Chapter 1

Introduction

1.1   Background and Rationale

Horses are kept for a variety of purposes such as competition, breeding, pleasure, working and companionship, and in these situations horses are often faced with an array of unnatural situations to which some horses seem to adapt more readily than others (Visser, 2002). These individual differences in coping are of welfare concern, for the wellbeing of an individual largely depends on whether it can cope with the environmental challenges it faces in life (Broom, 1998). This has led to the search for suitable methods of selection of horses with characteristics to fit a desired goal such as show jumping (Visser et al., 2003) or therapeutic riding (Anderson, Friend, Evans, & Bushong, 1999).

These individual differences can be described as a horse's personality (Gosling, 2001) and may be defined as "those characteristics of an individual that account for consistent patterns of feeling, thinking and behaving" (Pervin & John, 1996, p. 4). Although most owners recognise the relevance of the personality of their horses, hardly any efforts have been made so far to objectively quantify a horse's personality (Visser et al., 2001). An ability to predict behavioural responses by means of a simple quick and practical test would be a huge asset to many in the equine industry, as people would be better able to select individual horses suitable for a particular job (Seaman, Davidson, & Waran, 2002).

Such tests could also benefit the mounted police in selecting horses suitable for the job of a police horse. As training a police horse takes considerable time and money, the availability of a tool that could predict suitability prior to commencing training of a horse as a police horse, would allow the selection of the horses most suitable for the role. This should reduce costs for trainers and improve horse welfare by avoiding the training of inappropriate horses (Lloyd, Martin, Bornett-Gauci, & Wilkinson, 2007). Currently, police horses are selected primarily by their age, breed, height, health status and personality (Thames Valley Police, n.d.). Their personality is assessed by trainers riding prospective horses and depends upon the experiences and subjective judgement of the trainers (Merseyside police, n.d.). However, this method does not predict how a horse would respond to various environmental challenges.

Novel and/or unexpected noises can affect the performance of a horse when instinctive responses are to flee from the potential threats (Napolitano et al., 2007) and it is important that a police horse is not overly reactive in these situations to avoid endangering the public, the rider and themselves. Police horses have a unique job, as they are required to undertake a number of roles. They are used to assist with public order and major crime incidents, conduct both local and box patrols where they attend football matches and other sport events where their presence is invaluable (Thames Valley Police, n.d.). They also have a strong community role, where they visit and have visits from schools and attend community events (Merseyside police, n.d.).

To cope with these diverse situations, police horses require a certain type of personality. Horses need to be gentle yet bold, good with children and adults, have the ability to cope with large crowds of people, be willing to load into a horsebox and to carry out patrols on busy roads (Thames Valley Police, n.d.).

Two main methods for obtaining information about individual differences in animals' behaviour have been identified by Manteca and Deag (1993). These include subjective ratings of behavioural traits by people familiar with the animal, and objective behavioural coding of an animal's behaviour in response to standardised behaviour tests. This study was designed to explore the latter of these methods.

Several objective behavioural tests have been reported in the literature to measure personality, including novel object tests (e.g. Wolff, Hausberger, and Le Scolan, 1997; Seaman et al., 2002), handling tests (e.g. Visser, 2002; MacKenzie and Thiaboutot, 1997) and social isolation or open field tests (e.g. Seaman et al., 2002; Hausberger and Muller, 2002). However, for behaviour tests to be of any use they need to be feasible, reliable and valid (Martin & Bateson, 1993), which with notable exceptions many of the studies in this area have failed to address (Seaman et al., 2002).

Reliability refers to the purity and consistency of a measure and assesses the extent to which the same results would be obtained again if the measure were to be replicated (Oppenheim, 2006). The key test for assessing reliability in personality assessments is demonstration of the test-retest

reliability (Martin & Bateson, 1993). This assesses whether an animal will behave in the same way over two or more trials. The problem with this test of reliability is the risk of habituation, which is defined as the waning of responsiveness towards a repeated stimulus that does not result in any reinforcement (negative or positive) (Christensen, Zharkikh, & Ladewig, 2008). This risk can be reduced by avoiding the repetition of tests in quick succession of each other (Seaman et al., 2002). Another important criterion is inter-observer reliability, which assesses the degree to which other people can replicate the tests and achieve the same data when scoring the same trial (Martin & Bateson, 1993).

Validity indicates the degree to which an instrument measures what it is intended to measure (Oppenheim, 2006). Oppenheim (2006) describes one method of establishing validity known as concurrent validity, which shows how well the measure correlates with an external evaluation of the construct being measured, in this case a police horse's suitability for its role. Researchers have used two different techniques to establish the concurrent validity of their tests in assessing suitability- some have used an objective measure (practical test) of animal's performance such as show-jumping performance (Visser et al., 2003), others have used a subjective score of suitability (questionnaire) such as scores given by riding instructors on the horses' suitability at their roles (Le Scolan, Hausberger, & Wolff, 1997).

