

Temperament of school horses: relation with sport discipline and level of riders

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Introduction

Temperament

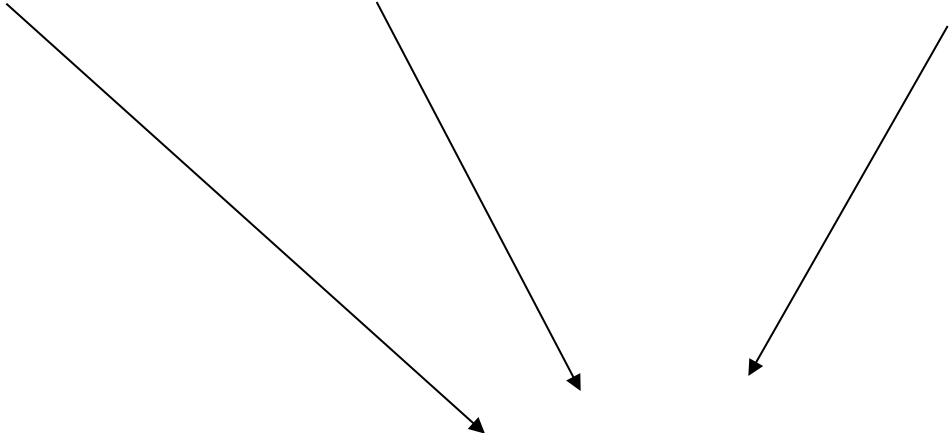
= individual differences in behaviour that are present early in life
and are relatively stable
across situations and over the course of time
(Bates 1987, Goldsmith 1987)



Introduction : Measurement of temperament in horses

Independant dimensions

Dimension 1 Dimension 2 Dimension n



Temperament
(Character, Personality)

Introduction : Measurement of temperament in horses

Dimensions studied

For review : König von Borstel, 2013

By behavioural tests :

Fearfulness, nervousity, social isolation, anxiety, reactivity to humans,
locomotor activity, excitability, learning capacity

(Le Scolan 1997 , Wolff 1997, Momozawa 2003, Visser 2001, 2003, McCall 2006, Hausberger 2004, Burger 2007, König von Borstel 2010, 2011, Lesimple 2011, Janczarek 2011, Munsters 2012)

By questionnaire or intuitive scoring :

Dominance, anxiety, excitability, protection, sociability, curiosity, attention,
extraversion, neuroticism, affability, trainability, rideability

(French 1993, Lloyd 2007, McCrogan 2008, Napolitano 2008, Nagy 2010, Duberstein 10)

But often :

- * stability across the course of time has not been proved
- * Tests are measuring several dimensions together instead of one alone

Introduction : Measurement of temperament in horses

Model developed in our lab, 5 dimensions:

1 - Locomotor activity

2 – Fearfulness
to novelty
to suddenness

(Lansade et al. 2008 a)

3 - Reactivity to
social isolation

(Lansade et al. 2008 b)



5 - Sensory sensitivity
(auditory, tactile)

(Lansade et al. 2008 d)

4 - Reactivity to
human

(Lansade et al. 2008 c)

Prediction as early as 8 months, stable between 8 month and 3 years.

Introduction

Programs in France since 2007 to measure temperament of field horses according to Lansade (2010) :

- Stallions of different breeds
- Bred horses : Merens horses, AA, Welsh ponies
- Ridden horses : Young show jumping horses, Elementary riding school horses, Advanced riding school horses

Introduction

Aims of this retrospective study
on data of horses from an advanced riding school :

- 1) to evaluate the relation between disciplines and temperament
- 2) to check if the ease to be ridden
was in relation with certain temperament measurements



Material & Methods

Population studied : 56 riding school horses

- ❖ Belonging to ENE in Saumur (National School of Riding)
- ❖ Housed in one large stable, with the same diet
- ❖ Ridden at the same place with similar regimen of work
- ❖ Used for only one discipline
- ❖ Ridden by a single rider for several months
- ❖ Minimum level of riders : basic level for national competition

