



Resilience Conditioning in Shelter Dogs

Building Bounce Back for Life in the Real World

By Devon Hubbard Sorlie, COTD editor

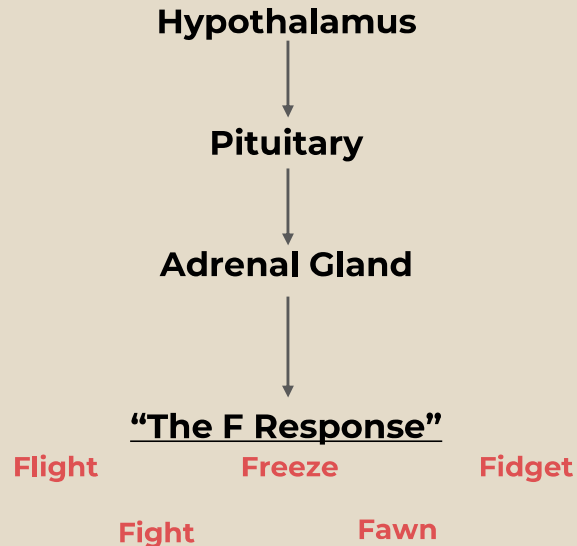
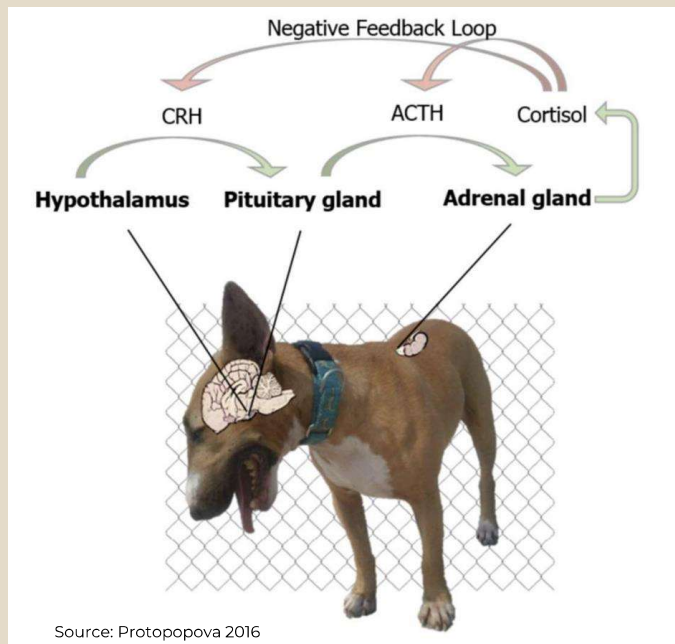
For trainers who devote their time at shelters, they witness these all-too-familiar scenes: A dog crammed in the corner of its kennel ignoring those walking around, or the dog who lunges and barks constantly at the people and dogs walking past the kennel. Neither behavior -- desperate or disengaged -- are likely to get these dogs adopted. And both behaviors are ways dogs attempt to deal with the stress of being in the shelter environment. So what can be done for these dogs? For one trainer, he believes the key is teaching these dogs resilience, which is the ability to recover from stress and resist the negative effects of stress.

Ferdie Yau, MA, CPDT-KA, offered a session, “Resilience Conditioning in Shelter Dogs: Building Bounce Back for Life in the Real World,” on that subject at the 2023 APDT/CAPDT conference in Covington, Kentucky. Ferdie got his master’s degree in conservation biology at Columbia University. His thesis

research had him studying jaguars in Belize. Upon graduation, he worked as an ecologist in New York City, but trained dogs on the side to help pay off his student loans. By 2009, Ferdie founded Sits & Wiggles Dog Training, LLC and earned his CPDT-KA in 2010. By 2013, he was training dogs full-time. Ferdie is now the director of Shelter and Community Outreach with Behavior Vets New York. Ferdie is also the staff trainer at the Humane Society of Westchester, New York, and has conducted workshops for CATCH Canine Trainers Academy.

