

BY SOPHIA YIN, DVM

YOU'VE PROBABLY SEEN IT ON TV

or on YouTube. Case One: A dog lies on the couch chewing a bone. His hind leg starts to twitch repetitively. He tenses up and stares back at it anxiously as though it's an intruder sneaking up on his bone. His raises his lip, he growls. Then blam! He attacks his leg. Canned laughter. \$100,000 prize winner, America's Funniest Home Videos. Case Two: A Bull Terrier spins repetitively in the bathroom and then in the living room. "She loves to spin," states the owner as she encourages the dog to spin more. "She's spun around 40 times here." Case Three: A long shadow of a human with outstretched arms fills empty white cement. In dives an Australian Cattle Dog, attacking the shadow's hand as though it were the hoof of a lazy cow refusing to keep up with the herd.

Amusing? Perhaps. But if you are a veterinarian trained in behavior or an applied animal behaviorist, these descriptions fire up the warning sirens as they conjure images of similar cases in much more serious form.

"I had one client who had a Bull Terrier who would spin a little," says Dr. Alice Moon-Fanelli, a clinical assistant professor at Tufts Cummings School of Veterinary Medicine. "The owner could easily stop the behavior by calling the dog and then redirecting him to a more appropriate behavior, so she didn't really think much about it. She just let the dog spin unless it bothered her." Unfortunately, when this owner went back to work after a number of years of being home, the dog started spinning more and more, and she could no longer stop him. "By this time, he was spinning sev-

eral hours a day," reports Moon-Fanelli. "He would spin until he collapsed. Then one night, she came home and the dog was a bleeding mess because he had chewed and ripped off parts of his tail."

That is just one of many cases Moon-Fanelli has had. One of her earlier cases was even worse. "I saw a dog named Jake belonging to a young couple in New York City. The dog was spinning nonstop for 80 percent of his waking hours. His pads were raw and he was a rack of bones from not eating and then burning calories off. He would get aggressive if you tried to restrain him. They couldn't even take him for walks because he would spin. He wasn't a companion anymore."

She isn't the only behaviorist who has seen such cases.

Dr. Mami Irimajiri, a lecturer at Kitasato University in Japan who studied



the effects of drug therapy in treating these disorders while she was earning her PhD at Purdue University, describes one of her cases: "I had an interesting cat patient during my veterinary behavior residency at the University of Georgia. This cat would attack her tail whenever she saw it moving. She was about one year old and had been doing this for about four weeks when she presented to us. She would growl and then attack her tail and bite it. Then she would scream from the pain and run away."

Dr. Andrew Luescher, director of Purdue's Animal Behavior Clinic, describes yet another case. "I had one dog that fixated on objects to the point that he could not drink anymore." Irimajiri, a former graduate student of Luescher's, elaborates, "The dog would jump into any object he saw. He would see his food

and then try to pounce on it or see his water bowl and try to pounce into it. The owner had to feed the dog by hand and give him water by water bottle."

Dr. Nicholas Dodman, director of the Tufts University Animal Behavior Clinic, describes a similar case. "I saw one dog that was obsessed about his tin bowl. He would only eat if the little bowl was right next to his food. If you took it away he would not eat. It turns out he used to be a rock chewer and then moved to a new house with no rocks. The owners gave him a tin bowl to replace his rocks. The dog was so obsessed with the bowl that he would chew on the bowl whenever he wasn't eating out of it."

Some people might consider similar behavior in their own pets to be simply odd behaviors-stupid pet tricks, if you will. But if the signs were to progress to

the life-disrupting or life-threatening stages described previously, a mental health disorder might pop up on the owner's radar. In fact, in each of the previously described cases, the dogs were diagnosed with Canine Compulsive Disorder (CCD).

What Is CCD?

Compulsive disorders are characterized by repetitive or sustained behaviors performed out of context to the point that they seem abnormal. They are performed for excessive durations and can lead to physical injury. Moon-Fanelli observes that, "These behaviors are derivations of hard-wired behaviors necessary for survival, such as eating and grooming." For instance, tail chasing or spinning, as well as cases where dogs chase lights or shadows, are forms of predatory behavior. Flank-sucking in Dobermans, during which the dog turns around and grabs and sucks on her flank, may be considered a form of eating or ingestive behavior. These dogs occasionally ingest blankets that their owners provide for them to suck on. Acral lick dermatitis, in which dogs spend hours licking the wrist area of their front legs, can be a form of over-grooming.

