FELINE INTELLIGENCE

By Bernadette E. Kazmarski

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Kublai saunters to the refrigerator, slips a paw under the edge of the door and expertly pulls the door open. Sighing the "there's nothing to eat" sigh common to all refrigerator browsers while scanning the contents, he pulls a container off the shelf, uprights it on the floor, removes the lid with his claws and begins to enjoy his snack. He's mighty surprised when I nearly fly into the kitchen in my "you're in for it now" demeanor—after all, I'm the one he learned it from, and since he and I are best friends, he just figured I'd be fine with it.

A decade ago the world not only thought cats weren't as smart as dogs because they didn't perform agility and follow commands as directed by humans, but that they were largely untrainable. Now we know that cats are highly intelligent, but not in ways that we humans find desirable because feline intelligence is largely tied to their typically solitary nature as both predator and prey and the need to be cautious, observant and self-sufficient, not necessarily turning to rely on pleasing a human. If we understand this essential nature we can use that understanding to do, or not do, many things. We find they can be clicker-trained, like dogs and many other species. And we "catify" our living spaces to suit not only their preferences but also their specific intelligences, we enrich their environment with entertainment and challenges, because keeping them not just physically occupied but intellectually occupied keeps them out of trouble.

Each of us has a tale of a dexterous cat who could open the refrigerator, use the toilet and flush it (or simply flush it for fun as a video that circulated the internet, and a confused owner's water bill, can attest), open doors, turn lights off or on, and even communicate clearly by some means other than an earnest meow, all without any "training". They've figured this out on their own and they perform the actions quite naturally and, what's more, *rationally*, not randomly, meaning there must be some planning behind the action.

But how do they figure it out? And is this a measure of their intelligence?

Multiple Intelligences

Cats have long been considered unintelligent because they don't perform according to either our standards of intelligence or those of the mostly closely associated domestic
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animal, the dog. In the 1980s and 1990s, however, studies of and conclusions about intelligence in general gradually allowed “multiple intelligences”, reported by Howard Gardner, PhD., who included eight standards of intelligence measurement including “spatial”, “interpersonal” and “bodily kinesthetic”.

Hence, just as some humans who didn’t perform to scale now could be found to be quite intelligent when tested and judged by other means, so could felines. One of the world's most noted and celebrated veterinary behaviorists, Dr. Nicholas H. Dodman, BVMS, Diplomate, American College of Veterinary Behaviorists, is a Professor, Section Head and Program Director in the Animal Behavior Department of Clinical Sciences, Tufts' Cummings School of Veterinary Medicine. Dodman suggests that cats “display their brilliance” in two of the eight areas, “bodily-kinetic” and “spatial”.

At that same time a new insight into animals as individuals beyond their usefulness to humans gave us a unique appreciation of a cat’s innate abilities; where animals who performed a task according to a human’s bidding were considered intelligent because they seemed to understand what we needed, now an animal’s individual success in problem solving for its own needs became a standard for intelligence.

Unintelligent, or misunderstood?

First we’ll have an understanding of how cats interact with their world. Temple Grandin, PhD, noted animal behavior scientist, states that animals most likely think in pictures and carry memories through their senses, of things they’ve smelled, heard, seen, tasted and touched, unlike our logical and linear memory.

Cats typically investigate their world with diligence. Move a piece of furniture and most cats will explore it as if it’s new; put them in a new room and they will take the time to methodically view and smell every available inch of it, physically experiencing the room. We can assume they are storing the information for later use.

Cats, being predators and primarily solitary creatures, are intended to take in their surroundings, find and investigate likely areas for prey, find the prey, stalk and kill it without expending too much physical effort. The lack of physical effort part makes us smile as we see ours laze about the house but it’s an important element in understanding their actions—the more they expend, the more they have to hunt. Other predators that roam in packs can work as a team and replace each other as they tire, and they can also catch much larger animals than themselves and all feast together. If a cat spent all day trying to run down a rabbit it would exhaust itself and probably lose the hunt because cats rely on cunning and the element of surprise, and while they can run up and down the stairs and over the couch and across the windowsill three times fast, it’s usually over in a matter of a minutes because they don’t have the endurance.

A-maze-ing

Now put these qualities into the typical test of animal intelligence, the maze. The first time through, dogs want to get the heck out of the maze and back to you and will focus on that, and even with many wrong turns will find their way out as fast as possible; for centuries dogs have been bred to do just this in their traditional "job", following a scent, herding other animals, and even a mutt carries a lineage, so the maze is an ideal method for measuring their intelligence.

Cats, on the other hand, will sit in one spot and observe, rid themselves of a few errant specks of dust while they consider things, then leisurely investigate all the corners and wrong turns. They have no place to be, any corner might contain or lead to prey, and moving too quickly might alert the prey or cause them to miss it, and their natural curiosity may even make the test seem like an adventure. On the other hand, there are scent marks to be investigated, and around that corner may be a predator lying in wait—for them. Caution means survival. After checking for any dangers and easy prey, a rest is in order for the big stalk and chase and for simply getting a sense of the area. In some tests, cats simply have to be removed.

Are they unintelligent for not hurrying through the maze and finding the end? Or do they show intelligence through their caution and inquisitiveness?

Detailed long-term memory

The second time through the maze shows a different result for both animals. A dog sent through the maze later in the day will experience it again as if for the first time, while a cat will, if it so chooses, follow the most direct route to the other end as if it's the path to the kitchen. Studies testing various animals for short- and long-term memory show that a dog's memory, without repeated training and reinforcement of the activity, is only about five minutes, where a cat's averages 16 hours.