Material & Methods : Horses

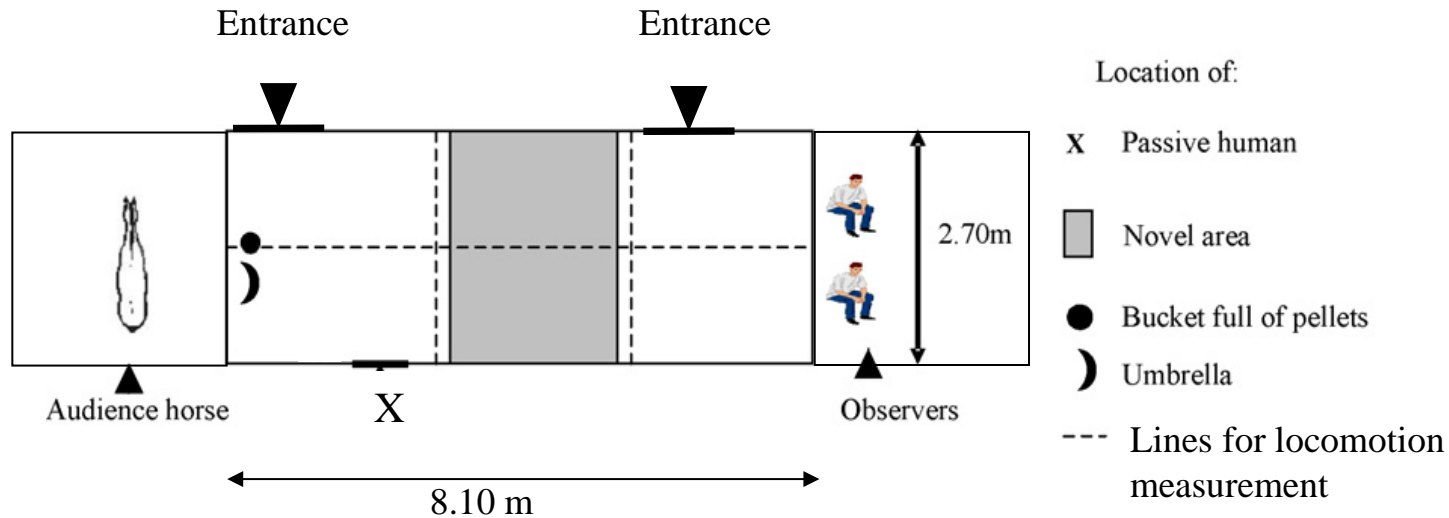


Discipline	Eventing	Show jumping	Dressage
Nb horses	19	12	25
Age (mean)	11,2	11,9	11,6
Age (min-max)	4-17	7-16	6-17
Sex (% geldings)*	68	75	72
French Saddle and Anglo-Arab Breeds (%)	89	100	85

* No stallion

*Eventing = dressage,
cross and show jumping*

Material & Methods : Temperament tests



Standardized conditions, free animal with an audience horse

Tests idem as Lansade (2010)

Chosen variables /test : most stable variables across time and situation

Material & Methods : Temperament tests



A. Laurieux

Emotivity to non familiar human



H. Roche

Locomotor activity

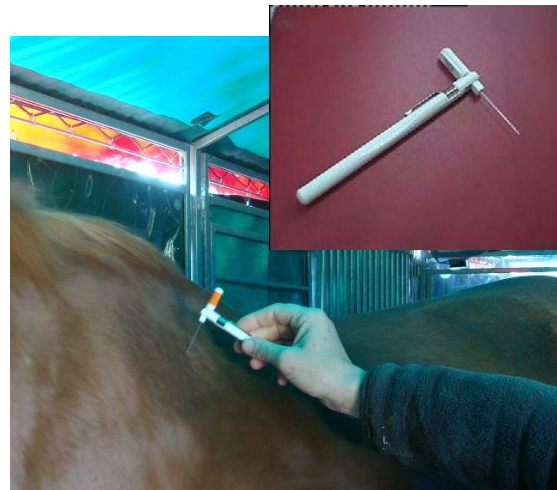


A. Laurieux

Emotivity to novel object



Emotivity to novel surface



Tactile sensitivity



Emotivity to suddenness

Material & Methods :