Unlike the repetitive spinning or pacing one might see in a zoo animal living in boring environments—those animals repeat the same movements over and over-with compulsive behaviors, it's the goal that matters. That is, in some cases, compulsive spinners may spin in more than one direction, compulsive pacers wander around the house rather than in an unerring path, and light- or shadow-chasers follow the light or shadows rather than a particular footfall pattern. Some cases can be difficult to distinguish from stereotypes, but regardless of the form the compulsive disorder takes, the behaviors are virtually out of the animal's control. Says Dodman, "It's like a continuous loop circuit, and the behaviors are constantly recycling and repeated."

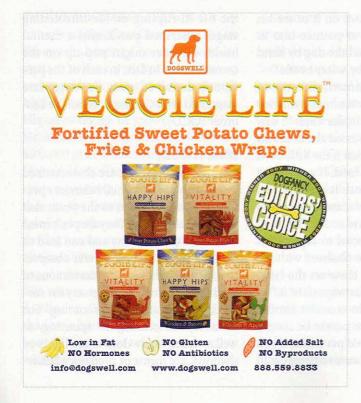
Compulsive Disorder in Dogs vs. OCD in Humans

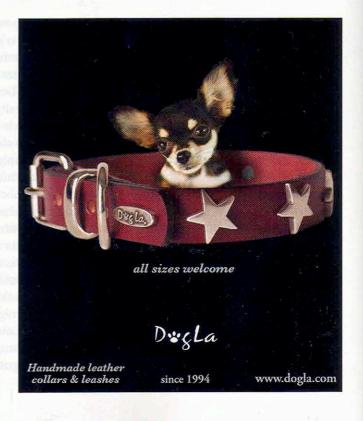
As suggested, compulsive disorders in animals are similar in appearance to obsessive-compulsive disorders (OCD) in humans; however, because animals cannot express their internal states in words, we don't know whether they obsess. In humans, the behavior is driven by unreasonable obsessions. For instance, OCD sufferers may feel overly concerned for their safety or hygiene. The obsessions cause anxiety, which causes the sufferer to engage in compulsions in an attempt to alleviate the distress brought on by the obsession. Performing the compulsions, such as repeatedly checking that all of the doors are locked or repeatedly showering or hand-washing, provides relief. This relief is short-lived, though, and the compulsive symptoms actually worsen.

How does this differ in animals? According to Luescher, the same area of the brain may be affected in both dogs and people. People with OCD have changes in the prefrontal cortex of the brain, the area that animals use to reason or to interpret their environment. Luescher has performed brain-imaging

studies on a Bull Terrier with compulsive fixation on objects and found that this dog's prefrontal cortex was involved. According to Luescher, such findings don't mean that the conditions are completely homologous; even if human OCD patients and canine compulsive disorder patients are physiologically similar, there is a difference. "People with OCD suffer partly because they know it does not make sense," he states. "They feel ashamed and try to hide their symptoms. Dogs, on the other hand, perform their behaviors openly." So they are not ashamed about the behavior; however, they may be anxious or distraught while they are performing the behavior.

Despite the differences, compulsive behaviors in humans and animals are related in that they are anxiety-based, and some animals carry a genetic predisposition. As Moon-Fanelli, whose research focuses on the inheritance of compulsive disorders in Bull Terriers, notes, "We think compulsive disorders are hereditary because we see some of these compulsive behaviors more frequently and almost exclusively in certain breeds." For instance, German Shepherds, Australian Cattle Dogs and Bull





Terriers spin or tail-chase; Wirehaired Terriers tend to shadow- or light-chase; and Dobermans flank-suck or blanketsuck. Additionally, Miniature Schnauzers compulsively check their rear ends. They may walk a few steps and then stop and look at their hind end, or get up and check the area where they were sitting or sniff it.

Thus far, research by Dodman and Moon-Fanelli strongly suggests that compulsive spinning is hereditary in Bull Terriers. Dodman and Moon-Fanelli's work has even shown that the trait occurs more in some Bull Terrier families than others and is expressed in dogs who have never been with another tail-chasing dog, which suggests that the behavior is inherent, not learned.

Luckily, having a hereditary predisposition does not necessarily mean that the disorder will show up. Environmental stress increases the odds of a compulsive disorder being expressed, and it may wax and wane based on stress, which can take many forms. Some dogs have a strong genetic predisposition but no stressful event is seen prior to onset, whereas with others a clearly stressful event is associated with the onset.

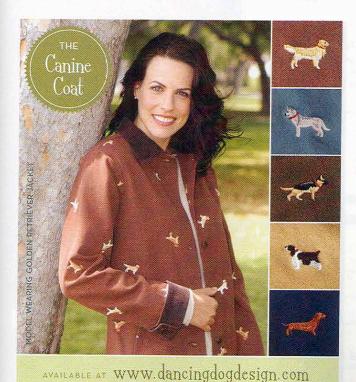
Luescher gives an example. "I had one case, a 10-month-old German Shepherd puppy who used to show mild aggression to the owner. A traditional force-based trainer showed the owner how to give a 'proper' choke chain correction. The puppy temporarily acted less aggressive, but then two days later, he suddenly started chasing his tail for many hours a day." The stress of the force-based training had precipitated the behavior.

