



Dr Irene Pepperberg with Alex the grey parrot – he could understand the meaning of the words he used, but Pepperberg said he didn't have language.

# CAN WE TALK TO THE ANIMALS?

WHETHER IT'S TARZAN OR DR DOOLITTLE, WE ROMANTICISE THE IDEA OF HUMANS WHO CAN COMMUNICATE FREELY WITH OTHER ANIMALS. BUT IS THE IDEA OF CONVERSING WITH A KILLER WHALE OR KANGAROO ANYTHING MORE THAN A PIPE DREAM, AND EVEN IF IT'S NOT, WHAT COULD IT ACHIEVE? JAMES FAIR REPORTS.

Some 20 years ago, while being interviewed by a journalist from the *New York Times*, the animal cognition expert Dr Irene Pepperberg found herself holding a conversation with her research subject, Alex – an African grey parrot. “Calm down!” Alex said when Pepperberg came into the room. “Don’t tell me to calm down!” she retorted. Pepperberg laughs a little when reminded of this exchange, which in the grand

scheme of her work with Alex is nothing but a footnote. “I’d had a bad faculty meeting, and he could tell I was agitated,” she recalls. “When he was agitated, we would tell him to calm down, so he had made the association that this was an appropriate vocalisation. But we don’t know what his intention was. I was so annoyed, I didn’t even think about it until later.” Though it may seem to an outsider as if Alex was offering some (potentially irritating) advice to Pepperberg, the reality

may be more prosaic – he just knew this was something that was said in response to perceived agitation without understanding what it meant. Pepperberg worked with Alex (until his death in 2007) for 30 years, and made some startling discoveries – she proved he understood the concept of zero and could do basic probabilistic reasoning. He even invented his own words – he coined the term ‘banerry’ for apple, because he saw it as a cross between a banana and cherry.

“But I would never argue he had language,” she tells *BBC Wildlife*. “I’d call it symbolic representation.” On the other hand, Alex was clearly doing more than just parroting what he’d been taught.

**BIRD BRAINS** Pepperberg chose to work with African grey parrots partly because of their ability to mimic human speech and partly because they are renowned for their intelligence. “Bird brains function much like primate



Denise Herzing (inset) and the spotted dolphins she works with.

“ALEX THE AFRICAN GREY PARROT UNDERSTOOD THE CONCEPT OF ZERO AND BASIC PROBABILITY.”

brains, at least when you are discussing parrots and corvids,” she says. She was inspired to work in the field of animal cognition by the pioneering zoologist Donald Griffin, who said communicating with an animal could be a “window into its mind”. “I mean, come on, we all read the *Dr Doolittle* books as children,” she says. “We want to understand what these animals are thinking – and I don’t believe Wittgenstein [the early 20th century Austrian philosopher] was right when he said, ‘If a lion could speak, we could not understand him.’”

**MASTER MIMICRY** There are many scientists working today trying to use the latest techniques and technologies to communicate with a wide range of species. Besides Pepperberg, there’s also Dr Denise Herzing, who has taken on the considerable task of trying to ‘talk’ to wild Atlantic spotted dolphins, while a bonobo called Kanzi has acquired a vocabulary of some 350 words (which



Sue Savage-Rumbaugh with Kanzi the bonobo, who can ‘say’ more than 300 words.

## PET THOUGHTS AND FEELINGS

Many people would argue you don’t have to ‘talk’ to animals in order to communicate with them. It’s a notion that is undoubtedly attractive, but there is little scientific evidence to back up their claims.

Susie Shiner and her partner Paul Braithwaite are animal shamans who converse with domestic pets using “imagery, thought and feeling”. They conduct sessions with clients and their pets, relaying what the animals want to communicate to their owners.

In the one I attended, they ‘interpreted’ for two terriers called Skippy and Scamper – Skippy “loves the children”, Susie explained, but “wants some more quiet time.”

She also described how Skippy was seeing things he’s afraid of – “a white flash, either lightning or fireworks”. “He hates fireworks,” said his owner.

Shaun Ellis has run captive wolf centres in the UK and lived with wild wolves in the USA. He says there is a unique bond between wolves and dogs and humans that began with them becoming dependent on us.

“When you are in the moment with them, they connect with everything we feel,” he says.

He believes wolves can be used to help children. “Wolves are not afraid of emotions,” he says. “Learning to understand them can help kids deal with their own feelings of anger or sadness.”



