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## Highlights

- This study explored attenuation of fear through social transmission in groups of horses.
- Naïve horses grouped with a habituated demonstrator showed reduced fear reactions.
- Inclusion of a habituated adult horse into groups of young horses may help attenuate fear reactions.

## Abstract

Transmission of fear and attenuation of fear within groups of farm animals remain relatively unexplored, despite the importance for human and animal safety. This paper reports the results of two separate experiments, aiming to explore social transmission of habituation in horses at group level. In Experiment 1, the effect of a same-age demonstrator was investigated in eight groups of four 2-yr old horses ( $n = 32$ ). The socially highest-ranking horse (determined through feeding tests) in each group was used as demonstrator. Half of the demonstrators were habituated to the sudden appearance of a stimulus while feeding from a container in a test arena, and the other half remained non-habituated. During testing, each group member fed from containers placed in a semi-circle to control for position during stimulus exposure. Behavioural reactions (on a scale of 0 to 4; 0 being no reaction, and 4 being a flight response), latency to resume feeding after exposure, and heart rates were recorded for all naïve horses. Behavioural reactions were reduced ( $P = 0.024$ ) in groups with habituated demonstrators, whereas latencies and heart rates were not significantly affected. In Experiment 2, a similar set-up was used to investigate the effect of adult, habituated demonstrators ( $n = 32$ , one adult and three 2-yr old horses per group). Naïve horses grouped with a habituated, adult demonstrator showed reduced behavioural reactions ( $P < 0.001$ ), latencies ( $P = 0.002$ ) and a tendency towards lower heart rate responses ( $P = 0.065$ ), compared to naïve horses grouped with non-habituated adult demonstrators.

This suggests that social transmission of habituation from experienced group members can lead to attenuation of fear in groups of young horses. The result may have important practical applications since fear reactions in horses lead to a high number of serious injuries and human fatalities every year.

Keywords:

[Fear reaction](#), [Habituation](#), [Horse](#), [Observational learning](#), [Social transmission](#), [Social modelling](#), [Safety](#)