Dogs weren’t Ferdie’s first choice of animal to train at the beginning of his career — he planned to become a wildlife biologist. He tracked urban coyotes, restored native riparian forests, built oyster reefs, and installed fish ladders on the Bronx River. But as an intern in the Animal Department at the Central Park Zoo in New York City in 2002, Ferdie worked with an

Stress Response Cycle & HPA Axis



Slide from Ferdie Yau's presentation at the 2023 APDT/CAPDT conference in Covington, Kentucky.

elderly female California sea lion named Seaweed. “I had never thought about becoming a professional animal trainer before that experience, but I instantly fell in love with the interactions and contact I had with Seaweed. I continued to shadow and learn from the more experienced trainers at the zoo. Several months later, I was promoted to a full-time zookeeper position,” he said in a 2022 article for the Chronicle of the Dog. After being hired at CPZ, his next animal was a polar bear named Gus, who gained notoriety in the 1990s due to his incessant back-and-forth swimming for hours in his pool. Ferdie co-developed a polar bear training and enrichment program to reduce Gus’ obsessive behavior. The success of that program was featured at the 2005 International Conference on Environmental Enrichment.

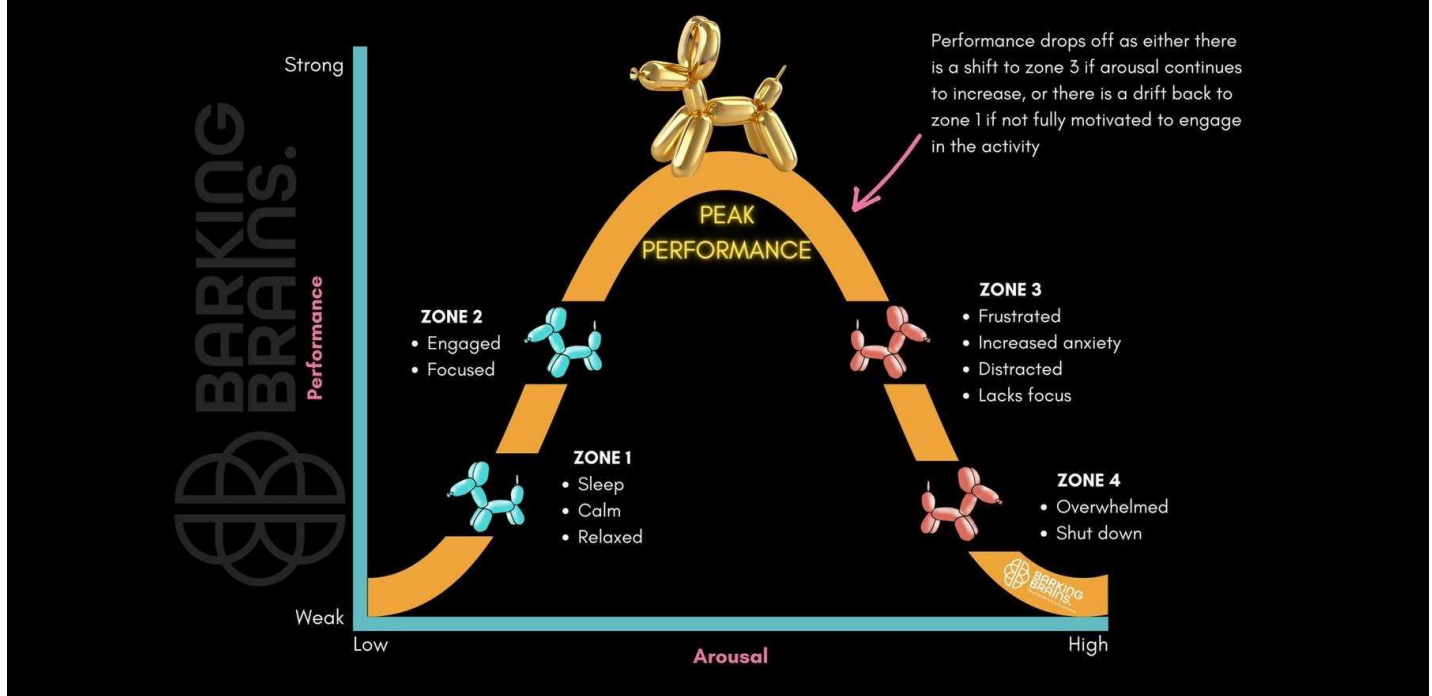
“Training to me was never about commands or control over another animal,” Ferdie said. “Rather it was about building trust and helping these animals cope with whatever crazy and unnatural situation we are putting them in.” Part of that training was desensitizing Gus to getting poked by a needle during routine veterinary care. Gus was trained to put his rump and flank up again the bars of his pen. As Ferdie “targeted” his nose, he used his other hand to simulate the poke. Training went well until Ferdie poked him a bit too hard and Gus let him know with a roar and a right hook to the pen bars. “I literally poked the bear,” Ferdie quipped, while adding that was the fastest he ever ended a training session – and the most frightening.

