



ISES Abstracts

13TH INTERNATIONAL CONFERENCE OF THE INTERNATIONAL SOCIETY OF EQUITATION SCIENCE (ISES) - CHARLES STURT UNIVERSITY, WAGGA WAGGA, AUSTRALIA – COLLATED SHORT ABSTRACTS
CONFERENCE TITLE: EQUITATION SCIENCE IN PRACTICE: COLLABORATION, COMMUNICATION AND CHANGE
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Equitation Science in practice: past, present and future

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The International Society for Equitation Science's mission is to improve horse welfare. Although research conducted over the past decade has allowed some of ISES's aims and objectives to be met, there remains a long way to go. The global horse industry is changing with increased focus on horse welfare. Equitation Science research has started to determine which methods, approaches and equipment promote ethical and sustainable practice, with increasing focus at the individual horse level and increasing use of animal- versus resource- based welfare indicators. The core activity of Equitation Science must remain the generation of rigorous, reliable and robust evidence-based findings to promote ethical and sustainable equestrian practice. The Horse-Human relationship is central to equestrian pursuits and is problematic. With the best of intentions it is difficult to remain objective when observing, reporting and interpreting equid behavior even in the best designed studies. Although Equitation Science has taken a multidisciplinary approach and proactively adopted technologies known to facilitate objectivity, approaches used by social scientists to study multiple aspects of the horse-human relationship must also be assimilated. ISES still needs to increase its inclusivity and consequently widen its reach both within local environs and globally. This can only be achieved if Equitation Scientists continue to hone their collaboration and communication skills. Given the fact that change inevitably causes discomfort, it is up to Equitation Scientists as potential 'leaders' to help make sure that inevitable reticence and resistance to change is managed in a positive and productive way within the equine industry. **Keywords:** Equitation Science; practice; welfare; communication; collaboration; change

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Standing on the shoulders of giants: building foundations for the future of equitation science
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Sir Isaac Newton famously wrote: 'If I have seen further it is only by standing on the shoulders of giants' (nanos gigantum humeris insidentes), conveying the notion of discovering 'truth' by building on previous discoveries. It is widely agreed that globally as a body of

horse practitioners we still don't know what we don't know and even more importantly, what we need to know, to improve equine welfare. Often we forget the true heroes, those who have gone before upon who's 'shoulders of wisdom' we have built our equestrian and equitation practice. Examples of these go as far back as Xenophon who wrote about foundation training in young horses making key statements such as "The groom should stroke or scratch the colt, so that he enjoys human company, and should take the young horse through crowds to accustom him to different sights and noises. If the colt is frightened, the groom should reassure him, rather than punish him, and teach the animal that there is nothing to fear". This basic advice resonates in Equitation Science based approaches to young horse education. Although there are also teachings within Xenophon's book that are no longer considered acceptable, and certainly not in the interests of good equine welfare, the introduction of habituation to frightening things, the use of reassurance rather than punishment and the introduction and acceptance of positive emotions in horses (such as enjoying human company) are now all active and growing areas for research in the established field of Equitation Science.

Keywords: Equitation Science; equine; horse training; safety; welfare

THEME: COLLABORATION AND COMMUNICATION
SUBTHEME: EQUINE BEHAVIOR AND WELFARE
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Body language: it's importance for communication with horses

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Body language is important for communication between individuals. Body language is based on the fact that the thought, alone of performing a known action will activate the motor neurons used for the action, resulting in a slight contraction of the involved muscles. These contractions called intention movements signal what the sender will do within the next second, enabling the recipient to react. This type of communication is important both for animals and for peoples' interaction with animals. For example in competitive situations the exchange of information prevents physical interaction making life in the social group more peaceful. Domestic animals having frequent contact with people learn to read our body language. Similarly, experienced animal trainers learn to read the body language of their animals. This exchange of information makes it safer and more efficient to work

with horses. Body language may also influence results of scientific studies. Research on preferences or cognitive abilities in horses often use choice experiments combined with operant conditioning. Recent studies have thus demonstrated that horses prefer bigger quantities of food than smaller quantities, that they have prospective memory, and that they can communicate with people using symbols. These results may be true but because the experimental horses are handled by people right before they make their choice it is not possible to tell whether their choice is their own or whether it has been influenced by the body language of the handler. To be valid this kind of experiment must eliminate any possibility of human influence.

