

# **The advantage of starving**

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Both hunger and body size difference increase the likelihood that an encounter between two wolf spiders turns into a cannibalistic event. We analysed the outcome of encounters between a satiated and a hungry spider, a situation that must frequently occur in nature due to differential foraging success of individuals. In one experiment we found that when staging a hungry and a satiated spider of the same size, the hungry spider was most often the cannibal (83% of cannibalistic encounters). We also studied the interaction between hunger and body size difference using the time until the cannibalistic event as an indicator of cannibalistic propensity. Cannibalistic propensity depended strongly on the victim:cannibal size ratio for hungry but less for satiated cannibals. In a second experiment including starved spiders being smaller than their satiated opponents, we found that hunger state interacted significantly with the mass ratio of opponents in determining the frequency of cannibalism. The results conform with game theoretical predictions for animal resource contests in which resource value (motivation ~ hunger) is as important as resource-holding power (~ body size). Our results have implications for the consequences of cannibalism (and intraguild predation) at population and community levels.