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Special Species

Equine Intelligence – 9 Insights Into the Way Horses Think

As flight animals, horses have developed a unique set of highly perceptive senses, skills, and behaviors to help them survive. By delving into their ingrained instincts to flee, we can begin to unravel some of the ways that horses' minds work and ultimately strengthen the human-equine bond.

Reviewed by Dr. Becker

STORY AT-A-GLANCE

- While many equate horses' flightiness as a sign that they're not very bright, it's important to understand that flight equals life for horses, who must outrun their natural predators of cougars, wolves and bears in order to survive
- Horses are the most perceptive of all domestic animals, with an ability to sense slight changes in position in a rider on its back (even a slight turn of the head) and see with virtually 360-degree vision
- Horses are faster learners than dogs, cattle, swine and sheep, as being able to decode what's a threat (and what's not) is essential for a prey animal like a horse
- Horses are herd animals and easily dominated; the leader of the herd is typically an older mare (female horse), which some believe gains its alpha role not by strength or power, per se, but rather by experience and attitude
- Horses never forget, and this includes both good and bad experiences

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The fact that horses have no visible "weapon," like the horn on a rhino or the claws on a tiger, gives a major clue as to how their minds work. Their primary form of defense is "flight," (versus the "fight" some animals may engage in) and as prey animals they are experts at knowing when to flee and executing this action with lightning quick reflexes.

But it's a mistake to assume that horses are simply a product of their instincts, relying on reflex alone. The fact is, horses are often compared to dogs and cats in terms of intelligence, but it's much like comparing apples to oranges.

Dogs and cats are predators, and as such have developed very different skills and behaviors compared to horses. Understanding the latter, therefore, won't come from expecting a horse to behave or think like a dog, or attempting to draw such comparisons, but from striving to understand why a horse's mind works the way it does.

Equine intelligence researcher Evelyn Hanggi, Ph.D., co-founder of the nonprofit Equine Research Foundation, explained to Horse Talk that horses are more intelligent than many people believe:[1]

> *"Common beliefs maintain that horses have a brain the size of a walnut; horses do not think; horses are merely conditioned-response animals; horses cannot generalize; horses have no sense of concept; horses are color blind, have poor acuity and depth perception, and cannot transfer information from one eye to another.*

> *In reality, horses manage not only ordinary daily cognitive tasks but mental challenges as well. In the wild, they must cope with food and water of inconsistent quality or unpredictable distribution, predators that change locations and habits, and a social system in which identities and roles of individuals must be discovered and remembered."*

How Do Horses Think? 9 Key Insights

Dr. Robert M. Miller is an equine veterinarian and behaviorist who has summed up the way horses think in nine concise points. All of them relate back to the fact that horses are flight animals, and this is key to understanding why they do what they do. As summed up by DVM 360, once you understand Miller's nine points, you'll begin to understand the complex underpinnings behind horse intelligence.[2]

- **Flightiness does not equal lack of intelligence —** While many equate horses' (and many prey species') flightiness as a sign that they're not very bright, it's important to understand that flight equals life for horses, who must outrun their natural predators of cougars, wolves and bears in order to survive. Miller told the news outlet:[3]

  > *"I now realize that the horse in its natural environment, the grassy plains, is a highly intelligent animal. As we go through this list, you will see that the horse rates extremely high on some scales, and in several places, it rates higher than any other domestic animal. I am still learning to respect the intelligence of the horse."*

- **Horses' senses are incredible —** Because quick response time is a life-or-death matter for horses, they have developed incredibly sensitive senses, from their vision to their nose and tactile awareness. In fact, Miller says they're the most perceptive of all domestic animals, with an ability to sense slight changes in position in a rider on its back (even a slight turn of the head) and see with virtually 360-degree vision.

  Because a horse's eyes are set on the sides of its head, it's able to see what's on both sides, but their depth perception suffers as a result. This is why horses hesitate before crossing a stream — until they've learned the route or come to trust their rider.

- **Horses learn and are desensitized quickly —** Miller believes that horses are faster learners than dogs, cattle, swine and sheep. This is because being able to decode what's a threat and what's not is essential for a prey animal like a horse. They also become desensitized to potential threats quickly once they realize they're not harmful.