“We’re dealing with things with our dogs and they are having a stressful reaction, and people may say they’re being bad,” Ferdie said. “I really want people to get the message that there is no bad behavior – these are just dogs being dogs and we have got to help them cope and deal with the real world. We have got to stop looking at them as furry humans with morals and ethics and respect them as canine familiaris – a dog closely related to wolves and coyotes.”

In his talk about resilience, Ferdie explained the stress response cycle in the HPA (Hypothalamus, Pituitary and Adrenal glands) axis (Fig. 1, above). “The increase in HPA activity leads to the release of cortisone and the stress hormone, as well as other hormones,” Ferdie said. “It activates the sympathetic nervous system and this is when you start to get the increase in respiration rate, heart rate, more blood goes to the muscles, the pupils dilate and the eyes are primed for improved far vision because they need to get away from predators,” he said.

The stress response cycle in the HPA axis is responsible for triggering the “F” responses -- flight, fight, freeze, fawn or fidget. “You will typically see this in dogs when they are more stressed. Once that stimulus is successfully dealt with or passes, it helps animals survive danger, but an increase in HPA activity is also needed to perform everyday activities, such as caring for young, foraging for food, for communication and play. The parasympathetic nervous system is responsible for rest, relax and digest functions within the body as it turns it back to the HPA axis baseline,” Ferdie said.

Yerkes Dodson Law



Slide from Ferdie Yau's presentation at the 2023 APDT/CAPDT conference in Covington, Kentucky.

When the survival mechanism is constantly activated, it impairs health and leads to alterations in mood, emotionality, and maladaptive behaviors. “And we all know in a shelter settling that it is virtually impossible to move all the stressors out of that environment. So, for many dogs in the shelter, we know their HBA axis is probably constantly activated, without the sufficient time needed for recovery to return to the HPA baseline. So the cumulative effect of insufficient time to reach a baseline before the next stressor adds to stress-stacking that never ends for these animals. That is why we can see a huge behavior change once the animal is actually out of the shelter because they may be getting REM sleep.”

So why do some dogs adapt to the stresses in a shelter and others don't? “That's the question here, right? Ultimately, how the individual dog responds to the environment is really a result of genetics, epigenetics (behaviors/environment that cause changes that affect the way genes work) and learning history,” Ferdie pointed out (Fig. 2, above).

Both mental arousal and stress are needed to perform activities, Ferdie explained. According to the Yerkes Dodson Law, Zone 1 is sleep, calm, relaxed with low arousal and weak performance; Zone 2 is engaged and focused with moderate arousal and improved performance as it heads toward peak performance capabilities; Zone 3 is where high arousal begins to affect performance characterized by frustration, increased anxiety,

distraction and lack of focus and Zone 4 is the highest arousal point where the dog is overwhelmed and shuts down with little to no performance. “It's important to understand an animal's optimum arousal level for maximizing their performance. As a practitioner, you want to carefully adjust stimulation and how they're stimulated and you want to monitor the responses so you as a trainer can achieve the right balance, promote motivation and engagement and have more successful training outcomes. The key takeaway of the Yerkes Dodson Law is that achieving the optimal level of arousal is essential for maximizing performance in animal training and behavior modification.”