2 questionnaires about these horses



❖ 1 - To the grooms in charge of the horse
about usual reactions in the stable

❖ 2 - To the riding teachers specialized in one
discipline

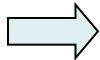
about usual reactions when ridden

about minimal level for people to ride these
horses safely, eventhough these horses were ridden
only by pre-national competition level riders



Results : Discipline and Temperament tests

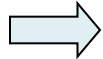
	n=12	n =25	n=19	
Discipline	Show jumping	Dressage	Eventing	Global P
Locomotor activity				
Emotivity to suddenness	-	--+	+	0.03
Emotivity to new surface	-	+	--+	0.04
Sniffing the new object				
Reactivity to social isolation				
Tactile sensitivity				
Sniffing the unknown human				



Show jumping horses had a lower level of fearfulness compared to Eventing or Dressage horses

Results : Discipline and Usual reactions of horses during grooming

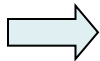
Discipline	Show jumping	Dressage	Eventing	Global P
Agitation during feeding				
Entering the box				
Cleaning the box				
Brushing				
Tying for a while				
Showering				
Medical care				
Overall impression = difficulty of grooming	-	-+	+	0.03



Show jumping horses were described as easier to groom compared to Eventing or Dressage horses

Results : Discipline and Usual reactions of horses during riding

Discipline	Show jumping	Dressage	Eventing	Global P
Emotivity to new object, new surface				
Separation from other horses				
Agressivity to other horses				
Respect of handler				
Sensibility to aids of rider				
Locomotor activity at work	-	+	- +	0.03
Frequency of undesirable small fast movements	- +	-	+	0.03
Frequency of dangerous movements				
Ease of learning				



Show jumping horses had lower level of locomotor activity and lower undesirable fast movements compared to Eventing or Dressage horses

Results : Rider level and Temperament

Level of rider = minimal level to ride these horses safely

Horses of all disciplines pooled

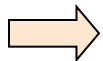
Minimum level of rider	Nb horses	Age	Sex (% geldings)	French Saddle and Anglo-Arab Breeds (%)
Low and mid	26	12	69	96
High *	28	11	71	79

* Pre-national and national competition

Results : Rider level and Temperament

Rider level	Low and Mid Level	High level *	Global P
Locomotor activity	-	+	0.009
Emotivity to suddenness	-	+	0.02
Emotivity to new surface			
Sniffing the new object			
Reactivity to social isolation	-	+	0.03
Tactile sensitivity			
Sniffing the unknown human			

* Pre-national and national competition



Horses adapted to mid level riders are less fearful, less gregarious and less active than horses that can be ridden safely by higher level riders.

Discussion - Conclusion

Discipline and Temperament

In our study, Show jumping horses appeared less fearful than Dressage or Eventing horses :
in temperament tests
& according to the riding teachers (and the grooms)

- Relation temperament-specific task : not easy to highlight
- Therapeutic horses : no difference / control
(Anderson 1999, Minero 2005)
 - Jumping & Eventing H. less fearful than Dressage H. (Hausberger 2004)
 - Show Jumping H. less fearful than Dressage or Mixt H.
(Von Borstel 2010). Hypothesis : a genetic basis.
 - Jumping H. less fearful than Dressage H. (Hausberger 2011).
Hypothesis : work could influence the personality.

Discussion - Conclusion

Temperament and level of rider

In this study, level of rider have been related to reactivity to social isolation, to fearfulness and to locomotor activity.

In our lab,

* on experimental horses at breaking :

horses easier to handle : less fearfull, more close to human and less reactive to isolation (Lansade 2005)

* on field horses in riding centers (various ages and breeds) :

horses easier to be ridden by beginners : less fearful (novel area, suddenness), less close to novel object, less active (Lansade 2008)

* on stallions (various ages and breeds) :

stallions easier to be ridden by low level riders : less gregarious and less sensitive (tactile) (Vidament IESM 2012)

Discussion - Conclusion

In conclusion, there are relations between temperament dimensions and discipline, and between temperament dimensions and rideability.

