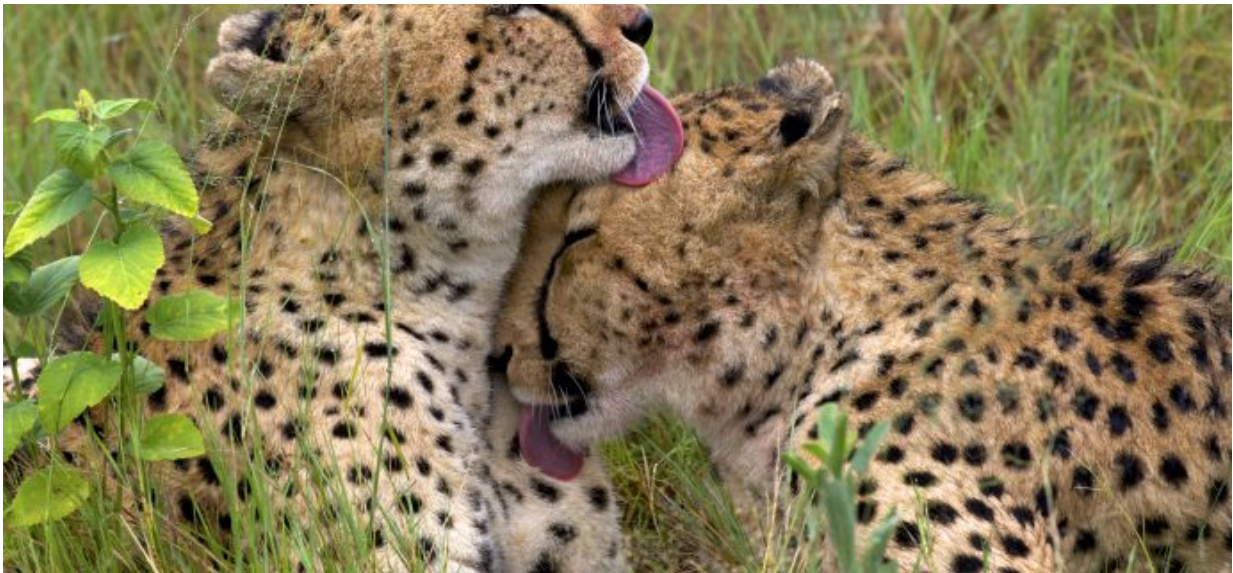


How cheetahs find each other after separation

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Credit: Wikimedia Commons

In the first study to track the detailed movements of cheetahs in a coalition, researchers from the Royal Veterinary College, UK, and Cheetah Conservation Botswana explored how the cats meet up again after becoming separated.

Tatjana Hubel and her colleagues did not set out to study cheetah reunions. The researchers were following the movements of three cheetahs, most likely [brothers](#), in a bonded coalition. The cats were

captured and fitted with GPS collars. As they looked at the GPS data, the researchers realized that one of the cheetahs had been separated from his brothers for a period of 31 days.

"Looking at the large area they used, we started to wonder how they managed to reunite," says Hubel. "It is one thing to find a fixed location, but another for two moving groups to find one another."

The high resolution GPS data gave the researchers very detailed information about the position of each of the three cheetahs at any point in time. One by one, Hubel and her colleagues explored different possibilities for how the brothers found each other after a month of separation.

First, the researchers calculated the chance of the cheetahs finding each other by coincidence within their large home range (estimated to be 819 km²). Within such a vast territory, the likelihood of a purely coincidental reunion was extremely small.

Next, Hubel and her colleagues ruled out the possibility that the cheetahs called to one another, like lions or wolves do when separated. The soft chirps of cheetahs do not carry over long distances. Plus, cheetahs are vulnerable to other predators, so walking around and calling for four weeks would draw unwanted attention to them.

Then the researchers asked whether the cheetahs met up in a location that they frequented often.

"The cheetahs had preferred areas within their home range, so a reasonable assumption would have been that they might reunite in one of those areas," says Hubel. "But in our case, this was not true. They met at a spot that was far away from frequently used areas, and neither group spent much time there before the reunion."

So how did the cheetah brothers find each other?

The reunion occurred after both groups had spent only hours in the region, and within hours of the lone cheetah encountering the route traveled by his two brothers. The separated cheetah crossed the trail of his brothers and then appeared to execute a looping search pattern until they were reunited.

Hubel and her colleagues suggest that the lone cheetah picked up on scent markings left by his brothers and then searched until he found them. Cats have a keen sense of smell, and cheetahs, like other cats, can identify individuals by their unique smell. They also spend a great deal of time and effort scent marking on landmarks in their territories.

"There may be other explanations, but considering that we know cheetahs use scent marks to avoid running into predators and find females in heat, the idea that scent marks can aid their reunions is a reasonable one," says Hubel.

Hubel cautions that this is one example and there is still a lot to learn about cheetah reunions.

"We know they use [scent marks](#), but we really don't know how long they are able to detect the scent or if [cheetahs](#) can follow a scent trail like a dog, or has been observed in lions once or twice," she says.

The researchers still have a lot of questions about cheetah behavior, but these data are not easy to obtain. The 31-day separation was the only such event that occurred during the six months that Hubel and her colleagues were following the cheetah brothers.

"This type of work is quite often like a roller coaster, since the data that can be collected are amazing but the setbacks are frequent," says Hubel.

"I hope this is a small contribution in a field that undoubtedly will be able to gain important insights into animal interactions using increasingly affordable and accurate GPS technology."

More information: Tatjana Y. Hubel et al. Cheetah Reunion – The Challenge of Finding Your Friends Again, *PLOS ONE* (2016). [DOI: 10.1371/journal.pone.0166864](https://doi.org/10.1371/journal.pone.0166864)

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