Once the whys were explained, Ferdie launched into the basics of what resilience conditioning is. “If we want our animals to be at their best to perform species-appropriate behaviors and to have a positive outlook and have positive outcomes, we are going to be thinking about resilience conditioning. Studies done on both animals and humans suggest that fast activation and efficient termination of the stress response are associated with resilience.” Resilience conditioning can enhance the physiological ability to adapt to stress. “With behavior modification training, we may look at the degree of behavior change to access effectiveness. But the goal of resilience conditioning is not behavioral change, but rather to enhance their ability to recover from an adapt to stress. So when we talk about resilience conditioning, it's not the same as operant or classical conditioning. Think of it as more a physical conditioning where you go to the gym and you work out. There

“I think good training shouldn’t look like training. You should look like you are having a great time with the animal.” – Ferdie Yau

are various activities and exercises designed to promote resilience. So when you work out at the gym you’re going to stretch out some of those muscles, strain some of those muscles and then give them a period of rest to let those muscles recover, which makes them a little stronger. And stronger muscles can help you resist injuries a little better when you’re in better physical condition. And likewise, you can engage in relaxation activities, such as meditation, yoga, nature walks, singing, dancing, whatever helps you get rid of that stress. And over time, it improves your resilience through changes in your neurobiology. While exercises and activities are relatively easy to teach others, the most important skill to have is understanding body language and I really think that is something anyone can improve through study.”

Ferdie said many shelters are limited with the ability to directly treat behavior issues, but indirectly, can treat fear and anxiety by building resilience without needing to expose an animal to the triggers. He told a story about a dog named Chewy, an adolescent dog like many who fill shelters. “What we are learning is that new neurons develop during adolescent is almost exclusively for social behavior and stress management. The new neurons are constantly learning how to deal with stress. So really, the adolescent period is more of an opportunity than we previously thought. It’s really critical that we give adolescent dogs or other animals good quality experiences and interactions at that stage of life.”

Trainers can do that by using the Resilience Rainbow Framework, developed by Ferdie’s colleagues Kathy Murphy, BVetMEd, DPhil, CVA, CLAS, MRCVS, and Bobbie Bhambree, CDBC, CPDT-KA, at Behavior Vets. These conditioning exercises are used in behavior modification plans for shelter dogs. These exercises and activities may also be taught to adopters so they, too, will have the tools to assist their dogs with stressors post-adoption. The Resilience Rainbow features seven domains:

1. Predictability
2. Decompression
3. Completing the stress cycle
4. Mental and physical well-being
5. Safety and security
6. Social support and
7. Agency

The Resilience Rainbow will complement the work already being taught by trainers in shelters. “I will say it’s maybe a little bit different approach to training than maybe a lot of you are used to, but I love doing it because it’s fun,” he said. “And it can literally save

lives.” Ferdie said he first heard about resilience in animals from Dr. Patricia McConnell when in 2015 she created a model developing resilience that “really resonated with my approach to training.”

This framework—using the colors of the rainbow because they signal hope and are inclusive — is really founded on cross-disciplinary, scientific principles. “Many of you may have already been building resilience in animals in your own ways. Maybe you’ve had an instinct for it. Maybe you learned through cold hard experience. So what’s new here is, we are presenting your framework to keep these concepts front and center while identifying suitable activities and exercises that can help you develop your behavior plans. The framework is intended to be used alongside — not instead — of other methods of training or behavior modification.”

Predictability allows an individual to make an informed choice to alter the impact of an event. But predictability isn’t everything,” Ferdie said. “You have to have a balance because if you have too much predictability, you risk boredom. You need to have some variation. Routines are important, but don’t be too rigid with them. Even in a shelter setting, there’s already a natural routine in the day. Shelter workers come in, clean the kennels, get food prepared and then maybe take the dogs out for walks during the midway, and then at the end of the day, it’s time to clean those kennels and feed the animals ago.”