Temperament must be explored more intensively :

- in its relationship with safety of the beginners
- in determining mental abilities for the various level of equine disciplines
- to point out which dimensions and variables are crucial, in order to simplify the tests for the fields

Thank you for your attention

Thanks to :

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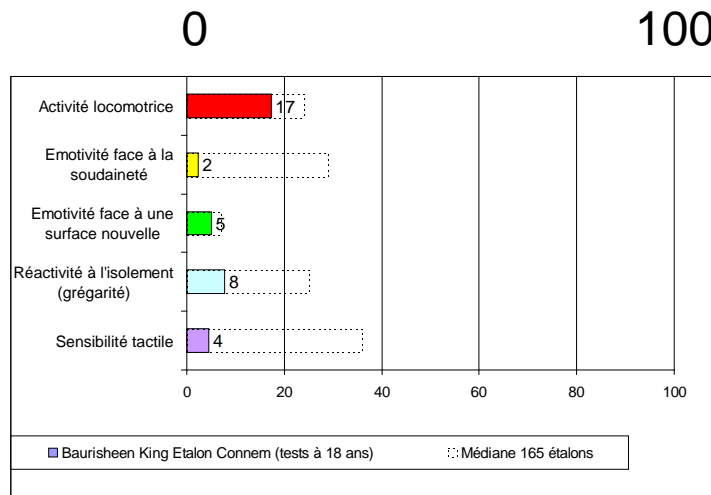
A. Laurieux

Technical staff of ENE

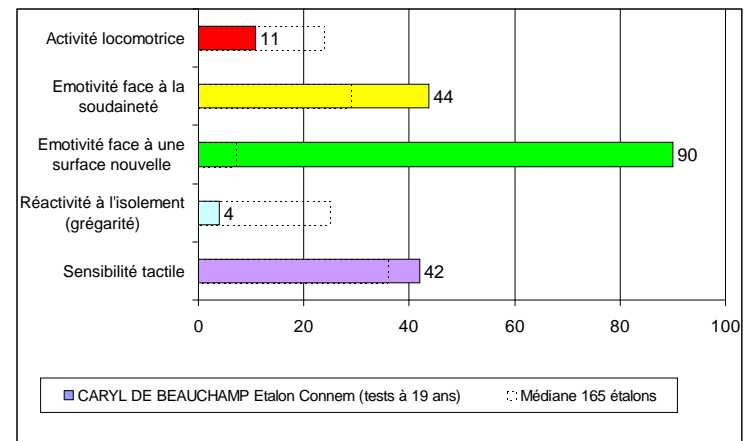


Discussion - Conclusion

It is important to consider all the dimensions together to describe the temperament of a horse = profile.