Susie Shiner describes herself as an animal shaman.

Denise Herzing: Brian Sherry/National Geographic Creative/Alamy; dolphins: Rodrigo Friscione/Getty; Sue Savage-Rumbaugh: Barcroft/Getty; Susie Shiner: Jimmy Goodall

he expresses through a keyboard or laminated cards) and can understand more than 3,000.

Both the intelligence and communicative abilities of cetaceans – dolphins and whales – came into the public eye earlier this year when it was reported that a captive killer whale called Wikie had been taught to imitate human speech. Much of the press coverage exaggerated what had really happened, however: “Killer whale learns to talk to humans: LISTEN to world’s first talking orca say ‘hello’,” ran the headline in the *Express*.

But, according to José Abramson, of the Pontificia Universidad Católica de Chile and who carried out the research, there was never any intention that Wikie should understand the words she was taught to say – quite the reverse, in fact.

“We didn’t want to teach her language, we wanted to show her novel sounds that were meaningless,” says Abramson. The idea was to demonstrate that she has a huge ability to mimic other sounds, which scientists believe is a key component of

creating a spoken language – humans, of course, are very good at imitation, as are parrots, while our great ape cousins are not.

“What our research shows is that animals [such as killer whales] have the ability to learn socially through imitation, and this means they can develop cultural or group traditions,” Abramson explains.

It has long been known that separated orca populations have different ‘accents’ and hunt different prey animals, and this, scientists postulate, leads to social and then genetic isolation and eventually speciation. Indeed, many scientists want to split killer whales into four separate species – the point of Abramson’s research is that it’s shown killer whales have the mimicry ability for this to take place.

**DOLPHIN CHAT**

Herzing, in contrast, wants to find out what her wild spotted dolphins will do with a piece of technology that bridges the gap of communication between them and us. Using a computer system called CHAT (it stands for Cetacean Hearing and Telemetry), she and her colleagues at the Wild Dolphin Project, with the help of the Animal Computer Interaction Lab at Georgia Institute of Technology, have created artificial whistles that refer to a series of objects – sargassum seaweed, a scarf and a rope – that the dolphins like to play with. Think of it like creating words in Esperanto for human toys.

**ANIMAL MAGIC: FROM CHATTY CHIMPS TO CLEVER KANGAROOS**

There have been a number of films and TV shows premised on the idea that humans and animals can communicate.



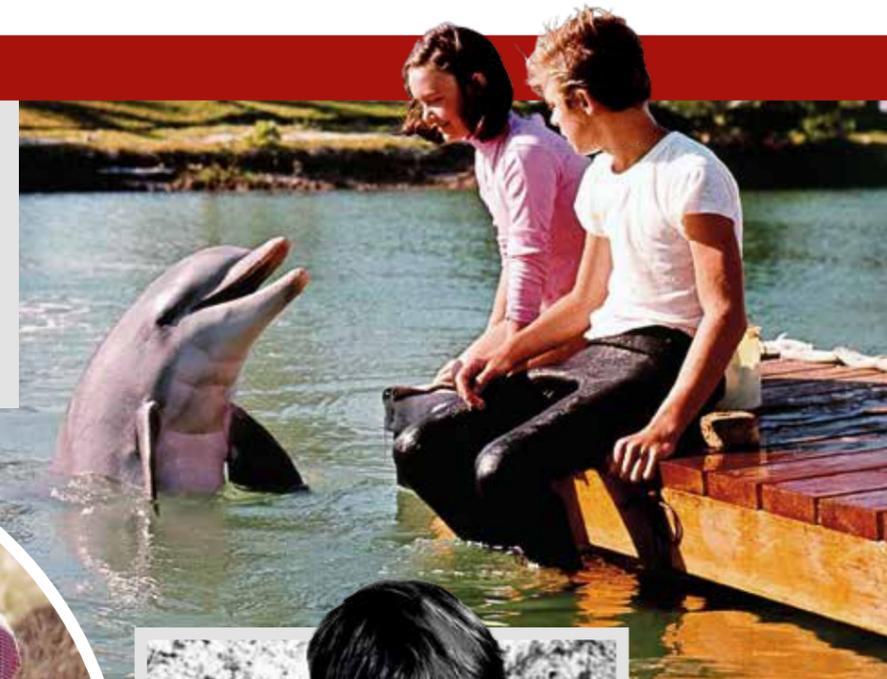
**CHEETAH**

Cheetah, a chimpanzee, was Tarzan’s sidekick and comic relief, a court jester to the ape-man’s king. He mimicked human behaviour, including laughing and screaming, and made chimpanzee grunts and screeches interpreted by Tarzan. *“Cheetah. What you drink?”* *[Cheetah leans in, burping in Tarzan’s face]* *“Schnapps?”*



