

The use of Negative Reinforcement in Training Foals (*Equus caballus*) to Lead

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Introduction

- Horses are used worldwide for a range of activities. Their usefulness and welfare is strongly influenced by their trainability, which may be influenced by learning ability. Handling and riding horses can expose both handler and horse to considerable risk of injury as inappropriate training techniques result in horses exhibiting conflict behaviours. This risk can be reduced by employing correct handling procedures that can facilitate learning in horses. As with all training, efficacy is influenced by consistency and timing.
- Using traditional negative reinforcement training techniques on naïve subjects, the aim of the current project was to determine the optimal timing of negative reinforcement during leading training.

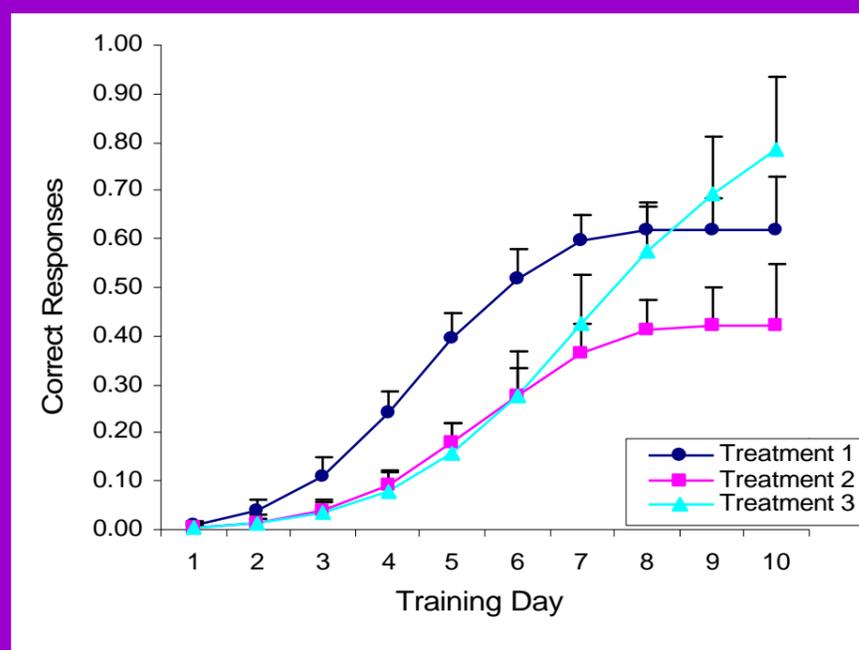
Materials and Methods

- Sixteen unweaned naïve foals of warmblood (WB), thoroughbred (TB) or WB x TB breeding were randomly assigned to 3 treatment groups for testing on 10 training days at approximately 14-day intervals. (ACEC: OAC/1-2003/3/3705).
- Treatment 1: reinforce (release of pressure) immediately as the first foreleg step commenced.
- Treatment 2: reinforce when the second step of the forelegs was completed.
- Treatment 3: reinforce when the fourth step of the forelegs was completed.
- Pressure applied to a headcollar via a lead rope was the stimulus given for each foal to walk forward, this was repeated until the foal had walked 8 m.



Results

- The proportion of correct responses exhibited by the foals was significantly different between training days ($P < 0.001$) and treatment groups ($P < 0.001$).
- Initially the foals undergoing Treatment 1 appeared to learn more quickly than those foals in Treatments 2 and 3. However, the foals undergoing Treatment 3 ultimately achieved significantly ($P < 0.001$) more correct responses than the foals in Treatment Group 1.
- While some conflict behaviours were shown in all treatment groups, most were exhibited on training days 1 and 2 ($P < 0.001$) which differed from training day 3 and training days 1 - 3 differed ($P < 0.001$) from training days 4 - 10.



Conclusions

- Shorter delays in reinforcement may be more effective for rapid response acquisition.
- Longer delays in reinforcement may be more effective for refining responses. Although, this trial lasted only 10 training days, so it may be that with a longer trial, different trends would appear.
- The transition from response acquisition to refining the response occurred after 7 training episodes.
- This analysis of everyday training has implications for all horse trainers, as conflict behaviour and wastage in the horse industry could be avoided if correct timing of reinforcement is applied.

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