  Why? Miller told DVM 360, "Because if you're a flight animal and an unfamiliar stimulus — a thing you've never seen before or sound you've never heard before — precipitates flight, if that stimulus was harmless and you didn't quickly desensitize to it, you'd never stop running. There'd be no time to eat, drink, rest or reproduce."[4]

- **Horses have the fastest response times of all domestic animals —** This again helps them to survive in the wild, but is an important point to remember if you spend any time around these majestic animals. "[I]f the horse wants to kick you and you're in an exposed position, you're going to get hurt. We just can't move that fast," Miller says.[5]

  This is especially important if you're standing in one of horses' two "blind spots" — directly in front of or in

back of them.[6] You should always talk to a horse when approaching these areas so the horse knows you're there and doesn't become frightened.

- **Horses have excellent memories —** Miller says horses never forget, and this includes both good and bad experiences. Their memory skills were likely helpful in one experiment, in which horses were taught to use a touch-screen computer to discriminate between different shapes and sizes.

  The 42-inch touch-screen monitors showed horses different sizes or shapes. If the horse chose correctly by touching the appropriate choice with his nose, he was rewarded with a carrot, which was automatically distributed beneath the screen.[7]

  The horses learned to use the screen quickly, and were presented with different letter combinations (in which X was always the wrong choice) and shapes of varying sizes. The horses were able to identify shape differences similar to chimpanzees and humans, although the horses had more difficulty with closed shapes like squares, triangles and the letters O and D.
- **Horses are easily dominated —** Horses are herd animals and there are leaders and followers within the group. Horses are the most easily dominated among domestic animals, readily accepting leadership from other horses or humans, provided the leader uses the appropriate behaviors. Because horses are herd animals, they shouldn't be pastured alone.

  Interestingly, in the wild, the leader of the herd is typically an older mare (female horse), which some believe gains its alpha role not by strength or power, per se, but rather by experience and attitude, according to Carey A. Williams, Ph.D., extension specialist in equine management at Rutgers University. Williams reported:[8]

  > "*The older mare has had more experiences, more close encounters, and survived more threats than any other horse in the herd. The requirement of the lead horse is not strength or size; if this were so, then humans could never dominate a horse. Dominance is established not only through aggression but also through attitudes that let the other horses know she expects to be obeyed.*"

- **Horses have their own body language —** Miller believes it's important to learn horses' bodily signals. A horse with its head down, as it is during grazing, signals submission and trust whereas a horse with its head up suggests it's alert and considering flight. He also advises using non-predatory body positions when approaching a horse, such as avoiding staring at the horse and keeping a relaxed posture.
- **Controlling a horse's feet leads to control of their mind —** If you control a horse's movement, you're in essence controlling the horse, because a horse depends on its feet and ability to flee to survive. Miller explained to DVM 360, "When you are on a call and they bring the horse out, while talking to the owner, first move the horse around in a quiet little circle … The horse will be thinking, 'This person is controlling where my feet are positioned.' And submission is the response to that."[9]
- **Horses hit the ground running —** As a precocial species, horses are able to stand and run very soon after birth and have full use of their senses. It's during this time, in the first few days after birth, that imprinting is greatest and foals quickly learn to identify what are threats and what aren't.

Understanding Horse Intelligence Can Further the Human-Equine Bond

Compared to intelligence research in other animals, relatively little work has been done on the advanced intelligence of horses and much remains to be discovered. It's recently been revealed, for instance, that horses use subtle signals to ask humans for help when faced with a difficult problem.[10] They're also capable of reading your, and other horses', facial expressions.[11]

According to Hanggi, deciphering equine intelligence is a crucial area of study, as only by fully understanding how horses' minds work can we be sure we're treating these creatures with the humanity they deserve. As she told Horse Talk:[12]

> *"If the cognitive abilities of horses are misunderstood, underrated, or overrated, their treatment may also be inappropriate. Equine welfare is dependent on not only physical comfort but mental comfort as well.*
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> *Confining a thinking animal in a dark, dusty stable with little or no social interaction and no mental stimulation is as harmful as providing inadequate nutrition or using abusive training methods. Therefore, it is in the interest of both horses and humans to understand more fully the scope of equine thinking."*

Sources and References

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[6, 8] Rutgers University July 22, 2004

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