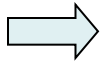
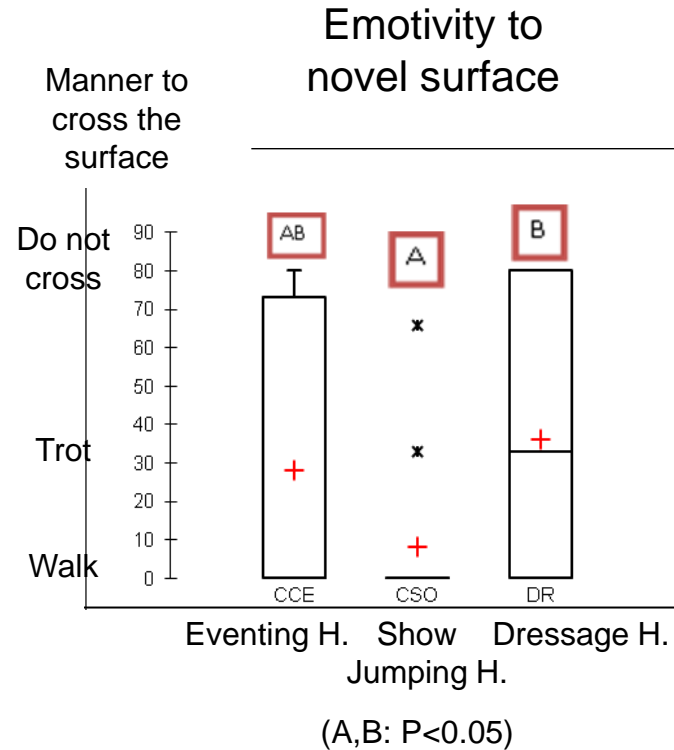
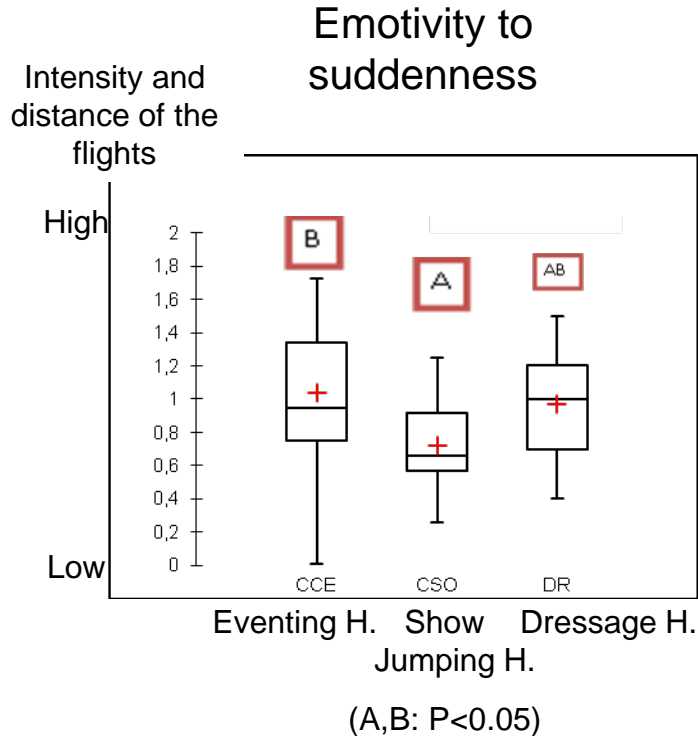


Baurisheen King, Connemara,
tested at 18 years.



Caryl de Bauchamp, Connemara,
tested at 19 years

Results : Discipline and temperament

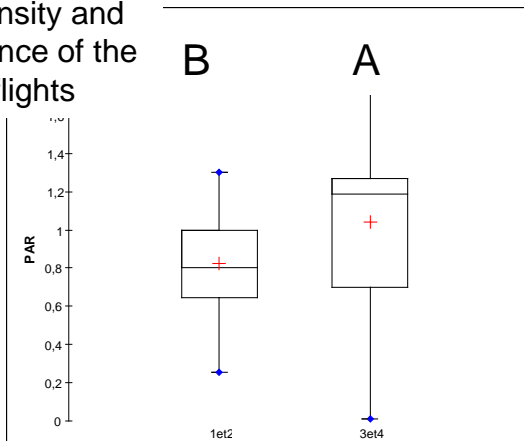


Show jumping horses had a lower level of fearfulness compared to Eventing or Dressage horses