Predictability also includes social rituals and reinforcement strategies, such as being clear and consistent with cues to avoid ambiguity, he stated. “You have to be consistent in how you interact when you’re working with an animal. Ferdie said when he takes a dog out for a walk, field trip or play, he does some training and play. “Then I’ll give him some enrichment in the kennel when I put him back in, and that’s to help him complete that stress response cycle. Reward experience is known to have an important factor in resilience. So they need to know what works in their life and what doesn’t.”

Ferdie pointed out pattern games, which are predictable and repeatable, are helpful. He recommended Leslie McDevitt’s book “Control Unleashed.” The games can help create predictability in an unpredictable world when animals are out in other environments. One he calls “Decaf” LATTE (Look At That Then Enrichment). “Many trainers may already use the “Look At That” training, which has the dog “look at that,” usually a mark or trigger, and then a treat. For the Café LATTE version, it’s less about looking at the trigger and more about looking at the trainer/volunteer to signal engagement,” he said. To accomplish this training, Ferdie sets up several enrichment stations (similar to snuffle-mats) in a loop. When the dog looks up at him to indicate he’s ready, Ferdie slips some

treats into the next station. Even if a shelter doesn't have the space to set up a Café LATTE loop, it can be done on a sidewalk and volunteers/staff walking dogs can bring treats to place in the stations as they go out and come back. "It can help the dogs when they're coming out hot from the kennels and they are pulling hard. They're not engaged with the handler. This can help bring them down a little bit, and then they can go on a walk and when you come back, you do it again. So just set up the stations and then take the dogs out and just run them through all of the stations."

He also mentioned a very simple pattern game of counting out loud 1-2-3 and then give the dog a treat. "Practicing pattern games builds and strengthens new neurological pathways associated with the emotional responses and behaviors we are looking for. When these pathways are strengthened, it will be easier for the pup to stay calm when exposed to triggering situations. Or for them to recover from being triggered after they are stressed. And because of the way the brain is wired, the predictability of pattern games helps push the triggering stimuli into the background of the brain." It's like using music to break a child out of a meltdown over not getting ice cream at 9 in the morning by singing a silly children's song, he explained.

Decompression is a general process of reducing the dog's mental stress. Studies have shown evidence that sniffing may promote optimism; sniffing can lower the heart rate and decrease stress. And detecting and processing smells is enriching and energy intensive. Ferdie showed a video of a dog sniffing and how its pulse rate drops

while sniffing even while on a walk. "Field studies such as these gives trainers more tools in the toolbox because as technology advances, we're able to see what's going on under the skin. It's giving us a whole new understanding of exactly what's happening," he said.

Other ways to promote decompression are relaxation exercises. Ferdie recommends three books: Nan Arthur's "Relax on Mat"; Karen Overall's "Protocol for Relaxation," and Suzanne Clothier's "Really Real Relaxation." "I like to think of it as basically just world watching. Hey, lie down, chill out with me. Watch the world. You don't need to do anything to act on it. It's not an obedience down. What you are really looking for is a decrease in those "F" responses and an increase in the relaxed, rest and digest functions."

Ferdie mentioned a case involving Hank, an 8-year-old Hound found chained to a tree in rural Kentucky. He was brought to a New Rochelle shelter in New York. For months, whenever he left his kennel, he would just stand and stare at the door. If he was in the outdoor pen, he would stand and stare at the gate, completely disengaged from his handlers. He always stayed in the outside portion of his indoor/outdoor kennel, to the point where someone would have to go inside, crawl through the guillotine door and pull him back into his kennel because he wouldn't come inside for food. Ferdie decided to sit with Hank on the outside part of the kennel, which faces a highway so cars are going by all the time. It was then Ferdie noticed with every door closing, or every metal bowl clanging on the floor, Hank flinched. "He was so shut down



Ferdie Yau gives his 2023 conference session Resilience Conditioning in Shelter Dogs (Photo by Petco Puparazzi).