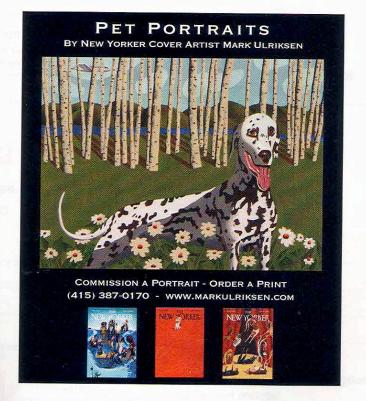
In other cases, the stress may involve kenneling, traveling, a change in the owner's schedule or the addition of a new person to the household, Moon-Fanelli considers that, for dogs with a strong genetic component, "the stress may be relatively mild. These dogs can't cope with things that a normal dog can handle." She has seen Bull Terriers who spontaneously started chasing the sound of running water or microwave bellsthe owner can't wash dishes, flush the toilet or use the microwave because these sounds trigger the dog's spinning.

In some cases, the condition can progress quickly to the point where it completely disrupts the human-pet bond. Moon-Fanelli describes such a situation. "I had one case, a Bull Terrier named

Fletcher, who began spinning suddenly at five months without an identifiable trigger. The first day, they thought it was puppy tail-chasing. Then the next day, he chased for an hour but could easily be distracted. Then, coinciding with this, they had to leave him with a pet sitter for the weekend. When they came back, he was spinning nonstop." The owner, who was a veterinarian, tried temporary treatment with sedatives in the hopes of immediately controlling the intense spinning. This made the dog wobbly but didn't stop his spinning. The usual treatments for compulsive disorders, such as Prozac, a serotonin re-uptake inhibitor, combined with environmental enrichment, also had no effect. Says Moon-Fanelli, "They couldn't get it under control so they had to euthanize. It was distressing to them and to the other dogs in the household. He did not have any quality of life."

Most cases don't progress this quickly. Rather, they may have a long history of being rewarded. Says Luescher, "A common case is that people start playing with lasers or flashlights and the dog chases the light. This is normal. But then, as the owners encourage the dog, it gets





out of hand and the dog starts to go after lights reflecting off surfaces. So the behavior is no longer context-specific."

Says Moon-Fanelli, "With Doberman flank-sucking, most owners think it's cute and give their dogs blankets." The dogs ingest little portions of blanket regularly. It's not irritating like spinning, and although the duration may be long, it occurs at night or other times when the dog is resting so it doesn't noticeably disrupt the dog's normal activity. As a result, owners equate it with thumb-sucking. Adds Fanelli, "Because it's nondisruptive, owners don't care until the dog ingests her blanket and has to have surgery."

Diagnosis and Treatment

First, a veterinarian is needed to rule out potential medical look-alikes. For instance, some dogs have a neurological problem instead of a compulsive disorder. "We've had a number of cases where the dog that has been circling has a brain tumor diagnosed on MRI rather the compulsive disorder," states Luescher. Similarly, Luescher recalls a horse with repetitive leg movements like those of the *America's Funniest Home Videos* dog. "It turned out to be a partial seizure due

to a brain tumor." He adds, "In another case, a dog presented with possible compulsive disorder, and it was actually due to *Ehrlichia*, an infectious agent that attacks the nervous system."

Other instances can be related to dermatologic conditions. Dodman in particular recalls one case. "We had a Golden Retriever with a lick granuloma... not responding to medications for compulsive disorders. A closer dermatologic examination and blood work revealed that [the dog] had a deep-seated skin infection in just that one region, plus low thyroid levels. Treatment with antibiotics and thyroid medications cured the dog."

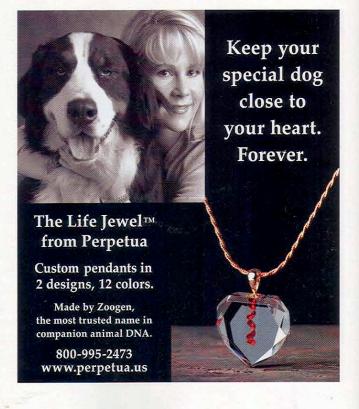
Once other causes are ruled out, compulsive disorders can often be treated successfully with a combination of drug therapy (Reconcile* or Clomicalm*) and behavior modification. Up to 70 percent of patients do well on the combination of drug therapy and behavior modification, says Luescher. "These dogs have far fewer compulsive bouts, and when they do have the bouts, they can easily be redirected toward other activities, and will stay with these new activities." He adds, "Some are treated successfully with

behavior modification alone, too. It usually takes longer, though."

