

CAT SENSE

BY NICK SMITH

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[John Hood](#)

Introduction

Cats are fascinating creatures. So fascinating, in fact, that when I started to compile this guide to the five feline senses, I found a mass of information to keep me entertained. Curiosity may not have killed me this time around, but it certainly slowed me down as I busily delved into a clowder of cat facts.

Animals have always been a part of my family, and I don't mean my ill-mannered Uncle Phil. I've lost count of all the dogs we've adopted over the years; there have been plenty of fish, a couple of hamsters and a bunny or two. But cats wear the pants in my parents' house.

There was Ollie, who made his home in our garden shed and stayed there until he disappeared. Candyfloss was a small striped cat coddled by my sisters. Chips was another of her charges, run over by a bus. The longest-lasting was Tom, a curmudgeonly tabby who lived with us on a busy main road in Bristol, England.

When Tom was hit by a car, we feared the worst. But the vet saved him, leaving the poor animal with one eye and a limp (we should have called him Lucky). Unfortunately, Tom's bowels were never quite as strong after that and he took to defecating in my wardrobe. We moved to a quieter neighborhood but Tom faded away, as if pining for the heavy traffic he'd often dodged.

I was Tom's best friend, whether he liked it or not. He was my confidant and someone to pester in my teenage years. He would hide under my bed, complaining as I tried to scoop him out in the evenings. At times, he could be a very chatty cat.

With the strong bond between us, I began to realize how many traits cats share with humans. After all, a cat's brain is more similar to a man's brain than a dog's, its emotions controlled by exactly the same portions of that brain. Cats can get asthma, acne and even sunburn, they can be left or right-pawed and they can be downright moody at times, just like us.

With so much in common with us, it's no wonder that cats are the most popular pets. In 1987 they officially became the most popular pets in America, reaching greater numbers than dogs, gerbils or birds. I don't know if the free-spirited felines would be happy with such popularity – they'd rather be independent.

While breaking *Cat Sense* into five sections, I've taken the liberty of digressing and expanding each part – for example, the segment on taste includes some facts on feeding. The sense topics serve as more of a jumping-off point to squeeze in some fascinating facts. If you will, please accept these multiple musings as a nod to cats' spirit of independence.

Smell

Cats love to smell and they do it like a cork dork might sample the delights of a well-stocked cellar.

The difference is, while the wine lover sniffs using anything between five and twenty million olfactory cells – depending on the individual nose – a cat's honker is far more sophisticated, able to detect far more elements in an odor. With 60 to 80 million olfactory cells at his disposal, we can understand why this sense is so important to a moggy. It also becomes obvious why alley cats spend so much time snorting trash.

They won't just be using their noses, though. Cats also have a Jacobson's organ, a scent analyzer in the roof of their mouth. If your cat curls up its lip when it's hit by a strong whiff, it's not sneering at you –its oral scent organ is being used.

One of those odors might come from your tap water. It's nothing we'd notice, but the chlorine and other assorted minerals can bother the cat. As having such a powerful sense of smell isn't always a good thing, you can give your pet water with a couple of ice cubes in, although most owners draw the line at filling their cats' dishes with Evian.

When they're not detecting scents, cats are often spreading them instead. They have special glands for the purpose on their faces (between their eye and ear) and the base of their tails. Blokes are the smelliest, creating the most scent, and un-neutered toms are more likely to engender allergies in human beings. So if the mere presence of a cat in the room is enough to make you weep, a spayed female feline's your best bet for a pet.

Cats don't just rub themselves against your legs to tickle you or bug you for food. They'll do the same thing with other cats (if they're not being threatened), spreading their scent and sharing it with the recipient. They'll usually use the glands on their forehead or the ones near their tail's base.

Not only will they mark their territory (or your calf) with their familiar scent, but you'll do the same when you stroke their fur. In a world that wafts with a cocktail of smells, your fragrance can be as important to a cat as the way you sound.

Hearing

To accompany their super smell, cats have super hearing, too. This sense is one of their strongest, more sensitive than a human's or even a dog's. Compared to them, we're half deaf: we hear little or nothing above the range of twenty khz, while a cat's is three times as high.

