

Quick- Thinking Meerkats

By Cheryl M. Reifsnyder, Ph.D.

When something wants to eat you, act fast!

Dr. Marta Manser crouches in the dry grass, watching a cat-sized meerkat sniff for its breakfast. Suddenly, a high-pitched alarm call breaks the morning quiet: *Hawk!* The meerkat bounds toward a hiding hole, reaching it in seconds.

Dr. Manser traveled from the University of Zurich in Switzerland to South Africa's Kalahari Desert to study how meerkats find their hiding places—and to learn about how animals think. Many animals show intelligence, from toolmaking to navigating long distances. Scientists want to understand how these animals solve tricky problems.

“Meerkats are a great subject to study,” Dr. Manser says. “The size of the meerkats and their small home range allow us to follow them easily on foot over the whole day.”

The researchers couldn't

always observe meerkats so closely. But over time, the animals got used to having people nearby. “It took a year,” Dr. Manser says. “Wild meerkats typically run away when they see a person at a distance of a few hundred meters.”



Dr. Manser (left) uses a variety of equipment to study meerkats.

Avoiding Danger

A meerkat is not a cat. It's related to the mongoose. A meerkat's life depends on its ability to find shelter quickly. This animal spends five to eight hours daily searching for food such as insects, snakes, scorpions, and small mammals. During those hours, the meerkat can be attacked by hawks, jackals, or other predators. Meerkats live in groups and take turns acting as guards, standing on hind legs and watching for danger.

Whenever a meerkat spots an enemy, it barks a rapid, peeping alarm. Then all the meerkats race to *boltholes*. These hiding holes were dug by meerkats, ground squirrels, or other burrowing animals. The meerkats' territory contains several thousand boltholes.

Dr. Manser wondered how meerkats find those boltholes. Do the animals make decisions based

on what they see at the moment or on what they saw in the past few minutes? Or do meerkats remember where to find their holes? Only some clever experiments would lead to answers.

Do They Backtrack?

Once the researchers could follow within a few feet of the meerkats, they began to watch what meerkats did when they heard an alarm call. The research team's first question was, Do meerkats backtrack to the last hole they passed?

The team found that the meerkats almost always ran to the *nearest* bolthole, just as you might run to the closest bathroom in your school instead of going back to the last one you passed.

The scientists had discovered that meerkats go to the best hiding spot, even if they haven't passed it recently. But how do they find it?



Sight or Memory?

Dr. Manser's next question was, Do meerkats find the closest hole by *looking* for it?

The research team dug new boltholes. When a meerkat came near, the researchers played a recording of an alarm bark to make the meerkat run for shelter. If meerkats find boltholes by looking for them, they should have run to the new, easy-to-see holes.

But the meerkats ignored the new holes.

The research team had answered another question. Meerkats don't find boltholes by looking for them. In fact, they run to other boltholes, even if a new hole is closer.

If meerkats don't look around and don't backtrack to find boltholes, Dr. Manser wondered, do meerkats *remember* where the holes are, similar to the way you remember where the bathrooms are in your school?

To test this idea, the research team covered some holes with car mats and sand. When a meerkat approached, they played the recorded alarm bark and watched. The meerkats remembered where to find their holes.



Meerkats dig many burrows over a big area. They always have a safe hiding place nearby.


have several thousand boltholes, they remember exactly where the holes are.

What Are They Thinking?

Meerkats remember where to find their holes—but how? Maybe they follow specific routes in their search for food, allowing them to memorize a few “snapshots” of the landscape that they can recognize later. Or maybe their thinking is more human-like. Maybe they make a mental map of their foraging area.

Only more study will tell. Dr. Manser doesn't mind. She loves studying meerkats.

“Some of the best moments are the early hours at their sleeping burrow when the sun rises,” she says. “One after the other emerges from the burrow, some still totally sleepy while others are already fully active, just as people differ in this way.”

Soon, she'll be back at one of those burrows, ready to figure out more about how meerkats think. 

Mere Facts on Meerkats

Newborn Meerkats

- are born in litters of 2 to 5
- weigh about an ounce
- open their eyes when they are 10 to 14 days old

Adult Meerkats

- weigh 1½ to 2 pounds
- are 10 to 14 inches long (plus a 7- to 10-inch tail)

“The meerkats, running over to the covered boltholes, stopped at the supposed entrance,” Dr. Manser says. “Some of them immediately ran to the next bolthole, while others began to dig the sand out.” One meerkat dug out so much sand searching for the lost hole that the mat fell in.

Now the team had yet another answer. Even though meerkats

Read “Not Just a Hole in the Ground” on HighlightsKids.com.

