

A new approach to horse welfare based on systems thinking

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Abstract

Globally, calls for change in the horse industry to prioritise the health and well-being of domestic horses (*Equus caballus*) are reaching a critical threshold. Horse behaviour deemed undesirable or inconvenient by owners (henceforth referred to as undesirable behaviour) is reported across all aspects of a horse's life and may indicate a welfare issue. This study proposes a reconceptualisation of undesirable horse behaviour as a complex challenge based on systems thinking. Emerging from the natural sciences, systems thinking is an interdisciplinary approach to complex challenges (such as undesirable behaviour) as dynamic, highly interconnected networks of components and feedback relationships. This critical literature review examined the undesirable behaviours studied, the disciplines conducting research and their underpinning assumptions to identify opportunities for approaching research differently. Four themes emerged from the literature: undesirable behaviour is typically studied with unarticulated assumptions and in individual disciplines; behaviours are typically studied in isolation with the complexity of horse-human interactions generally not considered; management of behaviour typically has an anthropocentric linear 'cause and effect' focus; and solutions to undesirable behaviour are often short-term 'fixes' resulting in poor horse outcomes. From these, we outline the opportunities that each provide the next generation of horse research in terms of interdisciplinarity, systems thinking and management. Undesirable horse behaviour in a horse-human system is conceptually mapped in terms of factors associated with the behaviour (eg housing, stress, diet), and the relationships between them. Systems thinking offers a way to integrate multiple disciplines and identify and navigate new solutions to promote horse welfare.

Keywords: animal welfare, horse behaviour, horse training, stereotypy, systems thinking, undesirable behaviour