It isn't always that way. When they're born, kittens' ear canals are closed. They don't start opening for nine days, and if they have white fur and blue eyes they may never hear at all. It's a genetic thing, apparently. Lab coated cat lovers have learned that a white cat with only one blue eye will likely be deaf only in the ear closest to that blue eye. A white cat fortunate enough to be born with orange eyes should be able to hear well, though all kittens take up to two weeks to gain full hearing.

Aside from being able to hear a rustling mouse at a hundred paces, cats have the ability to twist their antennae at various angles. Their ears can rotate 180 degrees in an independent fashion thanks to the 32 muscles that direct the outer ear (we have a paltry six). Their ears can move fast, too, turning direction to catch new sounds.

High pitched sounds are most likely to get a cat's attention, and they'll pay the most attention to women and children (or, in our pet's case, whoever's holding their food dish). If you like an easy life and want your cat to respond rapidly, give it a name like "Molly" or "Tommy" – it will prefer a name that ends with an -y suffix (the sound should raise the pitch of your voice). That explains why the "Kitty" label is so popular.

Cats don't just hear good, they're chatty animals too. They have more than a hundred vocal sounds, from gentle meows and purrs to angry growls and hisses. And while they'll respond to human speech with a communicative meow, they won't use the sound in the company of their own species. They save that adorable, supper-gaining sound for us. The more you talk to them, the more they'll talk back – a fact that wounds us when Puss gives us the silent treatment.

When she's happy, our cat purrs like a motor boat (making the sound as she breathes in and out, with her mouth shut). While still with their moms, youngsters have been known to purr to let their guardian know they're getting plenty of sustenance. But that soothing sound may also mean that your cat's feeling discomfort – it's a reflex action when they're in pain.

Sight

For a long time, it was believed that cats were color blind (along with dogs, cows and traffic cops who lurk by stop lights). Cats' vision is limited in bright light, they can certainly distinguish blue, green and red. However, accepted wisdom still has it that they have a limited kind of color blindness. To many of them, red looks like green and vice versa.

With peripheral vision that extends their sight from 185 to about 285 degrees degrees and the biggest eyes of all mammals (in proportion to the size of their bodies), it's at night that their hunting instinct really comes into play that they see best – several times better than us. They can see up to a distance of 120 feet (36.6 meters). Some up-close, well lit details are sacrificed, though; an object right in front of them may seem fuzzy, lacking perfect definition.

No carrots required – a cat needs a sixth of the light that we require to see, thanks in part to the *tapetum lucidum*, an extra layer of cells that absorb luminosity. That's why cats' eyes take on a weird shine when they're caught in car headlights.

Don't confuse the *tapetum lucidum* with the haw, a third, full inner eyelid that helps to protect a cat's eyes from getting dry or damaged. If you see your animal's haw, take it to a vet! It's not well!

To kittens, it must feel like they're blind for an eternity – in reality, up to ten days. It might only take two, but whenever their eyes do open, they'll be blue. It takes a few months for their eyes to settle on a final, permanent hue. Green is always a fashionable choice.

Whether they can see after their first week or not, they'll have their mind's eye to keep them entertained. They'll start dreaming at that time.

When you look into a cat's dreamy, bright-colored peepers, you should be able to tell what mood it's in. If it's excited or scared, its pupils will be big and round. If it's angry, they'll be narrower.

If you want to hide something from your moody moggy, one of the best places is right under its nose. In one of Mother Nature's few, strange oversights, it can't see there. If you offer Tiddles a scrap of food and place it directly below its nose, it won't be able to find it.

Taste

It's common knowledge that cats can't taste sweets, but that doesn't seem to stop our own furry comrade Tips from devouring marshmallows. Presumably such knowledge only becomes truly common when shared with the subject of that information.

Despite this perceived lack of taste – their buds are certainly less sophisticated than a human's, numbering a mere 473 compared to our 9000 - cats' visible (and often audible) enjoyment of food has helped build up their reputation as *bon viveurs*, encouraged by their owners. In the US, it's estimated that feline fans spend more than \$4 billion a year on cat food – more than the entire nation spends on baby food. Cats can't complain – their typical meal is full of protein and is the equivalent of five mice.

A cat's sense of taste and smell will work in tandem to build up a complete picture of what they're eating. If they can't smell it or it's too cold, they'll be suspicious.

If they taste something that disagrees with them, they'll remember for several weeks, associating that taste with a food type that's bad for them. As any owner knows, cats can also be very particular about what they eat. For example, one cat might be a chicken fan while another could be more partial to fish. For some salty reason, sardines seem to be a hit across the board.

