

Nepotism has its benefits when it comes to survival

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Stegodyphus tentoriicola

While nepotism may have negative connotations in politics and the workplace, being surrounded by your relatives does lead to better group dynamics and more cooperation in some animals. That certainly seems to be the case for spiders, according to a new study published in the open access journal *BMC Evolutionary Biology*.

In an extensive study, the researchers found that *Stegodyphus tentoriicola* spiders are far more efficient at foraging for food and cooperate better when they're related to each other. Like with humans and other animals, relatedness may favour the evolution of less selfish behavior, more collaboration and better group dynamics.

Jutta Schneider and her students Jasmin Ruch and Lisa Heinrich from University of Hamburg, Germany, and Trine Bilde from Aarhus University, Denmark, organized spiders into different groups to collect food. While some groups were entirely made up of siblings, others included only non-siblings. Spiders working with their kin were more motivated to share [digestive enzymes](#) with the other spiders, allowing them to consume their prey more quickly. The spiders that were related also worked more communally when foraging for food, which benefited the entire group.

This study shows that working with relatives also seems to be important for maintaining harmony as the size of a group increases. In larger groups, there is an increased tendency to reduce collaboration and exploit other group members so groups become more fractured, competitive and unproductive. This phenomenon is known as 'the tragedy of the commons'. However, social groupings of spiders composed of siblings were able to offset those self-destructive patterns and maintain a higher level of productivity.



Stegodyphus tentoriicola

"*Stegodyphus* spiders represent one of the few study systems of the evolution of cooperation with convincing empirical evidence for genuine kin discrimination as opposed to nest-mate recognition," says one of the authors, Jasmin Ruch.

As well as providing valuable information about the importance of family unity in survival, these findings offer hints about the future success of various social groups. Given that cooperation among relatives is common throughout the animal kingdom, groups consisting of relatives will be more likely to remain together and develop social structures to maintain more lasting groups. These findings strongly echo behavior in humans throughout history.

More information: Relatedness facilitates cooperation in the subsocial [spider](#), *Stegodyphus tentoriicola*, Jasmin Ruch, Lisa Heinrich, Trine Bilde and Jutta M Schneider, [BMC Evolutionary Biology](#) (in press), www.biomedcentral.com/bmcevolbiol/

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