ME TOO, JUST FELT THIS COMPULSION TO FIND HIGHER GROUND ...

LISTEN TO THE ANIMALS

Why did so many animals escape December's tsunami?

BY **RUPERT SHELDRAKE**

Elephants in Sri Lanka and Sumatra moved to high ground before the giant waves struck; they did the same in Thailand, trumpeting before they did so. According to a villager in Bang Koey, Thailand, a herd of buffalo was grazing by the beach when the animals 'suddenly lifted their heads and looked out to sea, ears standing upright'; they turned and stampeded up the hill, followed by bewildered villagers, whose lives were thereby saved. At Ao Sane beach, near Phuket, dogs ran up to the hill tops, and at Galle in Sri Lanka dog owners were puzzled by the fact that their animals refused to go for their usual morning walk on the beach. In Cuddalore District in Tamil Nadu, southern India, buffaloes, goats and dogs escaped, as did a nesting colony of flamingos that flew to higher ground. In the Andaman Islands 'stone age' tribal groups moved away from the coast before the disaster, having been alerted by the behaviour of animals.

How did they know? The usual speculation is that the animals picked up tremors caused by the under-sea earthquake. This explanation seems unconvincing to me. There would have been tremors all over Southeast Asia, not just in the afflicted coastal areas. And if animals can predict earthquake-related disasters by sensing slight tremors, why can't seismologists?

Animals also seem to know when other kinds of calamities are about to strike. In my recent book *The Sense of Being Stared At* I summarise a large body of evidence of unusual animal behaviour before earthquakes, including those in Kobe in 1995 and Assissi in 1997 and recent quakes in California. In all cases there were many reports of wild and domesticated animals behaving in fearful, anxious or unusual ways several hours or even days before the earthquakes struck. The same is true of the 1999 earthquake in Turkey, with its epicentre near Izmit:

dogs were howling for hours in advance, and many cats and birds were behaving unusually.

On 28 February 2001, a 6.8-magnitude quake struck the Seattle area, and once again animals behaved unusually beforehand. Some cats were said to be hiding for no apparent reason up to 12 hours in advance of the earthquake; others were behaving in an anxious way or 'freaking out' an hour or two before; some dogs were barking 'frantically'; and goats and other animals were showing obvious signs of fear.

No one knows how some animals sense earthquakes coming. Perhaps they pick up subtle sounds or vibrations in the earth; maybe they respond to subterranean gases released prior to earthquakes, or react to changes in the earth's electrical field. They may also sense in advance what is about to happen in a way that lies beyond current scientific understanding, through some kind of presentiment.

Animals can also anticipate man-made catastrophes such as air raids. During WWII, many families in Britain and Germany relied on their pets' behaviour to warn them of impending air raids, well in advance of official notification. These warnings occurred when enemy planes were still hundreds of miles away, long before the animals could have heard them coming. Some dogs in London even anticipated the explosion of German V-2 rockets. These missiles were supersonic and hence could not have been heard in advance.

Unusual animal behaviour also occurs before avalanches. On 23 February 1999 an avalanche devastated the Austrian village of Galtür in the Tyrol, killing dozens of people. The previous day, the chamois (small goat-like antelopes) came down from the mountains into the valleys: something they never usually do. Through surveys in alpine villages in Austria and Switzerland, I found that the animals most likely to anticipate avalanches are chamois and ibexes, and also dogs. Although it is still unexplained, this ability would obviously be of survival value in mountain animals, and would be favoured by natural selection.

With very few exceptions, the ability of animals to anticipate disasters has

ILLUSTRATION BY **STEVE WAY**

been ignored by Western scientists, who dismiss stories of animal anticipations as anecdotal or superstitious. The Chinese, in contrast, have encouraged people in earthquake-prone areas to report unusual animal behaviour since the 1970s; and Chinese scientists have an impressive track record in predicting earthquakes. In several cases they issued warnings that enabled cities to be evacuated hours before devastating earthquakes struck, saving tens of thousands of lives.

By following the lead of the Chinese and paying attention to unusual animal behaviour, earthquake warning systems might be feasible in California, Greece, Turkey, Japan and elsewhere. Millions of pet owners and farmers in earthquake-prone areas could be asked to take part in this project through the media. They could be told what kinds of behaviour their pets and other animals might show if an earthquake were imminent: in general, signs of anxiety or fear. If people noticed these signs, or any other unusual behaviour, they could immediately call a telephone hotline or send a message via the internet.

