ABSTRACT

TITLE:	Equine Motor Dominance and Eye Preference in Response to a Novel Stimulus
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ABSTRACT: Prior research has shown that horses and other mammals, including humans, use the right hemisphere of the brain to process negatively associated stimuli and the left hemisphere to process positive or neutral stimuli. This study tested the link among motor dominance, a horse's preference for their right or left foreleg, and their eye preference for viewing a novel stimulus. This study will provide information on the hemispheric organization of horses, how this compares to humans and other mammals, and how this influences temperament. Motor dominance was tested using pedometers attached to the forelegs of each horse participant. Horses were then grouped into left and right dominant experimental groups. Each horse was then individually exposed to a novel stimulus (i.e. a pinwheel) placed at the end of a barn aisle, with a barrier dividing the barn aisle at the center, directly in front of the stimulus. In order to investigate the stimulus, horses either walked on the left or the right side of the barrier, or they chose not to approach. Due to their monocular fields of vision, with eyes placed on the sides of their heads, horses that walked on the left side of the barrier initially viewed the stimulus with their right eye as they approached, whereas horses that walked on the right side initially viewed the stimulus with their left eye. Horses were timed during their approach to the pinwheel, and due to their similar hemispheric organization to other mammals, horses that approached using their left eye may be more inhibited, taking more time to approach. Horses that use their left eye to view the pinwheel may also have a higher increase in heart rate, due to the stress induced by the novelty of the stimulus. Results for heart rate and latency to approach were not statistically significant, but the trend in the means for the experimental groups supports the predictions of the researchers. Results for motor dominance in regard to eye preference did not reach statistical significance, however, the means in heart rate do show a difference between left and right dominant horses in response to the pinwheel.