

Positive, Negative Reinforcement in Horse Training Compared

By Christa Lesté-Lasserre • Aug 14, 2013 • Article #32383



Photo: Anne M. Eberhardt

As the concept of positive reinforcement gains popularity, researchers are trying to confirm its effectiveness at a more baseline level. According to a group of Midwestern equitation scientists, training young horses to load into a trailer is equally effective and stressful whether they're trained using positive or negative reinforcement.

“Both methods (positive and negative reinforcement) proved equally effective in young, inexperienced horses with limited prior experience to handling,” said Kristina Hiney, PhD, associate professor at the University of Wisconsin-River Falls, who described her study on the topic at the 9th Annual International Society for Equitation Science, held July 18-20 at the University of Delaware, in Newark.

In their experiment, Hiney and her fellow researchers taught eight yearlings and seven weanlings that had never been exposed to a trailer how to load into a stock trailer. To keep the stress level as low as possible and to avoid influence from environmental factors such as separation anxiety, the researchers used a trailer next to the horses' pasture where they could stay close to their herdmates, Hiney said.

The team randomly divided each age group into a positive reinforcement group and a negative reinforcement group. They gave the positive reinforcement horses a food reward each time they stepped toward the trailer. They tapped the negative reinforcement horses lightly on their hindquarters with a whip until they stepped forward.

The researchers videotaped the training sessions and noted how the horses progressed toward the trailer and how long it took them to get into the trailer. They observed how much back-stepping, side-stepping, or investigative behavior (sniffing) each horse performed and also evaluated each animal's heart rate, respiratory rate, and body temperature before and after the training session.

Hiney said the team found no major differences between the negative reinforcement group and the positive reinforcement group in training effectiveness and stress levels. Average loading time was approximately the same for both groups, and both groups had similar averages for heart rate, respiratory rate, and body temperature, indicating equivalent stress levels. The horses' heart rates rose at the end of training compared to the beginning, but this was equally true for all groups, she added.

However, Hiney said they did note that the positive reinforcement group showed more investigative behavior—which is generally considered positive for equine welfare—such as sniffing, touching, and exploring, throughout the training process. The negative reinforcement group, meanwhile, tended to show more “avoidance” behaviors—stepping sideways or backwards—during the first minute of training.

“Certainly the negative reinforcement horses were seeking to get away and maybe didn't know yet that the correct answer was indeed going forward,” she said.

They also noted a significant difference between the weanlings and the yearlings in the time taken to reach the initial stage of approaching the trailer, she said. It took the weanlings twice as much time to get their noses to the entrance of the trailer than it did their older counterparts, she added.

While the study reveals that both methods are equally effective in training young horses to load into a trailer, Hiney said she suspects the outcome might be different if the horses were placed in an environment that would lead to a higher state of arousal or stress.

“I can imagine that if we had the trailer in a different location and asked the baby horses to leave their herd and then get in the trailer we might have seen a different situation,” she said.

The study was part of an undergraduate course at the University of Wisconsin teaching students to understand the concepts of learning theory in horses.