A Framework for Resilience Conditioning: The 7 Domains

Predictability

Decompression

Completing the Stress Cycle

Mental & Physical Well-Being

Safety & Security

Social Support

Agency



Slide from Ferdie Yau's presentation at the 2023 APDT/CAPDT conference in Covington, Kentucky.

when we took him out that he didn't even flinch. He didn't even show any avoidance other than just pulling back toward the kennel. But it was only when I was in the kennel that I could see those responses, the flinching. I think the white noise from I-95 helped, which dampened down the clang of the bowls and the doors. So that was our first little crack." Ferdie encouraged the staff to blanket sit with Hank – just hang in the kennel with him with some treats and have a picnic, which was giving Hank social support. "After getting Hank more motivated to work, then we were able to start working on a relaxation exercise. Not asking him to do anything other than lie on the mat. Early on, if he heard some noise in the shelter, the session was over. He'd be gone. But I started to see some improvement. But even when he just stood there, he would eventually come back to me. Then he started responding in noisier, busier places. Now Hank is eating treats consistently and acting more like a dog rather than being shut down constantly."

One way to understand a dog's perspective is to get in the same space as they live, or "umwelt," a German word the environment, the part of the world an animal can sense and experience, Ferdie said. "Dogs perceive things very differently than us, even when we are in the same space. Do something simple like get down on the floor at the dog's level and look at the world around you. It actually looks much different even if you're only a few feet lower."

Ferdie discussed reasons a dog scent rolls, an instinctual carryover from the dog's wild canid ancestry. "Scent rolling has a biological and adapted value for wild canids. Imagine how a wolf that covers himself in a dead animal scent also picks up the ground around him. And then that wolf can bring the information back to the

rest of the pack and potentially communicate to the pack about the type of species and a location where they can find this food. So the message is – when it's safe, let them do doggy things. They have very little chance to do doggy things in the shelter."

Completing The Stress Cycle is difficult when a dog is in a shelter environment, Ferdie said. "But you can still get it as close as possible. For a dog completing a stress cycle, it can be active or passive. Things like toy play and social play. Racing around having zoomies might actually help them complete their stress cycle. After they are aroused, you want to try to bring the dog down that ladder of stress and arousal because what goes up must come down. Just try to remember to constantly focus on bringing a dog down from arousal, even during play and excitement and fun times, not just when there's stress when they're triggered by something. That can help them strengthen that pathway to recovery." He suggested looking at respiration rates and heart rates during play groups and nature walks. Then afterward, use sniffing exercises or enrichment in the kennel that involves licking or even tearing things apart. "See if they have the ability to switch attention, instead of focusing or being too vigilant on something, look for a softening of the muscle tone. I want them to complete their stress cycle over and over again."

Safety and Security is difficult for a lot of dogs to find in a shelter. As trainers, it's about creating a safe zone for them. Another thing is avoiding triggering situations and environments. Ferdie admitted when he was a "baby" trainer, he would try to expose dogs to triggers and work on counter conditioning, work on that desensitization. "But now I'm on the other end of the spectrum. I am actually avoiding triggers and situations. I'll still learn these

tools, but I'll intervene when it's necessary. I want them to see me as a source of safety. I want them not to think oh, you're going to bring me to that pet store, you're going to bring me to that park where there's a lot of dogs. I want them to look at me and say 'I need help. I need support. Bring me to safety.' That's what I want to teach them."

Ferdie said trainers can create a sense of safety with a blanket, a snuffle mat that can be taken anywhere and just sit with the dog and work on relaxation. "Nobody is allowed to touch the dog or approach the dog when they're in their safe zone. If the dog shows interest in somebody they want to greet, I will get them up off the safe zone and go meet them. But when they're on the safe zone, I am protecting them...nobody's touching them. Ferdie said even a car can be used as a safe zone while working with a dog in different environments. "I'll go back to my car to establish a safe zone and give the dog some time to process the world and bring it down a little bit. And you'd be surprised when I bring them back out, they're OK, I can try. And I think part of it is knowing that they have shelter nearby. When they feel like they have no shelter, it's 'get me out of here.' But if there is shelter nearby, they feel, 'OK, that might be scary, but I'm willing to do this with you as long as you bring me back to that safe zone.'"