Despite the success with drug therapy, all of those interviewed emphasized the need for concomitant behavioral modification. As Luescher observes, "Drug therapy alone does not make sense, since the environmental cause is still there." Moon-Fanelli adds, "If the cause is conflict or stress, then even with the neurochemistry changes brought about by medications, you need to teach the animal to cope with the stress."

Behavior modification involves a combination of tactics: maintaining a predictable schedule, increasing exercise, interrupting the compulsive behavior and redirecting it by rewarding alternative relaxed behaviors (such as performing tricks), and improving the bond by participating in reward-based sports such as agility. Occasionally, a complete change of environment can have a dramatic effect. With Jake, the New York City dog who spun so much he couldn't eat or drink, "I treated him with medications for years," says Dodman. "It only got better when the couple split up and the dog was taken to live on a farm upstate." The new owners were a couple with children,





and they were able to get Jake's attention and redirect his behavior.

All four behaviorists interviewed warned strongly against punishment, which is sometimes recommended by traditional dog trainers such as Cesar Millan on Dog Whisperer. Says Dodman, "I saw Cesar Millan put a choke chain collar on a dog with compulsive disorder and pop it. This is about as sophisticated as electrifying the taps [faucets] with an OCD hand-washer. This would stop the behavior, but the anxiety would still be there and could erupt in a more anxious behavior."

Moon-Fanelli gives an example of one such redirection of anxiety. "I had a client with a spinning Bull Terrier and we were working on a treatment plan. The owner called up and said she had enlisted the help of a trainer who recommended a shock collar. She happily reported the shock collar had worked. The dog was no longer spinning, but I could hear her yelling to her dog, 'Suzie, stop that.' When I asked what Suzie was doing, she said that Suzie was pacing around the kitchen." The consequence, as Moon-Fanelli points out, was that "the tail spinning had evolved into pacing."

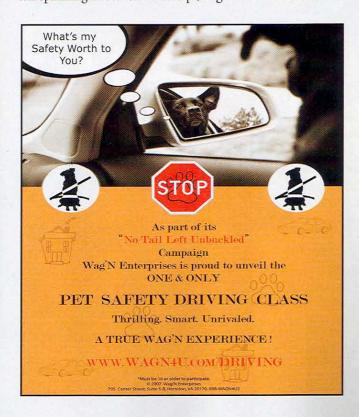
Luescher also recalls a particular Miniature Schnauzer who was both licking an inner thigh and staring at the ceiling. Owner punishment precipitated the behavior. The added difficulty with punishment is that when owners are inconsistent, it adds even more stress than when they are consistent. Says Luescher, "If you don't have consistent rules, the dog can never figure the rules out. Everyone wants to be successful and control life, to bring about good things and avoid bad things. If they don't have this ability, they can go into a state of learned helplessness."

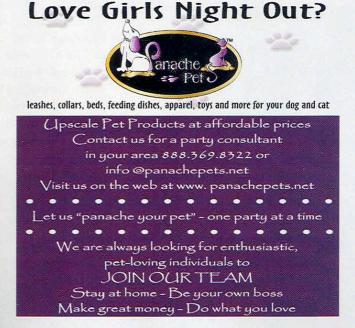
When Should You Be Concerned About Your Dog's Behavior?

Both Moon-Fanelli and Luescher stress that dogs who exhibit spinning or other compulsive behaviors for short periods of time aren't necessarily abnormal. But if a behavior such as spinning starts occurring outside of its original context, or for more than a minute per bout, or 3 to 10 minutes per day, then the dog should be evaluated for a compulsive disorder. This is especially so if the behavior occurs out of sight of the owner. If the behavior occurs primarily in the owner's presence, it may be an attentionseeking activity rather than a compulsive disorder.

Unfortunately, most people wait until the behavior significantly disrupts family life-when the dog chases lights for hours, spins and can't be interrupted, or chews his tail until he has a wound. This delay makes the disorder much more difficult and sometimes impossible to treat successfully. Consequently, it is better to err on the side of caution and consult with a veterinary behaviorist or applied animal behaviorist early on to determine whether your pet has a compulsive disorder and to rule out other disorders. An early diagnosis can prevent the owner from accidentally strengthening the behavior by rewarding it with attention or increasing the anxiety through punishment. Additionally, it's best not to encourage repetitive spinning or chasing of laser-lights and shadows—the potential long-term consequences outweigh the momentary amusement. 13

Sophia Yin, DVM, graduated from the UC Davis School of Veterinary Medicine and has a master's degree in animal behavior. An award-winning columnist and author, she currently sees behavior cases in Davis and San Francisco.





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