A computer system could analyse the places of origin of the incoming calls. If there were an unusual number of calls it would sound an alarm, and display on a map the places from which the calls were coming. There would probably be a background of false alarms from people whose pets were sick, for example, and there might also be scattered hoax calls. But if there were a sudden surge of calls from a particular region, it could indicate that an earthquake was imminent. The same principles would apply to tsunamis.

To explore the potential for animal-based warning systems would cost a small fraction of current earthquake and tsunami research. By doing this research we would be sure to learn something, and could probably save many lives.

At present, many millions of pounds are being allocated for setting up tsunami warning systems. I hope that those responsible for spending this money will not ignore what animals can tell us.

■ Dr Rupert Sheldrake is a biologist and author of *The Sense of Being Stared At: and other aspects of the extended mind* (Arrow, £7.99); www.sheldrake.org

ANIMAL INTELLIGENCE AND THE TSUNAMI

THE ELEPHANTS AND THE TOURISTS

Thai elephants foresaw the arrival of the giant waves that left a trail of death and destruction throughout Southeast Asia, and their intuition saved the lives of a dozen tourists. The elephants started to cry at dawn, just as an earthquake measuring nine degrees on the Richter Scale devastated the Indonesian island of Sumatra thousands of miles away. 'We have never seen elephants cry before, so it completely amazed me,' explained Dang Salangam, a 36-year-old elephant-keeper on the ultra-touristy beach of Khao Lak. The keepers managed to calm the elephants down. But they started to cry again an hour later, and the keepers, who know the animals well, were unable to comfort them. 'The elephants were inconsolable. They broke their thick chains in order to escape and headed towards a hill behind the resort,' explained keeper Wit Aniwat. At least 3,800 people were soon to die on the beach. 'Not long after, we saw the tsunami in the distance,' Aniwat said. The keepers persuaded a few of the elephants to return to the resort in order to save some of the tourists. The elephants lifted the tourists onto their backs with their trunks, rushed to the top of the hill and stopped. The giant waves had washed a kilometre inland but had not quite reached the area the elephants had chosen to head for.

BATS AND DOGS

Ravi Corea, the president of the Sri Lanka Wildlife Conservation, knows of two stories of animals seemingly forecasting the disaster. In one instance a friend living in the south of Sri Lanka said he saw bats flying at great speed inland. Yet as it was daytime the nocturnal animals should have been asleep in a cave. Moments later the tsunami struck. Another friend told Corea that he believed his dogs saved his life: every morning he was accustomed to taking his dogs for a run along the beach; but on the day of the tsunami, the dogs would not go, refusing to leave the house.

FLAMINGOS AND ANTELOPE

According to forest officials at Point Calimere wetland sanctuary in Tamil Nadu, birds, in particular flamingos, which nest in low-lying areas, took to the air and flew to high ground long before the tsunami hit. In the same park about 1,700 blackbuck antelope survived because they also ran for higher ground. Forest officer Akash Deep Baruah said: 'On the morning of 26 December our lighthouse watchman saw the blackbucks running away from the seashore. He found it unusual. About five minutes later the first wave hit the coast.'

THE OLD MAN AND THE CROCODILE

An old Sri Lankan man believes that he was saved from the tsunami by the benevolence of a crocodile. The wave swept Upali Gunasekera from his garden and into the water, where, flailing to keep afloat, he reached out for a log. Except the log was actually an estuarine crocodile which he says he had regularly seen in his garden. Having already been in the water for seven hours, he feared for his life, but rather than eat him the crocodile used its snout to push him to the shore.

THE HIPPO AND THE TORTOISE

A dehydrated baby hippo was found by Kenyan wildlife rangers after it had been swept out to sea and back to the shore. They took it to the Haller Park animal facility in Mombasa. Having pined for his mother, the 300-kilogram animal made friends with a giant male Aldabran tortoise named Mzee, which is Swahili for 'old man'. The two of them now swim, eat and sleep together, with the hippo trailing behind the lugubrious old tortoise as if it were his mother.