Results : Rider level and temperament

Emotivity to suddenness

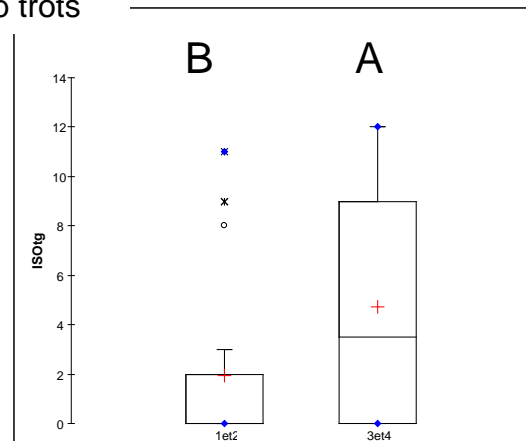
Intensity and distance of the flights



Mid lev. rider High lev. rider
(A,B: P=0.02) ok

Social isolation

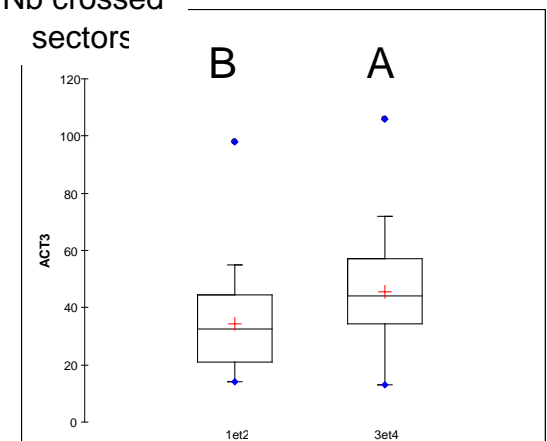
Nb trots



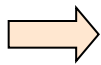
Mid lev. rider High lev. rider
(A,B: P = 0.03) OK

Locomotor activity

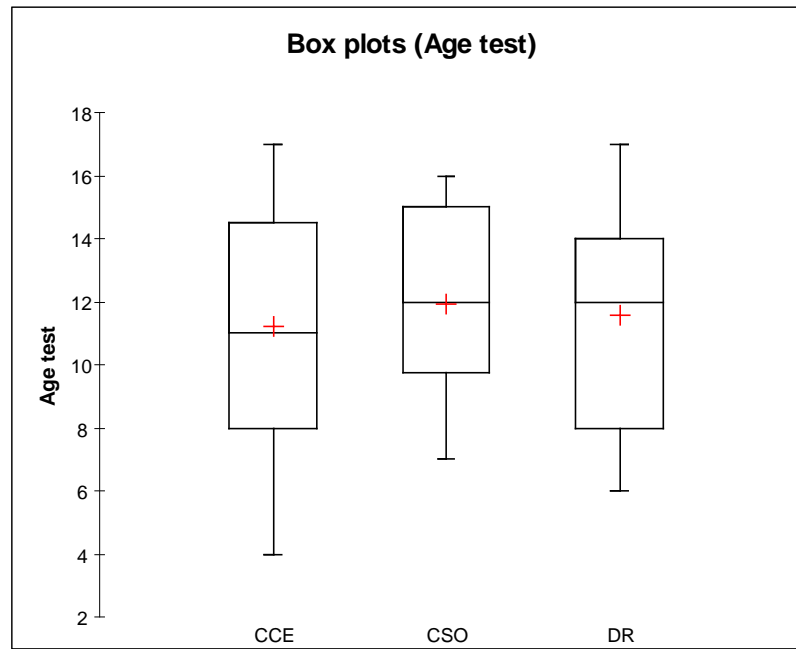
Nb crossed sectors



Mid lev. rider High lev. rider
(A,B: P < 0.01)



Horses adapted to mid level riders are less fearful, less gregarious and less active than horses that can be ridden safely by higher level riders.



Material & Methods : Temperament tests



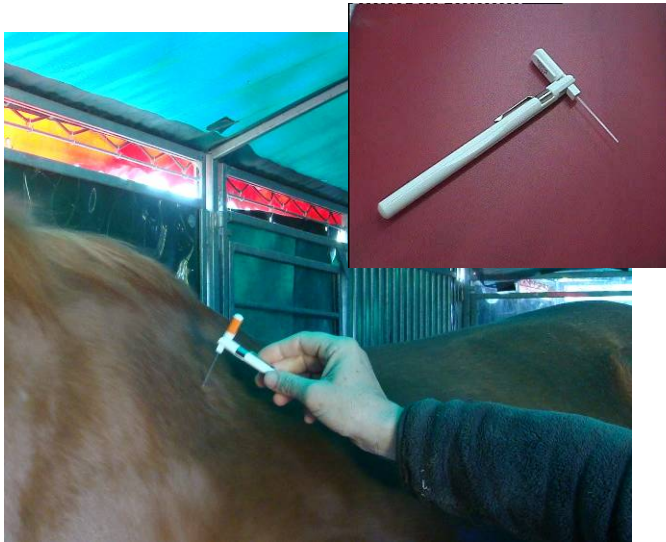
- Habituation to the test pen : 5 min

- Sound test : 1000 Hz, 67 dB, 1,5 sec
→ ear and head movements



- Passive human test : 3 min
→ frequency of sniffing and nibbling the human
(= proximity/curiosity about human)