Cats on the hunt will often travel quite a distance, stake out a site for hours conserving their energy for the brief chase and kill, then find their way back home without any problem. Their careful study of their surroundings and ability to remember over a period of hours enables them to widen their hunting circle, often needing to also remember the boundaries of other cats' territories and dangers along the way, and their conservation of energy enables them to capture prey without exhausting themselves. Watching a cat about this, even when it's playing in your home, may seem like the cat is unfocused and wastes an awful lot of time, when the whole operation actually takes a lot of attention and planning and is very intentional.

So while all animals have enjoyed the benefits of an enlightened view of each animals' abilities and needs outside their use to us, we also have a new understanding of a cat's instinctual needs and abilities, perfected without any intervention by humans. Cats are judged to have an intelligence near that of a monkey in the animal world, or at about the

level of a two- to three-year-old human—and we know how curious and manipulative a toddler can be!

Cats even form “learning sets”, or a planned sequence of events to attain an end. One study mentions cats who have been trained to move a box on wheels using the new skill to solve another problem—getting right under a treat hanging on a string by moving the box and hopping onto it, something they were not trained to do.

Copycat!

It’s a very appropriate term. Have you ever watched your cat observing your actions, and has he ever then tried to carry them out on his own much like Kublai and the refrigerator? It's thought that cats learn initially by copying what their mother does, even before they can really carry out the action, but it's now thought cats have innate knowledge that is actually refined by observation and practice. In either case, if they are motivated, it often only takes one try to learn something new. If their mother uses the litterbox, there’s no need to train them because they’ve copied her and won’t forget. They will attempt to eat her food even before they can chew it because they’ve seen her at it, and when she brings them prey, whether it’s for real out in the wild or a toy she uses as a substitute, they generally line up to watch what she does and try it the very next chance they get. I would see Kublai keenly watching my actions as I turned the newly-installed knob on the screen door because he had easily negotiated all that came before, see him give it a try and eventually successfully open the door. Practice makes perfect! I get yet another doorknob.

And how many times have you brought home a new toy and demonstrated its use to your cat only to have him enjoy your performance but not seem to understand that he’s supposed to be doing this? He needs his own motivation. Or have you brought home something new and had him immediately figure it out without any instruction even though he’s never seen the like of it before? The toy fits into a behavior pattern he’s already got established and learned with something similar enough.

Cats don’t really seem to have a sense of “family” or “pack” in the sense of “hierarchy” in a multiple-cat household or colony where they would want to model themselves on the leader. They still probably don’t think of us as their mother/teacher if they observe and mimic what we do. Likewise they don’t mimic other cats simply because they are higher on the social scale, it’s because they are motivated by a reward or just by curiosity. Cats have even been known to mimic other animals if they acquire a skill that suits their needs.

Training

Ability to be trained has long been considered a measure of intelligence because it shows some level of memory, often of a complicated sequence of tasks. Animals are best

trained by determining their ability to perform a task and understanding their own motivations to choose a method for rewarding them. For pack or herd animals, often being considered one of the gang is enough to get them to play along with a food treat as a reinforcement, but cats aren't so concerned about this. While it may work with other animals though it's rapidly losing favor, punishment should never be used when training a cat. Those who live with cats who've been abused in some way will attest to a cat's long memory of a bad experience, but their memory is just as long for a good experience, and both must be taken into account when training a cat.

We all know about the can opener and the millions of cats who have seemingly trained themselves after one good experience to come to its call; in this case, the action is natural and they have the motivation—run to the kitchen because there might be food. Other than that, cats can seem difficult to train because they're always looking for the easy way out—they are perfectly capable of jumping through hoops and doing backflips because we see this and more in play depending on the cat, but their instinctive practice of energy conservation leads them to perform only necessary acts unless they have a really good reason to do so. The promise of a "good boy" pat on the head or minor scrap of food may only elicit a sideways glance or no reaction at all.

Animal trainer Gregory Popovich, successful with his own group of rescued cats who literally jump through hoops as well as balance on tightropes and perform other tasks on command will tell you that most people fail because they try to train cats as if they were dogs. Unlike other animals, cats have to be motivated as individuals and carefully studied for things they enjoy doing, and given a task that's already in their repertoire as a cat and as an individual, then be permitted to perform the task in their own way.

About a decade ago Karen Pryor began "clicker training" for cats as well as dogs, and claims success with her carefully-designed program of associating the click first with the receipt of a treat, then the introduction of objects, then finally with certain actions or groups of actions.

Much of this information can be applied to modifying destructive behavior—find the reason why the cat is clawing your chair, then train her out of her need to modify her territory by employing her own needs and intelligence.

Self-recognition

A consciousness of one's physical presence is considered a measure of intelligence, as when children realize that all they see and experience is not a part of themselves or caused by their needs. The jury is out as to whether animals actually realize they have a presence separate from their surroundings, and experiences with cats might show two different conclusions when cats are presented with a mirror. One cat might see the "other cat" in the mirror, try to reach out and touch it in curiosity or aggression only to be met with the mirror, then quickly try to dodge behind the mirror to catch the intruder off-guard, obviously not realizing this is a reflection of itself. Another cat, normally

aggressive with new cats or any cat in general, seeing the "other cat" in the mirror will react with calm regard as if he knows that cat is himself, and darn, he's handsome.

Train your own cat, or just have some fun!

Interacting with your cat is never a bad thing, and after reading some of the studies and articles, you may want to employ the conclusions on your own felines. They may surprise you in their abilities, or they may simply have fun watching you make a fool of yourself in an effort to train them to ask for a treat. Make sure you play safe and fair with your kitty and most of all have fun!

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