

Laterality and emotions : behavioural response to an approach of a novel object by young ridden horses.

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Laterality is now known to be an ubiquitous phenomenon among vertebrates. In most studies, horses' left eye is associated with fear eliciting situations associated with conspecific aggression (Austin 2014), with inanimate objects (Austin 2007, De Boyer des Roches 2008) or with people (Farmer 2010, Sankey 2011). In this study, we have evaluated the fear reaction induced by a novel object when the ridden horse turned around the object either in a clockwise or in a counterclockwise direction.

During breeding shows, 70 jumping horses (3 years old) were tested for their emotivity to a novel object: they were ridden at walk toward a novel object then around it 2 times. Their usual rider were said how to ride : no aids during the approach and the 1st circle, more active aids if necessary during the 2nd circle, direction (clockwise (object at right) or counterclockwise (object at left), the direction was changed at every other horse)). The novel object consisted in

a red and black pop up tent vertically supported by an obstacle stand making a 1 m x 1.7m x 0.4 m object. The evasion distance from the object (1 : 0 to 2 m, 2: 2 to 4 m, 3: > 4 m) for each 1/8 circle was measured. Time to perform the test was also noted. This was a part of a personality assessment.

The evasion distance (for each 1/8 circle or globally) was similar for each direction ($P=0.7$) (Fig.1A) as the total time to perform the test ($P=0.48$) (Fig. 1B).

Results show variability among horses. Only a reduced and similar proportion of horses succeeded to walk near the object (< 2 m) (10/35 (29%) with object at right vs 6/35 horses (17%) with object at left: ($P=0.25$)). Similar proportion of horses made bouts of trot and fast movements (8/35 (23%) with object at right vs 9/35 (26%) with object at left) ($P=0.78$)).

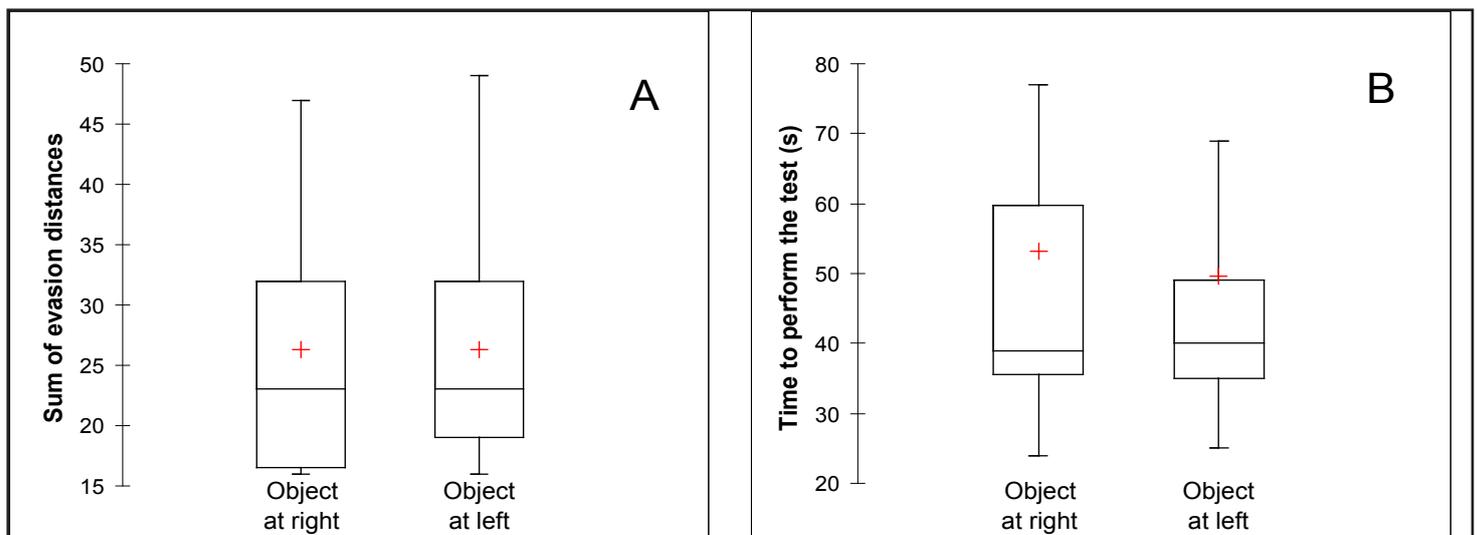


Fig. 1A and 1B. Box plots (Q1, Q2, Q3), + : mean.

According to the direction, clockwise (object at right) (n = 35 horses)

or counterclockwise (object at left) (n= 35 horses) :

1A. Evasion distance from the object : sum of distances along the successive 1/8 circles (2 circles)

1B. Time to perform the test (s).

In conclusion, horses showed no asymmetry in their reactivity when turning around the novel object in one direction or in the opposite direction. Here, the object was first seen in binocular vision (straight approach from 20 m), then seen by one eye only (during the two circles) and horses could not interact freely with the object. This test could be performed similarly in the two directions.

References

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