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**Opinion by discipline: a content analysis of attitudes and perceptions regarding equine training techniques in an online discussion forum**E.A. LOFGREN<sup>\*</sup>, E.C. ALLEN, C. BRADY

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There is an increasing amount of research regarding equine training techniques and equipment exploring their physical, psychological, and behavioral impacts on the horse. However, information about attitudes and perceptions of equestrian communities regarding training practices can be elusive. This qualitative study focused on attitudes and perceptions of equestrians regarding training methods and equipment in an online discussion forum. Forum posts were chosen for thematic analysis due to their unobtrusive nature, which allowed for anonymity and candor. Three specific discipline groups from the forum were analysed: Dressage, Hunter/Jumper, and Western. Forum threads were filtered by three topic areas identified in Equitation Science literature as potential sources of compromised welfare in ridden horses: hyperflexion, spurs, and nosebands (N=144). Prevalent themes amongst all three disciplines were welfare concerns within their own discipline, negative feelings towards horse competition judges and governing bodies for “rewarding” unethical practices, and justification for utilizing certain practices or equipment. Specific to discipline, posts about hyperflexion in the Dressage group yielded themes of negativity towards judges, governing bodies, and professional riders. The Hunter/Jumper and Western groups reflected themes of not identifying hyperflexion as a concern in their sport, negative feelings about dressage, while also justifying instances where they have utilized similar practices. The topics of spurs and nosebands yielded themes of negativity towards different disciplines, knowledge deficit concerns, and justification for practices within all three discipline groups. Further implications of this research include continuing inquiry in this area and using these findings for intentional education and communication with equestrian audiences.

**Keywords:** on-line; equestrian disciplines; ethics; training; welfare**SUBTHEME: ETHICAL AND WELFARE CONSIDERATIONS IN THE EQUINE INDUSTRY**

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**The role of heart rate monitoring to assess workload during maintenance interval training in national hunt racehorses**J. WILLIAMS<sup>1,\*</sup>, K. KENWORTH<sup>1</sup>, T. JONES<sup>2</sup><sup>1</sup>University Centre Hartpury, Hartpury, Gloucestershire, GL19 3BE, UK<sup>2</sup>Fine Equinity, Cleveland, Durham, TS18 3TS, UK<sup>\*</sup>Corresponding author: [jane.williams@hartpury.ac.uk](mailto:jane.williams@hartpury.ac.uk)

Quantitative assessment of racehorse fitness levels achieved through heart rate monitoring (HRM), can aid trainers in formulating evidence-based training regimes. Despite this, HRM is not used consistently within racehorse training. This study evaluated how the maintenance workload of racehorses actively engaged in training and racing in the UK, varied across an interval-training regime (6 weeks). Fine Equinity™ HR monitoring systems collected weekly HR data (Mean HR and end HR) for 10 thoroughbred racehorses (age: 9.1±1.9 years; ability Official Rating: 127.2±7.95) during a maintenance interval training session (speed: 9m/s) on a 3 furlong (0.38m) all-weather gallop. Workload levels were determined by the same experienced National Hunt trainer. Training sessions comprise a warm-up (1000m) followed by 3 canter interval runs: 0.38km. Mean HR for each run and horses' HR at the end of each piece of work were recorded. The mean percentage of

HR maximum (%HRmean) and HREnd (%HREnd) for each horse between canter runs for individual training sessions and across the 6-week period was calculated. Friedman's analyses with Wilcoxon Signed Rank post-hoc tests (Bonferroni adjustment:  $P<0.01$ ) examined if differences in %HRmean or %HREnd occurred across the cohort and for individual horses. Racehorse workload demonstrated no significant sequential increases within training sessions ( $P>0.05$ ), despite trainer perception that this did occur. For the majority of runs (70%) horses worked above medium intensity ( $>75\%$  HRmax;  $>173$ bpm), exceeding aerobic thresholds and the targeted maintenance workload. Increasing industry understanding of how HRM can be used to monitor fitness within training can prepare horses appropriately for racing.

