

## The New York Times

---

# The Empathetic Dog

By **Emilie Le Beau Lucchesi**

June 4, 2017

Benjamin Stepp, an Iraq war veteran, sat in his graduate school course trying to focus on the lecture. Neither his classmates nor his professor knew he was silently seething.

But his service dog, Arleigh, did. She sensed his agitation and “put herself in my lap,” said Mr. Stepp, 37, of Holly Springs, Miss. “I realized I needed to get out of class. We went outside, I calmed down. We breathed.”

During his two deployments to Iraq, Mr. Stepp endured a traumatic brain injury and multiple surgeries on his ankle, and most days he suffers excruciating pain in his legs and lower back. He says he also returned from the war with a lot of anger, which wells up at unexpected times.

“Anger kept us alive overseas,” Mr. Stepp said. “You learn that anger keeps you alive.”

Now that he is back, though, that anger no longer serves a useful purpose. And Arleigh, a retriever mix who came to Mr. Stepp from K9s For Warriors, a nonprofit organization that trains service dogs, has been helping him to manage it. The dog senses when his agitation and anxiety begin rising, and sends him signals to begin the controlled breathing and other exercises that help to calm him down.

Pet owners and trainers have long been aware of a dog’s ability to sense a human’s emotions. In the last 10 years, researchers, too, have begun to explore more deeply the web of emotions, both positive and negative, that can spread between people and animals, said Natalia Albuquerque, an ethologist who studies animal cognition at the University of São Paulo in Brazil and the University of Lincoln in England.

The spread of emotions between animals and people, or between animals — what researchers refer to as emotional contagion — is an emerging field of science. But “there are still many unanswered questions we need to address,” Ms. Albuquerque said.

---

**You have 4 free articles remaining.  
Subscribe to The Times**

---

Studies have shown, for example, that piglets appear to become stressed by seeing and hearing other piglets that have been placed in restraints. Horses, too, appear to respond differently to people who smile or snarl; the horses responded to a snarling facial expression with an increased heart rate.

Other research found that dogs and people had a similar response to hearing the sound of a human baby crying. In the study, researchers exposed 75 pet dogs and 74 people to one of three distinct sounds: a baby crying, a baby babbling and radio static. Each sound was played for more than 10 minutes, and then researchers checked their salivary cortisol levels, an indicator of stress.

Neither the humans nor the dogs showed much response in cortisol levels to the sound of a baby babbling. The radio static also did not alter cortisol levels, though the humans described it as “unpleasant” and the dogs’ body language, which included lowered heads, flattened ears and lowered tails, suggested that it might have caused some distress.

But the sound of a baby crying produced a drastic response. Cortisol levels spiked in both people and dogs. The dogs responded with submissive behaviors like tucking their tails, a reaction that Ted Ruffman, a study author and professor of psychology at the University of Otago in New Zealand, described as low-level empathy.

“Emotional contagion is a primitive form of empathy,” Dr. Ruffman said. “It is plausible that when breeding dogs, humans would have selected for qualities that facilitated emotional links between dogs and humans.”

Dogs may even show empathy-like behaviors to other dogs, especially dogs they know. In one recent study, 16 pairs of dogs, each of which had lived in the same household together for at least a year, were brought to a testing center in Vienna. One dog from each pair was led into another room. The remaining dog then listened to an audio recording of a dog whining, a sign of canine stress. The whine they heard was a recording of either an unfamiliar dog whining or their partner whining. The dogs were then immediately reunited.

The dogs showed increased signs of stress, including a higher cortisol level, after hearing the sound of either their partner whining or the unfamiliar dog whining. But cortisol levels were higher when they heard the sound of their partner whining.

When dogs heard the sound of their partner whining, they also displayed heightened greeting behaviors once they were reunited with those partners, compared with when they had heard an unfamiliar whine. The authors concluded that the dogs had demonstrated an understanding of their partners’ stress level.

This ability of dogs to sense and respond to emotions has been put to work for veterans like Mr. Stepp who are suffering from post-traumatic stress disorder. After he brought Arleigh home from the K9s For Warriors training program in 2015, he said that they bonded quickly and that she

immediately began distracting him when she sensed his anger spiraling out of control.

“It’s not anger like I’m exploding,” Mr. Stepp said. “It’s more inward, and a lot of people don’t see it.”

The distraction is a process. Arleigh might, for example, sense that Mr. Stepp is in pain and beginning to feel agitated and start by putting her paw on his foot. If he doesn’t respond, Mr. Stepp said, she’ll put her head in his lap. If he is still not responding, she will stand and put her paws on his shoulders.

Mr. Stepp will then remove himself from the stressful situation and practice techniques like mindful breathing, a form of meditation, to calm himself down. Arleigh will continue to intervene until she senses his negative emotions have dissipated.

After more than two years with Arleigh, Mr. Stepp said, he gets angry less often, and he is less dependent on medications to relieve his pain and anxiety. “She has brought me a long way,” he said.

Better understanding of the emotional exchanges that can occur between animals and their owners can help in training dogs for service work as well, said Brad Hibbard, the director of training for the Guide Dog Foundation for the Blind and America’s VetDogs, two organizations that provide trained guide and service dogs at no cost to clients in need. “For us, it’s an everyday part of training,” he said.

Guide dogs for blind and visually impaired people, for example, need to be confident in order to successfully lead their handler, Mr. Hibbard said. When a handler is anxious or upset, the guide dog can pick up on it and become distracted.

“I’ve seen an emotion move from the handler straight down the leash to the dog,” Mr. Hibbard said.

As part of the training process, he now makes sure handlers are taught ways to help contain strong emotions, so that the animal does not become dangerously distracted. If a handler is in an upsetting situation, he might instruct them to stop whatever they are doing, sit down and distract themselves by petting the dog until they are feeling more relaxed.

“At times,” Mr. Hibbard said, for the sake of your dog, “you have to put on a brave face.”

A version of this article appears in print on June 10, 2017, on Page F5 of the New York edition with the headline: The Empathetic Dog