Material & Methods : Temperament tests



-Tactile sensitivity tests :

* **withers stimulation with 4 Von Frey filaments, 2 / side** (0,008 g , 300 g, 0.02 g and 1 g)

' trembling/not trembling of the plastima muscle



* **stifle-haunch axis stimulation** with 4 instruments of different hardness, 2 / side

' intensity of body reaction (stifle, stomach, croup, interruption of breathing, general tensing of the muscles)

Material & Methods : Temperament tests

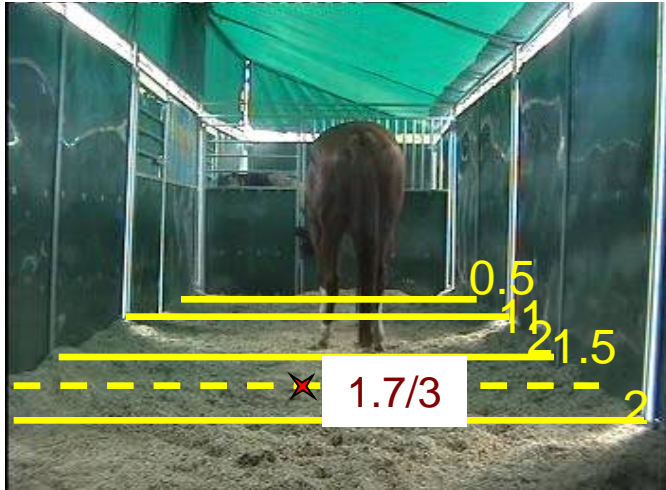


- Novel object test : 3 min
 - ' frequency of sniffing and nibbling the object (= absence of fear/curiosity for the object)



- Novel surface test : max 3 min
 - ' time to cross and eat,
 - ' manner to cross

Material & Methods : Temperament tests



- Suddenness test:

max 3 min + max 3 min

1. A non open umbrella above the bucket was shaken :

' intensity and distance of flight

2. When coming back and eating, the umbrella was opened :

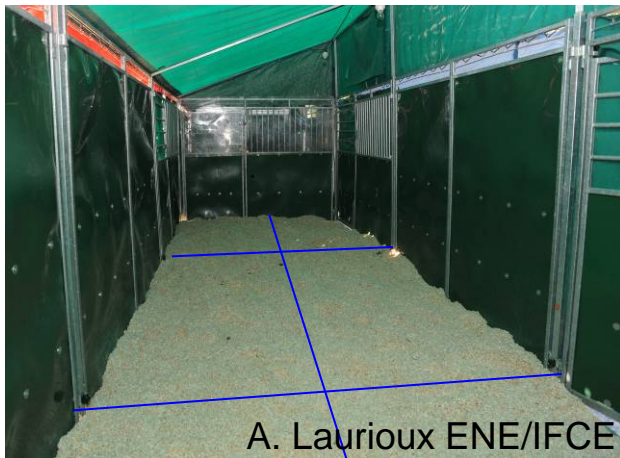
' intensity and distance of flight



Material & Methods : Temperament tests



- **Social isolation test** : 1 min 30
- The audience horse removed:
- ' frequency of neighing and trots



- **Locomotor activity**
- ' nb of areas crossed by the horse
- during: habituation phase (5 min),
- passive human (3 min) and novel object
- tests (3 min).

Introduction : Measurement of temperament in horses

Growing interest in Europe for measurement of character / temperament
in :

- ❖ different stud-books
- ❖ different countries
- ❖ for specific use : mounted police, therapy....

By field tests

Burger 2007, Wallin 2003 [Peteers ISAE 2010](#) ,
Munsters Pierard 2013 etc.....

Dans Discussion plutôt ??? ????