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Application of learning theory in horse rescues in England and Wales

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ABSTRACT

In England and Wales the welfare of animals, including horses, is protected by the Animal Welfare Act 2006. Welfare agencies play a role in the investigation of equine welfare concerns and catching, containing, transporting and boarding (caring for) horses that have been rescued. Horses regularly have to be rescued in difficult circumstances from challenging and potentially dangerous environments. Equitation science uses a multi-disciplinary approach to objectively explain horse-human interactions and determine the efficacy of horse training practices and their impact on the horse. This paper reviews common horse rescue practices used by welfare agencies in the UK and evaluates them using a learning theory-based equitation science framework to determine whether they are effective, humane and safe. Due to the debilitated state many horses are found in physical health is often prioritised over psychological well-being, and the rescue process itself has the potential to negatively impact on the horse's mental state, for example through flooding and learned helplessness. Anecdotal evidence suggests that rescue personnel may not fully understand how horses learn, particularly with regards to the use of negative reinforcement. In addition, there may be a lack of appreciation that all horse-human interactions are potentially part of a learning process that result in the horse being trained. Rescue practices may inadvertently trigger fear responses and behaviours indicative of conflict, potentially putting human safety at risk and contributing to the development of fearful, dangerous and/or unwanted learned behaviours that require re-training at a later date. Ultimately, such practices may negatively impact on the horse's recovery and affect the charity's ability to successfully re-home the horse. This review highlights the need for welfare agencies to continue to develop their knowledge and skills in the light of new evidence, particularly with regards to the ethology of horses, their mental abilities and how they learn. Further research is also needed to elucidate the true impact rescue practices have on both the short and long-term welfare of the horse.

1. Introduction

In England and Wales, the Animal Welfare Act 2006 is the primary legislation that protects and promotes the welfare of animals, including horses. The Act places a duty of care on those responsible for horses to meet their needs, which include the need for a suitable diet; the need for a suitable environment; the need to exhibit normal behaviour; any need to be housed with, or apart from, other animals; and, the need to be protected from pain, injury, suffering and disease (Crown, 2007a,b). Enforcement agencies base their assessment of a horse's welfare state on the extent to which the needs outlined in the Animal Welfare Act are met. Equine prosecutions are generally brought where a person's actions, or failure to act, has resulted in the horse physically and/or mentally suffering unnecessarily; or where the person/people responsible for the horse have failed to meet its needs to the extent required by good practice (Crown 2007b).

A number of welfare charities support the enforcement agencies by assisting in the investigation of equine welfare concerns and catching/containing, transporting and boarding (caring for) horses rescued as a result of welfare compromise. Enforcement agencies and charities (hereafter known as 'welfare agencies') may also perform similar functions when dealing with horses found straying, abandoned or fly-grazed (where horses are deliberately left to graze on public or private land without permission) (Anon, 2014, 2012). According to a 2014 report, fly-grazers represented a major proportion of the horses admitted by welfare charities in the previous 3 years (Anon, 2014). An organisation may attend a rescue involving one horse only or they may be one of a number of organisations assisting in the rescue of large groups of horses, which need to

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be removed at the same time or on the same day. Once rescued and rehabilitated, the aim of many organisations is to re-home the horse, temporarily or permanently, in order to create space for another horse.

When a horse is rescued its background and learning history are usually unknown and it will often be experiencing a range of health problems. The horse may previously have been habituated to human contact and been trained to lead. However, conversely it may have had little or no human contact prior to being rescued or have been badly treated or abused and associate humans with fear and/or pain, which pose additional challenges for rescue personnel.

Horses regularly have to be rescued from extremely challenging and potentially dangerous environments, and in very difficult circumstances, for example where the owner/keeper responsible for the horse attempts to disrupt/prevent the rescue operation. In addition, welfare agencies will only have been able to observe the horse in its environment for a short period before having to decide on the most appropriate way to conduct the rescue.

Equitation science seeks to objectively evaluate horse-human interactions using multi-disciplinary methodologies, including ethology and learning theory, and identify training approaches that are effective, humane and safe (Goodwin et al., 2009; Pierard et al., 2015; Randle, 2011; Starling et al., 2016). A small number of UK-based welfare charities have publically promulgated the benefits of applying the principles of learning theory to the handling and training of horses, but the number of organisations that consciously apply these principles in their day-to-day work, including rescues, is currently unknown. Anecdotal evidence suggests that the majority of rescue personnel have not received training in the science of how horse's learn and may instead rely on traditional/alternative explanations of behaviour and training. This review examines common horse rescue practices used by welfare agencies in the UK and evaluates them using an equitation science framework to determine whether they are effective, humane and safe.

