexed by its direction of movement. Conversely, the orbitofrontal cortex was engaged as the tarantula grew more distant, suggesting that this region emits safety signals or expels fear.



Detail from the study "Neural Activity Associated With Monitoring the Oscillating Threat Value of a Tarantula."