The effect of environmental enrichment and visitors on the behaviour and welfare of two captive hamadryas baboons (Papio hamadryas)

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Abstract

The welfare of zoo animals depends on a combination of physical, social, dietary and other ecological characteristics of the captive setting. We analysed the influence of the transfer of an adult couple of hamadryas baboons (Papio hamadryas) from a small and non-enriched cage that was closed to the public to a larger and enriched exhibit at the visitation area of the Sapucaia do Sul Zoological Park, RS, Brazil. A total of 350 h divided into four stages were spent observing the baboons: (i) in the non-enriched enclosure before the transfer; (ii) soon after the transfer to the enriched enclosure; (iii) six months; and (iv) 12 months after the transfer. The occurrence of stereotypic, social aggressive and social affiliative behaviours was recorded by ‘all occurrences’ sampling. The female showed a decrease in frequency of a stereotypic behaviour (spinning) and an increase in grooming in the enriched enclosure. The male showed a decrease in the frequency of certain stress-related or stereotypic behaviours after transfer, but other stress-related behaviours either increased or remained constant. The male behaviour of throwing faeces was affected by the presence of visitors. We suggest that the well-being of the female was more positively influenced by the new enclosure than that of the male, although gender differences may reflect the normal behavioural repertoire of this sexually dimorphic species.

Keywords: animal welfare, hamadryas baboon, public influence, stereotypic behaviour, stress-related behaviour, zoo animals

Introduction

The welfare of captive animals in zoos, laboratories and breeding centres has concerned scientists and animal-right activists (Shyne 2006) and a long debate has focused on determining the best strategies for improving it and for measuring the effectiveness of these improvements (Broom 1991; Fraser 2009). A common method applied for evaluating life quality of captive animals involves the identification and frequency of occurrence of stereotypic behaviours that are indicative of sub-optimal environments and that are absent in wild populations (Mason et al 2007). A stereotypic behaviour is “repetitive, invariant and has no obvious goal or function” (Mason 1991) and it is “induced by frustration, repeated attempts to cope and/or CNS (brain) dysfunction” (Mason et al 2007).

The goals of environmental enrichment of captive settings are improving welfare, reducing stereotypic behaviours and increasing the behavioural repertoire of captive animals (Swaisgood & Shepherdson 2005). Environmental enrichment is defined as “an animal husbandry principle that seeks to enhance the quality of captive animal care by identifying and providing the environmental stimuli necessary for optimal psychological and physiological well-being” (Shepherdson 1998). Techniques of environmental enrichment can be food-associated, physical, sensorial and social among others (Hones & Marin 2006). According to Swaisgood and Shepherdson (2005) and Shyne (2006), most experiences of environmental enrichment have been successful in improving welfare. Successful examples with captive non-human primates involve feeding (Reinhardt & Roberts 1997), social (Eaton et al 1994; Schapiro et al 1996) and physical (more complex enclosures: Mallapur et al 2005) enrichments.

In addition to physical, social, dietary and other ecological limitations, captive animals, especially at zoos, are exposed to the presence of human observers (visitors or staff members) that can affect their welfare. This “effect of the public” is observed in primates and other animals (Davey 2007), and although there is no consensus on whether zoo visitors have a neutral, negative or positive effect, most studies suggest that the interaction with humans stresses captive animals (Hosey 2000, 2005). The response to visitors also shows a considerable intra- and inter-specific variation, justifying further studies on this issue (Chamove et al 1988).

In this study, we analyse the effect of physical enrichments on the behaviour of an adult couple of hamadryas baboons...