They certainly have some handy physiological aids to help them in their task. Tiny, backward-pointing tongue barbs or hooks help them to tear up the most tender morsels of food, and also to drink, enabling it to scoop up its grog backwards into its throat.

Confirmed carnivores, they also have sharp teeth for dining and defense. Their 30 teeth consist of four canines (apologies to kitties for the terminology), ten premolars, four molars and twelve incisors. They have baby teeth (or more appropriately, milk teeth), but not for long. After a few months, new incisors push the olds one out. At four to six months, it's the turn of the premolars, molars and canines. By seven months, all their adult teeth are present.

Touch

Cats don't just use their paws to touch their surroundings. They have many other clever devices at their disposal, not least their tongues and whiskers.

Cats have 24 whiskers with four sets on each side of their heads. The top two sets are capable of movement independent from the bottom two, and all are amazingly sensitive. They can be used for measuring distances – a cat can squeeze through an aperture as narrow as its head, since it has no collarbone – and are deft enough to detect a change in air current. Whiskers have been aptly compared to radar, helping cats to gauge their whereabouts.

While their investigative urges are legendary, cats also love to be touched, and not just as a ploy to get your reassuring scent on their fur. Many cats like having their forehead gently stroked in particular.

After they've been stroked, you'll often see cats washing themselves – a task facilitated by their fancy barbed tongues. They'll groom for over five hours a day, a whopping third of their lives – and when you consider that they spend 15 or 16 hours a day sleeping, that doesn't leave much time for anything else.

Some people consider cats to be incredibly clean, while others figure they're just coating themselves in their own spit. They're so obsessed with cleanliness that they'll lose almost as much fluid in their saliva as they do when they pass water. If your cat stops its compulsive grooming, it could be sick again! Take it back to the vet!

A cat's touch can be a nuisance to some, and while bathing the offending animal can temporarily reduce its potential to cause allergic reactions, it's worth looking at the culprit lurking under all that fur. While some experts still insist that the allergies are a result of cat saliva or dander, it's recently been accepted that the sebum a cat secretes – a fatty matter produced by the sebaceous glands – is what leads to the sneezes. Males secrete more of the substance than females.

The good news is that an allergic response to a cat may be a one-off – not all cats may cause the same reaction.

Beyond the occasional anguished bath, it's a great idea to groom your pet. While it is capable of taking care of itself, some extra attention from you will help with your bonding process and keep your cat's fur free of crud and critters.

Conclusion

Cat Sense touches the tip of the iceberg when it comes to the ingenious biological make-up of cats. Built for hunting, they've adapted to a mouse-free domestic life but retain their free spirits and poker-face reactions to our human foibles. They know which side their bread is buttered – there are no cozy laps in the wild.

Of all domesticated animals, cats are the most secretive, living a double life – the cuddly pet and the predator stalking the flower beds. It's only when they bring their prey home for their family (the humans they regard as flawed cats incapable of catching their own food) that we see the darkest results of their covert half-lives.

By understanding how cats work, we can begin to fathom why they act the way they do. We can also communicate with them by watching them, particularly useful if your cat gets sick or sulky.

By studying *Tips*, my own cat, I've been able to marvel at her super-tuned senses and the ways that she uses them. My observations helped me put this book together. I hope that *Cat Sense* will encourage you to look at cats in a new light, and that you've enjoyed reading it as much as I've enjoyed writing it.

About the Author's Cat

Nick Smith's Cat City thrillers are *Milk Treading* and *The Kitty Killer Cult*. His cat, Tips, appears on the cover of Nick's first novel, *Milk Treading*, a bestselling mystery set in a city populated by cats and dogs.

Tips has also appeared on posters, websites, magazine covers and even in a movie-style trailer to promote the Cat City thrillers. She also supplied sound effects for a stage adaptation of *Milk Treading*, performed at the Edinburgh Fringe Festival.

Used to the pampered life of a celebrity animal, she now lives in Charleston, South Carolina in a colonial-style house with a plentiful supply of squirrels to chase round the back yard.

Milk Treading (ISBN 1 84282 037 0) and *The Kitty Killer Cult* (ISBN 1 84282 039 7) are both published by Luath Press.



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