**LASSIE**

Lassie started life as a short story, then a novel, before being written into a series of feature-length films and finally a TV series, which ran from the 1950s–70s. Using barks and whimpers, she’d make humans aware of accidents that had befallen other people or animals. *“What’s the matter?”* *Whimper.* *“What is it? You want me to go with you? You’ve found Chipper, is that it?”* *Woof, woof, woof.*



**FLIPPER**

Flipper was a bottlenose dolphin who starred in the eponymous US TV show set in Florida. Flipper helped protect the marine reserve where he lived. The sounds he used to communicate with people were not natural but a recording of a kookaburra. *“How about calling him ‘Flipper’? [to the dolphin] What do you think? Do you like ‘Flipper’?”* *[Flipper whistles happily]*



**SKIPPY**

Skippy was the star and namesake of one of Australia’s most successful and instantly recognisable TV-shows, *Skippy the Bush Kangaroo*. Like Flipper, Skippy would let out a series of clicks (that were not natural for a kangaroo) that his human companions would interpret. *Tchk tchk tchk* *“What’s that? He’s in trouble, he can’t get to the show! Is that it, Skippy?”*

**THERE’S NOT A LOT OF EVIDENCE THE DOLPHINS UNDERSTAND THE MEANING OF THE WORDS.”**



Service dogs can ‘talk’ to people using a bite-plate.

These ‘words’ can be played underwater, and anything the dolphins say in response is picked up by a set of hydrophones. Herzing says they now have three years of data, and it’s clear the dolphins are copying the newly created whistles, though in ways they hadn’t quite expected. “They are mimicking in different frequencies or modulating the signal a bit, and the computer only recognises if it’s a pretty tight match,” she says. “Our big conclusion is they are trying to mimic in lots of cool ways, but there’s not a lot of evidence they understand the function of the words yet.”

But what’s the point of all this? What does it reveal about the dolphins or other species for that matter? “They are social mammals and share similar social complexities to us, but they live in a completely alien environment,” says Herzing. “They share the idea of families and friends and joy and pain, and we wonder what we can learn from that. Developing a two-way communication system like CHAT could help us to be more open to other species and their expertise.”

Herzing suggests humans could benefit from developing systems for communicating with other species – indeed,

there already are. Service dogs in war zones can now be fitted with vests that allow them to actively trigger an alarm if they find a bomb or hostile combatants in order to communicate their location, rather than bark and alert the enemy to their discovery. The developers of the FIDO vest say it could have a range of applications for dogs working in search and rescue or as companion animals to people with medical conditions such as diabetes.

**SPEAKING IN SONGS**

Irene Pepperberg, meanwhile, says, her studies of captive African greys shine a light on

how they behave in the wild. Some studies of parrots have revealed they have remarkably sophisticated calls that – when slowed down – have very fine structures. Maybe the birds themselves get far more information from these vocalisations than we can ever imagine, she suggests. “There’s no way we could have trained them to do what they do unless it was based on some kind of existing architecture,” she adds. It makes sense for parrots to be smart and communicative, she points out. They live in the rainforest canopy, a complex environment in which they are exposed to predators while

foraging. They need to be able to alert group members to potential threats as well as telling them about sources of food such as fruiting trees. “We don’t know what they’re saying when they all get back together at night, but it could be ‘Look how big my crop is – follow me tomorrow’,” Pepperberg says.

**WINDOWS INTO THE MIND?**

So, can we talk to the animals? In one sense, clearly yes – a dog can be given an instruction it understands, while a dog or even a cat can tell you it’s hungry. But two-way communication involving the clear use of language is much harder to

achieve and demonstrate, and to date it would be hard to argue there have been any significant breakthroughs or “windows into the mind”, as Donald Griffin put it.

“Imagine what it would be like to really understand the mind of another intelligent species on the planet,” muses Herzing in a TED talk she gave in 2013. That’s the goal, but it may be some time before we reach it. 🐾

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Alex Foundation <https://alexfoundation.org>  
Wild Dolphin Project <http://www.wilddolphinproject.org>