**Keywords:** training; horseracing; heart rate; fitness; equine; welfare

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**It's all about the sex: preconceived ideas about horse temperament based on human gender and horse sex**K. FENNER<sup>1,\*</sup>, G. CASPAR<sup>1</sup>, M. HYDE<sup>2</sup>, C. HENSHALL<sup>3</sup>, N. DHAND<sup>1</sup>, F. PROBYN-RAPSEY<sup>4</sup>, K. DASHPER<sup>5</sup>, P. MCGREEVY<sup>1</sup><sup>1</sup>University of Sydney, Camperdown, 2006, NSW, Australia<sup>2</sup>HD Writing and Educational Services, Canberra, 2604, ACT, Australia<sup>3</sup>Charles Sturt University, Wagga Wagga, NSW, Australia<sup>4</sup>University of Wollongong<sup>5</sup>Leeds Beckett University, Leeds, UK, LS6 3QS<sup>\*</sup>Corresponding author: [kate@kandooequine.com.au](mailto:kate@kandooequine.com.au)

An online survey was conducted to explore preconceptions of horse temperaments based on horse sex. The questionnaire required respondents to allocate three hypothetical horses (either a mare, gelding or stallion) to four riders – a man, woman and female and male child. Family members were described as equally capable of riding every horse and each horse was described as suitable for all riders. There were 1,233 survey respondents, 75% of whom were riders with at least eight years of experience. Binomial logistic regression revealed the girl had 2.5 times the odds of being allocated a gelding compared to the boy ( $P<0.001$ ). Respondents were significantly more likely to allocate the stallion to the man and nearly 50% of participants did not allocate a horse to the boy even though they ranked rider sex as least important to their choice ( $P<0.001$ ). When asked to select a positive or negative descriptor from a series of nine paired terms to describe horse temperament, a greater proportion of respondents assigned geldings positive ratings on terms such as calm, trainable, reliable and predictable. Participants were also asked which horses were most suitable for three equestrian disciplines: show-jumping, dressage and trail-riding. The current findings indicate that respondents allocated favourable attributes to geldings and preferred them for equitation. The results suggest that riders engage in the horse-human dyad with strongly biased, preconceived ideas about temperament based at least in part on the sex of the horse. This could have far-reaching implications for training and welfare.

**Keywords:** horse-human dyad; gender stereotype; bias; temperament

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**Selection of suitable personality traits evaluated via linear traits in American Quarter Horses**P. BOSCH<sup>1</sup>, U. KÖNIG V. BORSTEL<sup>2</sup>, S. KUHNKE<sup>2,3,\*</sup><sup>1</sup>HFVU Nuertingen-Geislingen University, Nuertingen, Germany<sup>2</sup>University of Kassel, Kassel, Germany<sup>3</sup>Deutsche Quarter Horse Association e.V., Aschaffenburg, Germany<sup>\*</sup>Corresponding author: [s.kuhnke@arcor.de](mailto:s.kuhnke@arcor.de)

Equine personality traits are of major importance to training success as well as equine welfare, but at present, suitable assessment methods for use in genetic selection are scarce. The aim of the study was to select the most suitable traits out of a variety of behavior traits assessed experimentally during breed shows for incorporation into breeding horse evaluations. For this purpose, mature ( $n=48$ ) American Quarter Horses and foals ( $n=198$ ) were observed during various procedures during their participation in breed shows. A variety of behavior traits considered to be relevant for ease of training or safety were recorded and evaluated using a linear scale ranging from -2 (e.g. complete absence of the behavior pattern) to 2 (frequent occurrence of the behavior pattern) by an experimenter. Most traits deviated from a normal distribution (Kolmogorov-Smirnov:  $P<0.01$ ), indicating that prior selection for these traits either at the genetic or phenotypic level have already taken place (Kolmogorov-Smirnov: all  $P<0.0001$ ). Foals that were perceived as more 'bright' by the observers, carried their tail higher ( $r_{246}=0.2$ ,  $P<0.01$ ), kept a larger distance from their dam ( $r_{161}=0.4$ ,  $P<0.0001$ ) and showed more exploration of the environment ( $r_{184}=0.2$ ,  $P<0.001$ ). Temperament correlated strongly with calmness ( $r_{246}=0.7$ ,  $P<0.0001$ ) and the overall impression during free-running (high-spirited,  $r_{246}=0.8$ ,  $P<0.0001$ ). In view of these results, reducing the number of traits to a few of the most relevant and objectively assessable traits appears to be justified. Ultimately, identification of, and genetic selection for, suitable behavior traits might ease training and improve both equine welfare and human safety.

