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Life

The truth about cats' domestication and why they really quite like us

Cats have a reputation for being aloof and untamed, but recent studies suggest they may be more attuned to humans than we realise. These findings may make you see your cat in a new light

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ON A regular basis, I wonder why we have a [cat](#). This thought was most recently prompted by Peggy jumping onto a dresser and knocking off a ceramic bowl, which smashed. By the time you read this, she will have done something else to make me question my choice of pet.

Unlike dogs, which are dependent on us for everything, including their emotional well-being, cats seem to be sociopaths. Most cat owners (if owner is even the word) have entertained the suspicion that our feline companions would abandon us if we found ourselves unable to open their food containers. Sure, Peggy comes for cuddles every so often, but she might just be looking for warmth. In fact, despite cats having lived among people for thousands of years, it is questionable whether this has done anything to tame them.

However, it may be that cats are just misunderstood. Compared with dogs, they express themselves far more subtly, so that many of us don't understand what their gestures and behaviours mean. Recent experiments suggest that cats are more socially intelligent and attuned to familiar humans than we realise. These studies even indicate that cats like us (I know, I can't quite believe it either). What's more, genetic investigations are getting a grip on just how domesticated cats really are. The findings may make you see your moggy in a whole new light.

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[Cats and dogs are the most popular pets in the world](#), yet the two behave very differently towards us. Dogs will rush to the front door in excitement when you come home,

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the Near East. Archaeological evidence includes a 2004 report that a [cat had been buried with a person](#) on the island of Cyprus, in a grave dating to 9500 years ago. This ancient link between cat and human is supported by growing genetic evidence.

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[Leslie A. Lyons](#) at the University of Missouri has collected DNA from cats for three decades and looked at a range of genetic markers to explore their evolutionary history. “In the end, the story is all the same,” she says. In 2008, her team [compiled DNA samples from more than 1100 individuals](#) from five continents. “The highest diversity tends to be in the Near East,” indicating that this is where the population originates, she says. Similarly, in a study from November, Lyons and her colleagues obtained DNA from over 1000 cats, and again found that the [eastern Mediterranean was the site of their domestication](#).

The timing is significant. Cats started hanging out near humans around the time that people in the eastern Mediterranean started farming, instead of hunting and gathering. This change in lifestyle meant people accumulated stores of grains like wheat. “It attracted rodents and other pests,” says [Danijela Popović](#) at the University of Warsaw in Poland. “The increased number of rodents attracted the cats.”

In other words, there is no reason to suppose that humans deliberately domesticated cats. “Cats found it is good to be close to the people because the food is there,” says Popović. “Also, people found it is good to have cats around.” If anything, cats domesticated themselves.

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▲ A cat cafe in Kyoto, Japan

Karine Aigner/naturepl

In 2014, a team that included Lyons described the [first complete genome sequence of a domestic feline](#), obtained from an Abyssinian cat called Cinnamon. Compared with wildcats, several regions of this genome showed signs of having evolved under natural selection. They included genes thought to be involved in fear conditioning – the ability to develop fear responses to previously innocuous stimuli – and learning about rewards. The key transition seems to have been that some cats became more tolerant of humans, perhaps because they were bolder or less afraid. [Those cats were able to thrive on mice](#) – and so evolution favoured cats that were less scared of humans.

Route to domestication

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In a study published last November, Popović and her colleagues found evidence that [African wildcats may actually have roamed as far north as Poland](#) 8000 years ago – or perhaps that they interbred with Eurasian cats, which picked up some of their distinctive DNA as a result. This may explain a 2018 study showing that cats living in central Europe [already carried some of the genetic markers found in domestic cats](#), 2000 years before the Romans.

The wild ancestors of domestic cats are referred to as African wildcats or Near Eastern wildcats, depending on who you ask. The confusion arises because the various wildcat species and subspecies all interbreed to some extent. This mating free-for-all continues to the present day.

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[Why cat people and dog people's personalities match those of their pet](#)

It is only in the past 200 years that humans have started selectively breeding cats, generally to produce particular appearances rather than for practical purposes. But most cats aren't part of these breeding programmes and mate as they please – in contrast to dogs, which, for centuries, have been selectively bred for purposes ranging from hunting to fitting in handbags. And unlike dogs, most cats still go out and perform their natural behaviours like hunting. In fact, cats have considerable control over their daily routines compared with other domesticated animals. “This is where we get into cats being semi-domesticated,” says Lyons. “If cats were all turned loose, they would probably do pretty good, just living on their own and going out and hunting birds and mice and rats and lizards, and surviving.” This means that there simply isn't such a strong need for cats to be in tune with humans.