Past studies of standardised behaviour tests have made claims regarding their use in predicting suitability for a role, such as selecting police dogs

(Slabbert & Odendaal, 1999), therapeutic riding horses (Anderson et al., 1999) , search dogs (Rooney, Gaines, Bradshaw, & Penman, 2007), guide dogs (Serpell & Hsu, 2001) and show-jumpers (Visser et al., 2003). Some authors assess the concurrent validity of the tests as predictors by comparing the test results with a measure of the animal's performance at that particular job.

Slabbert and Odenal (1999) used a set of objective behaviour tests on puppies to predict whether they would become good police dogs. A dog was determined to be a good police dog if it passed a patrol dog training course. They found the majority of their tests to be reliable predictors of police dogs' suitability. Visser et al. (2003) also used performance as a measure of validity in their study assessing the use of behaviour tests in predicting show-jumping performance. The reactions of young horses to a set of behaviour tests were measured. When the horse reached the age of 37 months, its performance as a show-jumper was assessed by measuring its behaviour during training and by jumping a novel course. Some significant correlations were found between the behaviour test scores as youngsters and a horse's jumping performance at 37 months, indicating some potential of these tests in predicting suitability.

Other authors used a questionnaire on performance completed by a knowledgeable handler to assess the validity of their standardised behaviour tests in measuring suitability. Rooney et al. (2007) compared subjective ratings given by search dog trainers with behavioural measures from a set of

search tasks. They found the results of search assessments to correspond well with trainers' ratings of search performance. Anderson et al. (1999) also used a questionnaire to assess the temperament of therapeutic riding horses. They found some correlation between standardised behaviour tests and subjective scores, indicating that the tests used in their study had the potential to predict suitable horses. A questionnaire was used by Serpell and Hsu (2001) to assess guide dog suitability, they used this to investigate whether puppy raisers can predict the suitability of the dog as a guide dog. They compared their results with independent assessments made by guide dog trainers and found the questionnaire to be a valid and reliable tool in predicting a dog's suitability as a guide dog. On the basis of these findings the use of a questionnaire to assess suitability was adapted for the present study. Justifications for this are described in Chapter 5.

As well as being reliable and valid, the feasibility of the standardised behaviour tests also needs to be addressed. Tests must be practical and appropriate for wide spread commercial use (Taylor & Mills, 2006). The extent to which these issues have been addressed in past studies are explored in the literature review in Chapter 2.

1.2 Aim and Objectives

The aim of this study was to determine a set of objective behaviour tests for the selection of horses with a personality suitable to train as police horses. Tests were chosen from those presented in the literature that claimed to predict underlying personality or behavioural traits and that were practical

and suitable for use in industry-typical settings. These tests were then examined for reliability and validity as selectors of suitable horses for police training. This was achieved by comparison of the test responses of actual police horses with their trainers' assessment of their suitability for their role. In order to do this, a subjective scale of suitability was developed as a reliable and valid measure of police horse suitability for use.

These aims and objectives are summarised below.

Aim

Determine a set of objective behaviour tests for the selection of horses with a personality suitable to train as police horses.

Objectives

1) Scrutinise the standardised behaviour tests for horses presented in the research literature and adapt them to produce a set of practical tests for use in the equine industry.

2) Assess the reliability of these behaviour tests (test-retest and inter-observer)

3) Develop a reliable and valid subjective scale to assess suitability of police horses in their roles.

4) Assess the validity of the reliable behaviour tests by comparing them with the police horse's suitability scores.

1.3   Structure of the dissertation

The dissertation is structured into the following chapters.

Chapter 1 – introduction - this chapter sets the scene for the research and justifies the aim and objectives of the study.

Chapter 2 – literature review – this gives an overview of the history and current selection of police horses. The types of standardised behavioural tests that have been used in previous studies the extent to which the concepts of reliability, validity and feasibility have been addressed are then examined. The ways in which these tests could be adapted for this present study were considered in this review. The review also examined the methods of assessing an animal's suitability.

Chapter 3 – methodology –this chapter firstly describes the research strategy and then explains how the methods and measures were developed for each of the standardised behaviour tests used in this study, and considers the ethical issues associated with them, it also describes the procedures used to conduct the tests.

The following two chapters present separate results and summaries or discussions.

Chapter 4 – reliability assessment of the standardised behaviour tests – the tests were assessed for reliability using riding school horses. This chapter

describes the methods, results and discussion of this assessment. Test-retest reliability was established for all the tests, and also tests were also explored for evidence of habituation. The reliable tests were also subjected to inter-observer reliability.

Chapter 5 – development and reliability testing of the suitability for use questionnaire for police horses – this was developed to assess the validity of the standardised behaviour tests in assessing a police horse's suitability for its role. This chapter describes the development of the questionnaire and its reliability assessment.

Chapter 6 - validity assessment of the standardised behaviour tests – comparisons of the suitability for use questionnaire scores and standardised behaviour test responses of police horses, to assess whether the standardised behaviour tests are a valid tool for assessing a police horse's suitability.

Chapter 7 – Discussion of the overall aim of the study – the use of standardised behaviour tests in predicting police horse suitability. This provides an overview of the findings and their implications. The discussion also provides suggestions for future research.

Chapter 8 – overall conclusion of the study.