

Swarms of locusts use social networking to communicate

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Social studies of Facebook and Twitter have been adapted to gain a greater understanding of the swarming behaviour of locusts. The enormous success of social networking sites has vividly illustrated the importance of networking for humans; however for some animals, keeping informed about others of their kind is even more important.

In a study published 15 July 2011, in the Institute of Physics and German Physical Society's [New Journal of Physics](#), researchers have shown that swarming, a phenomenon that can be crucial to an animal's survival, is created by the same kind of social networks that humans adopt.

Since the 1980s, scientists have been programming computer models to realistically reproduce flocks of birds, schools of fish, herds of quadrupeds and swarms of insects. However, the question of how these groups coordinate to move together has remained a mystery.

It remains more of a mystery when each organism can only see a small area around them, when they are affected by unpredictable changes in the environment, and when there is no clear leader of the [collective behaviour](#).

Researchers from the Max Planck Institute for Physics of Complex Systems, as well as a US-based scientist supported by the National Science Foundation, addressed this problem from a different perspective: network science.

They used ideas from previous studies on opinion formation in social networks, such as [Facebook](#) and [Twitter](#), and applied them to a previous study of 120 locust nymphs marching in a ring-shaped arena in the lab.

Studies have shown that the decisions you make, or the opinion you have, are strongly influenced by the decisions and opinions of your friends, or more

generally, your contacts in your social network.

Locusts rely heavily on swarming as they are in fact cannibalistic. As they march across barren deserts, locusts carefully keep track of each other so they can remain within striking distance to consume one another - a cruel, but very efficient, survival strategy.

The study used a [computer model](#) to explicitly simulate the social network among locusts and found that the most important component needed to reproduce the movements seen in the lab is the social interactions that occur when locusts, walking in one direction, convince others to walk in the same direction.

The researchers state that it may not be obvious that animals are creating the equivalent of our human social networks however this is the precise mechanism behind swarming transition.

One of the study's authors, Gerd Zschaler, said, "We concluded that the mechanism through which [locusts](#) agree on a direction to move together (sometimes with devastating consequences, such as locust plagues) is the same we sometimes use to decide where to live or where to go out: we let ourselves be convinced by those in our social network, often by those going in the opposite direction."

"We don't necessarily pay more attention to those doing the same as us, but many times [we pay more attention] to those doing something different."

More information: Cristián Huepe et al 2011 *New J. Phys.* 13 073022 [doi: 10.1088/1367-2630/13/7/073022](#)

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