This doesn't stop us anthropomorphising them in a big way. Have you ever wondered if you are alone in talking to your cat in the same high-pitched, happy voice that we use to address babies and children? Dog owners talk to their pets in this way, and in a [study published last year](#), [Charlotte de Mouzon](#) at Paris Nanterre University and her colleagues showed that cat owners do it too. “We recorded humans talking to their cats,” she says,

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Cats know when we are talking to them, for example. In a [study from October last year](#), de Mouzon and her colleagues recorded cat owners talking, both in the high-pitched voice and normally. They also recorded strangers saying the same things. When the cats heard their owners talking in the high-pitched voice, they changed their behaviours: variously looking around, becoming still or moving their ears and tails. However, they didn't react to the strangers talking in the high-pitched voice. "They don't consider all humans the same," says de Mouzon. "They really have a special feeling when their owner is addressing them."

This is just one approach that is shining light on feline social skills. In the past few years, a group of Japanese researchers has made a string of surprising discoveries. In 2019, research co-led by [Atsuko Saito](#) at the University of Tokyo found that [pet cats recognise their names](#); their ears and tails moved differently when they heard recordings of their owners saying their names compared with other words that sounded similar. But your pet cat will still probably ignore you when you call it. "Cats are not evolved to respond to human cues," Saito [told New Scientist at that time](#). "They will communicate with humans when they want. That is the cat."



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Other research has revealed that cats are attuned to their owners in other ways. In 2021, the Japanese team, this time led by [Saho Takagi](#) at Kyoto University, showed that [cats can mentally “map” where their owners are](#) in the room just by listening to their voices. When recorded voices were played from different speakers, making it sound like the human had teleported from one side of the room to the other, the [cats moved their ears and looked around](#) – seemingly surprised. “That is how carefully they listen to humans,” says Takagi.

Similarly, in a [study posted online last September](#), de Mouzon and her colleague Gérard Leboucher, also at Paris Nanterre University, found that cats approached more quickly if the researchers said their names and offered their hand, compared with only one of these modes of communication. This indicated that the cats could integrate multiple signals from humans. Furthermore, Takagi and her colleagues have found that cats [display jealousy](#) – which they tested by comparing the cat’s reaction when their owner petted a realistic-looking toy cat (a potential rival) or a furry cushion.

Perhaps the most striking evidence comes from Vitale. In a [2017 study](#), she and her colleagues presented cats with a choice of four stimuli: food, toy, scent or interaction with a human. For most cats, humans were their favourite, with food coming second.

Emotional attachment

Vitale followed that up with a [2019 study](#) in which she explored the nature of cats’ emotional attachment to their owners. She used a test that is also deployed, with modifications, on human infants. One by one, 70 kittens aged 3 to 8 months were taken into an unfamiliar room by their owners. After 2 minutes, the owner left and the kitten was left alone for 2 minutes. Then the owner returned. Most of the kittens – 64 per cent – displayed a secure emotional attachment.

When their owners returned, the kittens promptly interacted with them and seemed pleased to see them, then, reassured, confidently resumed exploring the room. This mirrors what is seen in human infants who have secure relationships with their parents and caregivers. “Secure cats see their caregiver as a source of comfort and security,” says

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It seems that we have misunderstood our cats. Some of the confusion has arisen because they don't make big demonstrative gestures in the way dogs do, says de Mouzon. "They are very subtle animals." Cats [haven't evolved the muscles to raise their eyebrows](#) to make puppy-dog eyes, for example. But evidence accumulated over the past decade shows that cats have, despite appearances, developed many social skills to help navigate their human-centred world.

I wonder whether cats are changing, gradually becoming more domesticated as they spend more time indoors in suburban houses and less time on farms. Unfortunately, there is currently no way to tell: nobody carried out behavioural tests on cats in the Middle Ages (when, according to [a recent analysis of manuscripts](#) from that time, they played a central role in daily life). And we don't yet have a time series of DNA from cats from different centuries to see if they are still evolving.

But what is clear is that cats like Peggy do feel an attachment to their human attendants. As I sweep up the remains of the bowl that she broke, that is reassuring to know.

Communing with kitty

Can cats talk? The short answer is no, but they may be better at communicating than we assume.

Gabriella Smith at the Messerli Research Institute in Vienna, Austria, is one of several researchers involved with [TheyCanTalk](#), a citizen science project testing the communication abilities of domestic animals, including cats (though so far, most of the focus has been on dogs).

The idea is to see whether the animals can learn to push buttons to communicate simple but specific messages – in particular, their desires. "So pressing the 'outside' button functions to request going outside," says Smith, "or to press 'water' functions to bring to your attention that there's something up with the water."

Compared with dogs, we know less about cat communication, partly because cats are more difficult to work with: they are territorial and less willing to be bribed with food treats. Hence the citizen science approach: "It's to our advantage to study cats in the home" where they

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