

Horse visual attention

Attention is the capacity to focus on an environmental stimulation. Would this aptitude, or ability to be aware about his environment, be linked to learning and memorization abilities ? Is there also any links with life conditions? In her thesis, Céline Rochais (Rennes University) gives answer to those questions.

By **Marianne VIDAMENT** – | 01.08.2017 |

Technical level   



How to measure visual attention?

For horses, attentiveness is characterized by sight direction, ears, neck and / or the whole body orientation towards a relevant stimulation of the environment. There is two different types of attention: visual attention and auditory attention.



Attention to a relevant stimulation of the environment

In case of visual attention, neck is mobile, horizontal or slightly above the horizontal. This oversight stack has to be differentiated from the vigilance posture where neck and tail raise high with neck, ears and head in a freezing posture. It indicates an emotional state with greater / higher intensity. (see last picture).

In science, visual attention can be estimated :

- **Either** with the observation of a horse every two minutes, walking quietly in the corridor, during three 1 h sessions during the day at quiet times (away from meal and teaching time). The amount of times the horse will behave as described above will be accounted.
- **Either** with a visual attention test. C. Rochais developed the following test : after staying in a box with the horse for 2 mn without moving, the operator points a green laser light to the door of the box (repetition of 50cm length circular vertical and horizontal movements) for 5 minutes. Shown Behaviors are :
Duration of horse looking / staring at the light (= global attention time)
Duration of horse staring at the light with fixed eyes and ears and a still body, so with a binocular eyesight (= still attention time) and the way to look at it (non-discontinued attention or fragmented sequences attention).
Video recording is essential to measure correctly these different elements.

In order to develop and validate this test, a first study was performed twice 6 months apart on twelve mares. Results indicate that attention differences between individuals are very significant. The total duration of the global attention fluctuated from 8 to 172 seconds (average 46 s.) over the 300 s test. It is often very fragmented (2 to 8 sequences (average 12)) in sequences from 1 to 7 sec (average: 3,7 sec.). Values of global or still attention time, measured at 6 months, are highly correlated to initial values.

Relationship between attention and learning performance

The 12 previous mares were initiated to lungeing for 5mn every day for two weeks. C. Rochais looked at relations between their performances during this apprenticeship and their results to the visual attention test. More the mares were focused during the test, less they moved freely (without request) to the upper gait while lunged, during the last work session. So they were more attentive and obediend.



Attention and learning performances

15 horses from an equestrian center have undergone an attention visual test. In addition, riding instructors answered to a survey in order to calculate an obedience score and a concentration score at work. A positive correlation was found between the number of fragmented sequences attention, duration of the global attention, and the total score of concentration calculated from the survey.

Secondly, C. Rochais showed that the horse attention reach its higher point, especially toward the trainer, in horses learning a task with food rewards compared to a similar task learned with hand grooming as a reward.

Is there any relation between the horse welfare and the attention of the horse to his environment?



Visual attention is a quiet oversight of the environment

A calm attention to his environment would be a sign of welfare for horses. On contrary, a lack of attention to the environment is described for depressive humans, for some horses in equestrian center adopting a specific fixed posture from time to time (Fureix 2012) and in overused and poorly feed horses (underdeveloped countries).

Studying 100 horses in equestrian center, C. Rochais showed that the more horses suffer from their horse's back, the less they spend time to quietly observe their environment.

Observe your horse for a better knowledge of its status?



Visual attention must be differentiated from the alert or vigilance posture stands by this horse

How to recognize this state of calm attention to environment ? Either taking time to observe precisely your horse in diverse situations, looking for the behavior as described above; Or making audio, visual or tactile tests, not frightening, and then check if your horse gets a reaction, calmly to these stimulations.

These reactions must be differentiated from the two following behaviors.
1) a total absence or very weak reaction suggesting a depressive state
2) a state of excessive reactivity (frequent alert postures) suggesting an anxiety state.

In all case, these answers will have to be moderated according to the animal temperament. Some animals are intrinsically more fearful than others, and more sensitive to visual or auditive stimulations.

Remember

If a horse regularly shows a calm attention to its environment, this would be a sign of welfare, and would allow the horse to be more efficient during his apprenticeship.

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Démonstration de Hugo Cousillas (Université Rennes) de la mesure de l'activité du cerveau grâce à un encéphalogramme et l'effet, sur le cerveau, de l'augmentation de l'état d'attention grâce au laser vert pointé par C. Rochais sur un objet devant le cheval. Congrès ISES 2016 à Saumur, sur Equivod Ifce :

<https://www.youtube.com/watch?v=qciyv6wVDtw> (vers la 12ème minute).