**Keywords:** personality; character; temperament; human-horse interaction; breed show

## THEME: CHANGE

### SUBTHEME: MEASURING EQUINE BEHAVIOR

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#### Through their eyes: the challenge of assessing equine emotional state

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Animal welfare assessment has traditionally relied on measures of physical health and changes in behavior and physiology related to negative emotional states such as pain and stress. However, it is now widely accepted that good welfare is not simply the absence of disease or negative experiences, but also the presence of positive experiences such as pleasure. The development of an 'Equine Quality of Life' (EQoL) framework is essential for providing horse owners, riders and practitioners with an evidence-based instrument for assessing the overall life experience of horses. It is therefore necessary to be able to appraise both the physical and mental well-being of a horse in relation to situations and events that it experiences during its working lifetime. To date the emotional significance of the animal's response has been overlooked. A seemingly objective physiological measures, heart rate, has been found to reflect arousal level rather than emotional valence, and furthermore behavioral signs do not always reflect physiological responses. However, assessment of motivation to approach or avoid as an indicator of positive/negative response, as well as fear- and aggression responses may be better behavioral indicators of emotional state. Methods used in non-equid species such as cognitive bias testing have yet to be used successfully in horses. The characterization of equine emotional response in terms of arousal level and valence, using validated equine-based indicators can lead to the development of an Equine Quality of Life (EQoL) framework against which the impact of different situations and experiences on horses during their lives.

**Keywords:** emotion; mental state; cognition; behavior; Equine Quality of Life

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#### The effect of different bits, bridles and rein handling on rein tension and muscle trigger point reaction

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Muscular condition and equipment are considered to influence equine performance, however, their interactions with rein tension have not been investigated. The study aim was to investigate the effect of different bits, bridles and the horse's muscle trigger point reactions on the magnitude and symmetry of rein tension in Western (W, 61 rides) and English (E, 46 rides) riding styles. Mean rein tension was measured in 65 riders and 88 horses in walk, trot and canter in both directions with either snaffle bits or curb bits. Twenty eight muscle trigger points (irritable spots in the fascia surrounding skeletal muscles) were assessed bilaterally and categorized according to the reaction to manual pressure (reaction level 0-3). Mixed-model analysis

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#### The Australian equine industry

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Since the introduction of horses in 1788, the equine industry has developed to be one of the top ten industries in Australia with an estimated contribution of over 6.3 billion dollars to Australia's Gross Domestic Product. The Australian equine industry comprises of a range of disciplines including racing, dressage, eventing, showjumping, pony club, cutting, reining, stock work, polo, polo cross, drafting and pleasure riding. There are few countries where the Thoroughbred has played such a significant part in the development of a national identity and culture as the race horse in Australia. Due to the high wastage rates in the horse racing industry, community concerns are increasing over animal welfare. These wastage rates reflect on the industry as a whole and in recent years the development of re-homing, re-training and rehabilitation centres has provided an avenue for retired race or performance horses into a new career. These enterprises may assist in a decrease in overall wastage and have been adopted well beyond the Thoroughbred racehorse. The development of Equine Welfare Strategies throughout disciplines is designed to shape a culture in which the welfare and safety of horses is paramount. These strategies are developed through industry collaboration, extensive consultation with industry stakeholders and experts and are established to set strong objectives and priorities for the future. The introduction of these strategies may increase understanding of animal welfare requirements and have a positive change in an industry where horses are so ingrained in the nation's culture and history.

**Keywords:** equine industry; welfare; wastage; economy; culture