Mental & Physical Well-Being includes is diet and nutrition, physical and social environment that provides enrichment, medical (prevention of illness or rapid diagnosis and treatment of illnesses) and REM sleep. Ferdie elaborated about the importance of sleep, stating quality of sleep is more important than quantity. "Insufficient sleep inhibits the creation of new neurons in adults. Disturbed sleep impairs communication between brain areas needed for emotional regulation. When our shelter dogs have an overnight stay in the foster home, they sleep. They sleep a lot. So that's a really important part of resilience."

Social Support is interesting because it involves being present and available without the need to force or control, Ferdie said. "The amount of social support any individual needs in any given situation will vary. Social support can come in conspecific social support, meaning other dogs, or interspecific, like a human or maybe even a cat. Again, you want to be present and provide enough support to support coping and ultimately resilience. But you don't want to be like a helicopter parent. You don't want to put so much pressure on the dog that you actually impede opportunities for the individual to develop adaptive problem-solving abilities and social skills."

Agency is the feeling of having control over actions and their consequences. For this part of the Resilience Rainbow, Ferdie quoted Dr. Patricia McConnell: "Being traumatized in a way you have not recovered from; it's basically about losing choice. Something happened to you that you have no control over. You feel like the world is out of control. So the ability to make your own choices that result in favorable outcomes is crucial to being able to rebound from stress." Since shelter dogs have little control over their lives, Ferdie said

trainers/staff can safely give them agency in a variety of ways:

- Reward-based training because you aren't forcing them into these things; they are active participants in the training process.
- Hikes on long-leads where the environment is safe enough to do that. Walks where you just let the dog guide you where they want to go and your only job is just to keep him out of danger or trouble.
- Consent test petting – always ask the animal if they are enjoying being touched, and when they say 'I'm done,' take your hands off them. Leave them alone.

"For as long as I remember, dog trainers have been espousing that humans have to be in control all the time, that we have to show we're dominant over dogs, that we have complete and total control of them, even telling them when and where to sniff...it would be like me telling you when and where you can look at things and gather information. That's so ridiculous. I can't imagine it," Ferdie said. "I sometimes see people taking a hike with dogs in the woods and the dog is on six inches of a lead. Like how is that even fun for any of you? Instead of taking control, give the control back to the dogs. We've been getting this all wrong. Play is a great sign of recovery because wild animals don't play when they don't feel safe. It makes them vulnerable to predators. It's a reason why you don't see adult animals really play that much. It's important for young animals to build some motor skills."

As Ferdie wrapped up the session, he stressed resilience conditioning exercises can be integrated into any type of training currently being done at a shelter. "The Resilience Rainbow Framework guidelines complements behavior therapy. It's flexible. And you can individualize it to the animal in front of you and help you focus on bringing those animals down from arousal and stress. Bring them down after they play and it strengthens that neuropathy to relaxation. It's hard to imagine because we can't see it. It's inside the body under the skin. But this is what we can do to help build resilience."



Ferdie Yau is the director of shelter and communication and community outreach at behavior vets staff trainer at the Humane Society of westchester and an instructor at catch canine trainers academy, he's an animal trainer and wildlife biologist, who trains dogs and studies urban coyotes. He specializes in treating behavior, cases related to fear anxiety and aggression that behavior vets and he's really good at it.

Fertie started his animal training career at the Bronx and Central Park zoos where he trained dozens of exotic species including California, sea, lions, river, otters, arctic foxes, and polar bears. He has a master's degree in conservation biology from columbia university, and as study jaguars and Belize and coyotes in new york, Resilience is the ability to adopt successfully to or recover from stress and resist the negative.