Value Based Horsemanship

K. Troxler

Empathy: the ability to understand and share the feelings of another.

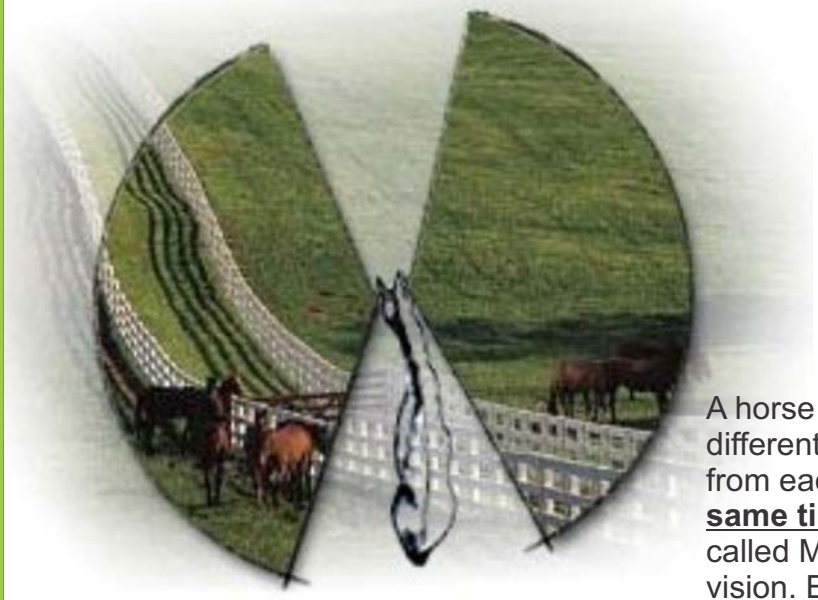
It's easy to understand how to be safe around a horse when you understand how a horse perceives the world around him.
Most important...they do not see the same way we do!

This excellent material is based on a series of 5 on line articles by Kimberly Wall. To view it in it's entirety, go to http://www.examiner.com/article/equine-vision-and-how-a-horse-sees-field-of-vision-part-1

His eyes on the side of his head equip him with an outstanding peripheral range of over 350 degrees, leaving him a narrow yet vulnerable blind spot directly behind and directly in front of him.

Vision

Field of Vision



A horse does have an amazing WIDE ANGLE VIEW of the world!

A horse sees two different images, one from each eye, **at the same time.** This is called MONOCULAR vision. Each eye works on it's own to send images to separate sides of the brain!

equineVision

A horse does have an amazing WIDE ANGLE VIEW of the world!

The drawback is that he has very little depth perception.

Human eyes use binocular vision where both eyes focus on the same object at the same time. People have REALLY GOOD depth perception. Horses have REALLY BAD depth perception. This is why they are sometimes afraid to go across the smallest ditch or puddle. They can't tell the difference between really little or super deep. That's why it's a good idea to let a horse lower it's head to inspect "suspicious" ground. They are using their noses to figure it out.

For a horse, the world around him looks flattened. Often objects only show up when they move around. That is why a horse might jump or spook at a sudden movement in the bushes or trees. Passing a crowd at a horse show is no problem until a breeze picks up and hats, jackets and flags start to move.

Also, remember a horse picks up info from the left eye and the right eye separately, right? You can get show a horse a scarey object on it's left side and they "get used to it". But when you change direction, he'll probably act like he's never seen that scarey thing EVER! Because it's the other eye! **Each one of the horse's eyes needs to "learn" separately.**

One more thing! The horse has a HUGE retina in their eye which can magnify objects by up to 50%. So something that looks small to us, might appear much larger to them!

Depth Perception

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Focus

Focus

Historically, scientists have believed that a horse's retina is ramped, not flat like ours. In other words, he's wearing a pair of bifocals. When humans put on a pair of bifocals, we bring them down when we want to read and up when we want to see something further away. A horse can't move his glasses…so he moves his head instead.

More recently, scientists challenge the idea of a ramped retina and believe instead that an area in the central retina of the horse has a higher concentration of photoreceptors. The horse then tries to focus objects on this part of the retina. Both theories come to the same conclusion; a horse must move his head up and down to bring objects into focus to minimize a blurred effect.

Besides raising and lowering their heads to sharpen the image, horses also move their heads horizontally, letting each eye see the object individually. A narrow field directly in down the front of the horse's nose is the only area where both eyes can focus on the same image. A horse often will draw his nose up in order to focus the object on the only area where he has any depth perception.

equine Vision

Focus

So while far superior in his visual “sense-around” range, a horse is handicapped in focusing images and in his depth perception related to determining height and distance. For example, a horse lowers and raises his head to appraise the height, width and distance from an object. A tight martingale restricting head movement could affect a horse’s attempt to focus on an approaching jump.

Ever have a horse swing his head around while you are on a trail ride? The horse eye detected movement in one eye, and then he attempted to turn his head to get better focus with both eyes, switching to binocular vision. Horses cannot use binocular and monocular vision at the same time. If a rider restricts him from turning his head, he’ll get anxious. A predator is lurking and he is in handcuffs.

Another point to keep in mind…simply put, horses see things that we cannot. Both his distance vision and sense of smell is superior to ours. Just because WE don’t see an enemy prowling the hills doesn’t mean a horse won’t detect it. A horse uses his natural instincts, specifically vision, hearing and smell, to protect himself and YOU for that matter. If nature tells him there’s a bobcat sitting on a hill, he’s going to want to check it out, then decide whether to run away from it.

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Color

Color, Night Vision & Farsightedness

Current color vision studies reveal that horses see the world in shades of yellow, blue and gray. Bright red appears yellowish and dark red appears gray. Greens turn to a muddy yellow. Blue is blue and yellow is yellow. This [lack of] color distinction can affect a horse's performance in a variety of ways. A horse may notice a bright blue object but a green panel turns a muddy yellow and may blend into the light color of the footing.

With depth perception that's sketchy at best, coupled with a tendency toward farsightedness, horses tend to develop a horizontal astigmatism, which means that vertical lines appear sharper and horizontal lines seem blurry.

An afternoon trail ride turns into an evening hike yet your horse seems quite comfortable at dusk. **Horses see almost 50 percent better than humans in the dark**, which means his vision, coupled with his sense of smell, is your compass to find your way home.

Next weekend at the horse show, however, he schools well outdoors then bolts into the indoor arena like he sees goblins at every corner. Why? **Horses' eyes take longer to adjust to light than any other animal.** Give him time to acclimate to the low levels of light and he'll see much better than we do.

Empathy

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Understand How The Horse Views His World

Because animals see the world differently doesn't mean they have an inferior perception. There are insects out there that see more colors than we do! To alert for predators, the eye of the horse is designed for extraordinary peripheral vision and high sensitivity in dim light. His color perception is muddied and he is slow to react to changes from extreme light to dark. Restricting a horse's head movement may affect his ability to focus. A horse often won't identify an object until it starts to move.

When correcting a spooking horse, react in a calm manner based on understanding what he is seeing when he spooks. Losing your stirrup, becoming unbalanced and above all…punishing the horse, will accentuate the problem. Your horse's instinctive mind deduces that the scary object is the cause of his rider's startle. He will correlate the object with his punishment, further magnifying his refusal to go anywhere near the object which by this time has become The Enemy. And guess what, the horse's memory is second only to elephants.

Try seeing your ride through a horse's eyes and you'll be amazed at how the world appears. Learn to understand his vision and you'll get an insight into his equine mind, anticipate his anxieties and improve his performance. In return, he'll spook less and may end up warning you of predators ahead that would have completely escaped your awareness.

Vision