Keywords: body language; communication; safety; handling

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Developing a descriptive reference ethogram for Equitation Science

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There is currently no gold standard for nomenclature and definitions of equine behavior units. The ultimate goal of an ethogram for a particular species is to provide a list of behaviors and their function. However, agreement on function, causation or ontogeny is difficult to reach without accurate descriptive definitions of the various behavior units. A descriptive reference ethogram would increase the validity, reliability and compatibility of studies, without compromising the flexibility needed. A test of the reliability of a descriptive reference ethogram for horses was conducted using a test panel comprising 13 Equitation Science researchers and 10 high-level practitioners. Panelists scored behaviors in 30 short video clips, using a partial ethogram containing 21 behaviors, including locomotor behaviors, lying down, getting up, rolling, striking and kicking. Statistical analysis using logistic mixed models indicated that the variability between observers was very low (covariance parameter estimate <0.0001) and much lower than the variability between video clips (covariance parameter estimate = 0.15, standard error = 0.05), indicating a high reliability. Scoring by researchers and practitioners showed no significant difference. Training of panelists was limited to 5 demonstration video clips with explanations and instructions on how to score the clips. It would be useful to investigate the influence of more specific training on the reliability of an ethogram. Feedback from panel members will be included in the development of the descriptive reference ethogram. Ethograms and their behavioral definitions represent measuring units for behavior. This study showed that agreement on descriptive definitions is possible.

Keywords: reference ethogram; behavior unit; descriptive definition; reliability

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Decreased eye-blink rate as a non-invasive measure of stress in the domestic horse

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Eye blink rate (EBR) has been successfully used as a non-invasive measure of stress in cattle and humans, and this study sought to validate this measure in horses. Each of 15 horses were randomly subjected to the known stressors of (1) separation (SEP) – horse removed from visual contact with its paddock mates; (2) feed restriction (FR) – feed withheld at regular feeding time; and (3)

startle test (ST) – a ball suddenly thrown on the ground in front of the horse while alone in the arena, and compared to control (CON) – horse in its normal paddock environment. Full eye blinks, half eye blinks and eyelid flutters of the right eye were retrospectively determined from video recordings. A one-tailed mixed-model procedure with Sidak's multiple comparisons of least square means demonstrated that both full blinks (3.0 ± 0.43^b vs 4.3 ± 0.66^{ab} vs 3.8 ± 0.61^b vs 6.2 ± 1.16^a full blinks/min \pm SEM in, SEP, FR, ST and CON respectively where a,b differ, $F_{3,39}=4.83$, $P=0.006$) and half blinks (8.7 ± 0.97^{bc} vs 11.5 ± 1.22^{ab} vs 7.1 ± 0.95^c vs 12.9 ± 1.31^a half blinks/min \pm SEM in, SEP, FR, ST and CON respectively where a,b,c differ, $F_{3,39}=8.99$, $P<0.0001$) decreased during potentially stressful situations. Eyelid flutters were more frequent in FR than any other treatment (1.3 ± 0.36^b vs 4.2 ± 0.69^a vs 1.3 ± 0.44^b vs 1.3 ± 0.22^b flutters/min \pm SEM in SEP, FR, ST and CON respectively where a,b, differ, $F_{3,39}=8.76$, $P<0.0001$). These preliminary results suggest that a decrease in full and half blinks concomitant with an increase in eyelid flutters can be used as a non-invasive measure of stress in horses, allowing insight into a horse's affective state.

Keywords: eye blink rate; stress; behavior; heart rate

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Clicker training in horses; the importance of the time between click and reward

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Timing of reward is very important when training horses. Incorrect timing can lead to confusion and deleterious behaviors and learning will be impaired. Clicker training can be used as an important tool in training. However, the optimal timing between the secondary and primary reinforcer remains unclear in the scientific literature. Fifteen horses were divided into three treatment groups; all were trained to touch a target through clicker training. Group 1 (n=5) was immediately rewarded after the click, group 2 (n=5) was rewarded 10 seconds after the click and group 3 (n=5) was rewarded 20 seconds after the click. All horses received a maximum of 20 training trials, with a maximum duration of 60 seconds per trial. When the horse touched the target 10 consecutive times with its nose, achieving the training criterion, training trials were stopped. A Kruskal-Wallis pairwise test showed a significant difference in learning a simple behavioral task between groups 1 and 2 ($H_2=-31.955$, $P<0.05$) and between groups 1 and 3 ($H_2=-44.819$, $P<0.05$). There was no difference found between group 2 and 3. Most horses from group 1 (n=4, 80%) reached the training criterion, two from the five (40%) in group 2 reached criterion and only one from group 3 (20%). The results of this small study suggest that immediate delivery of primary reinforcement is most effective and that as the time increases between the secondary and primary reinforcers, learning efficiency declines. These results confirm that timing is important for the efficacy of secondary reinforcement.

Keywords: clicker training; learning theory; horse; timing

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A code of welfare for horses and donkeys: establishing standards for the welfare of equids in New Zealand

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