2. Why should rescue practices be evaluated?

Organisations and personnel involved in rescues do so with the aim of alleviating horses' suffering, but due to the debilitated state many horses are found in physical health is often prioritised over psychological well-being. Humans can behave in ways that confuse, frustrate and frighten horses (Starling et al., 2016) without fully appreciating that it was their behaviour that triggered a particular response from the horse. Those working with horses may inadvertently trigger flight responses and be seen as a threat the horse needs to escape, or be driven away by the horse (Starling et al., 2016). Animals displaying aggressive behaviours frequently learn that threats and attacks are reinforcing because they reduce the threat posed by the presence of humans (McGreevy et al., 2007). Horses are learning all the time (McGreevy et al., 2014) regardless of whether humans think they are training them or not (Pearson, 2015a). Unwanted behaviours can develop because they have been inadvertently 'rewarded' and consequently trained (Hockenhull and Creighton, 2014). This is an extremely important point as rescue personnel might not view a rescue operation as a learning process that results in the horse being trained in some way. The term training should therefore be used to encompass all ground-based horse-human interactions, as well as handling and riding.

Naïve horses may be frightened of being handled but are rarely aggressive, instead preferring to avoid human contact (McGreevy et al., 2007). The danger posed by horses when highly aroused and fixated on creating distance between themselves and a perceived threat is significant (Starling et al., 2016) and reducing fearfulness is a critical element in safe and humane horse training practices (McGreevy et al., 2014). The likelihood of a horse exhibiting dangerous flight behaviour is increased by lack of competence in handlers, deficits in prior handling or past training, and the extent to which the horse is already primed with adrenalin secondary to trauma, pain (McGreevy et al., 2014) or fear. Horses that have actively learned to be aggressive may also be extremely dangerous and unpredictable (McGreevy et al., 2007). Difficulties with handling horses are likely to be exacerbated by inadequate facilities (McGreevy et al., 2007). Rescue personnel are frequently required to deal with frightened, naïve and aggressive horses in environments that are far from ideal, which may increase the risk of injury significantly. This risk may even be increased when the horse is being cared for in a more controlled environment at a boarding establishment. However, data concerning the incidence and type of injuries suffered by personnel dealing with rescued horses are not currently publically available.

Inappropriate training practices can affect learning and have a negative impact on a horse's welfare, potentially leading to confusion and the development of flight responses and behaviours indicative of conflict (McLean, 2005). Furthermore, if the horse associates a stimulus, such as people, with a negative experience, it can establish a fearful memory that can itself cause a fear response (Le Doux, 1994). Horses that develop strong fear responses and associations during a rescue may continue to be fearful post-rescue when in the care of the boarding establishment. Chronic fear can cause illness and change social behaviour (Leiner and Fendt, 2011), which may negatively impact on the horse's recovery. Understanding fear responses is central to making good training decisions (McLean and McGreevy, 2010).

The same people are seldom responsible for the whole rescue operation and caring for the horse post-rescue. In many situations multiple personnel or organisations are required, and some may be involved in certain aspects of the rescue only, such as catching/containing and loading the horse onto a vehicle. As a result, rescue personnel might not fully appreciate the positive or negative effects their actions may have. Naïve horses with minimal experience of humans have little potential to predict human actions on the basis of any learning (Birke et al., 2011), which gives rescue personnel the opportunity to create positive associations from the outset. However, rescue personnel also have the potential to inadvertently contribute to the development of dangerous, fearful or unwanted learned behaviours that can negatively impact on the welfare of the horses and affect the safety of the people subsequently caring for them. Ultimately, this can affect the horse's recovery and/or the charity's ability to successfully re-home the horse.

3. Evaluating rescue practices

Effective and humane training takes into account the animal's ethology and mental abilities, and reflects the correct application of learning theory (McGreevy and McLean, 2007; McLean, 2005). One of the obstacles to effective horse training is poor understanding of learning theory (McGreevy, 2007). Knowledge of the horse's ethology, learning processes and mental abilities will assist rescue personnel in employing practices that keep stress and fear levels low, enable the horse to understand what is being asked of it, and avoid confusion and the performance of behaviours indicative of conflict. Rescue personnel will also be able to 'think outside the box', adapting their knowledge to different contexts and successfully applying it to the challenging rescue situations that so often arise.

Horse-related injuries to human beings are quite common, and can have a profound effect on the quality of life of the human being affected. Data published by The Royal Society for the Prevention of Accidents (RoSPA) indicate that of the 104 recorded horse related

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