

2003 Wally McGreevy Award Winning Essay

Environmental enrichment and welfare in caged parrots

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Introduction

Pet and aviary parrots are among the most popular pet species in Australia. These birds are considered non-domesticated species (Evans, 2001) and provision of adequate environments requires an understanding of the ecology of the individual species. Frequently, parrot owners do not have this knowledge, a shortcoming that results in a number of welfare issues for caged parrots. Abnormal behaviours that may be indicative of welfare issues include feather picking, stereotypies, excessive vocalisation, fearfulness and aggression. Importantly, many of these behaviours are also perceived by parrot owners as undesirable, and may contribute to a decision to dispose of a pet bird. It has been suggested that provision of appropriately enriched environments and the companionship of conspecifics can reduce the development and performance of abnormal behaviours. This paper will examine the results of three studies into environmental enrichment and the development of abnormal behaviours in young Orange-winged Amazon parrots (*Amazon amazonica*).

Discussion

Feather picking of psychogenic origin has often been attributed to a captive environment lacking sufficient stimulation, particularly companionship and opportunities to forage (van Hoek and King, 1996). It is a significant problem in caged parrots, with some research suggesting one in ten captive parrots may be affected (Grindlinger, 1991). Meehan et al. (2003a) assumed the act of foraging was a behavioural need for parrots and the thwarting of this behaviour resulted in a displacement activity of foraging-like behaviours directed towards the feathers. They conducted a study to examine the effect of providing foraging opportunities and a more complex physical environment on feather picking behaviour in young Orange-winged Amazon parrots. The study evaluated two groups of eight parrots housed singly in either enriched or unenriched cages over a period of 48 weeks. Cages were enriched either by increasing physical complexity or by placing food into devices that required the birds to engage in foraging behaviours to obtain it. Feather condition was assessed at regular intervals according to a ten point system and all birds received veterinary checks to rule out medical causes for feather picking.

Their results showed improved feather condition was strongly related to an enriched environment. They also found that foraging enrichment devices were utilised more frequently than physical enrichments. The study contradicted previous research into feather picking behaviour by noting that feather condition did not just stabilise in an enriched environment (van Hoek and King, 1996), but began to improve in a relatively short time frame.

Meehan and Mench (2002) conducted another study on a similar group of 16 Orange-winged Amazon parrots over a one year period to assess the effect of environmental enrichment on fear and exploratory responses. Parrots (n=8) were housed singly while eight parrots in an enriched group were given both physical and foraging enrichment devices. Fear response was assessed by recording the time taken to approach a novel object placed in their cage and noting their flight distance when placed next to an unfamiliar human handler. Exploratory behaviour was assessed by recording the nature and length of the interaction with the novel object. Results of the study strongly supported the hypothesis that parrots from an enriched environment showed decreased fearfulness when confronted with novel objects and humans. Many captive parrots experience numerous alterations to their environment and techniques that reduce the fear response associated with such changes would be expected to improve welfare. Interestingly, the parrots from unenriched environments tended to interact with novel objects more intensely and for much longer periods, possibly displaying rebound behaviour resulting from the behavioural deprivation of their environment.

Another method of environmental enrichment in parrots, which receives very mixed support from parrot owners, is the keeping of parrots in pairs or groups. Anecdotal evidence suggests the companionship of another parrot may impact adversely on the individual bond between owners and their parrots (Evans, 2001). Meehan et al. (2003b) used a group of 21 young Orange-winged Amazon parrots to investigate the effects of isosexual conspecific companionship. Specifically, they examined the development of abnormal behaviours and the impact of these anomalies on interactions with humans. Seven pairs of parrots and seven individual birds were regularly assessed over 12 months for willingness to interact with humans, predominant activity type, development of stereotypies and screaming behaviour. Significantly, results from this study demonstrated that 57% of the birds housed singly developed stereotypic behaviours such as pacing and bar chewing, while none of the paired birds exhibited these behaviours. Single parrots also spent a greater portion of their time screaming. Additionally, no significant difference was observed between paired and single parrots in their willingness to interact with humans. The study also noted that only paired birds experienced injuries requiring veterinary attention, although the researchers could not attribute the injuries to the companion bird.

The specific focus of these papers on young Orange-winged Amazon parrots, provides limitations to the broad application of their findings. Mettke-Hofmann et al. (2002) conducted very similar studies to those of Meehan and Mench (2002) into neophobia and exploratory behaviour in 61 different parrot species. They found that neophobia and exploratory behaviour in captivity correlated to the habitat type and food source of the species in the wild. Thus welfare implications of environmental enrichments for captive parrots are likely to vary significantly between species. Additionally, these studies all used young parrots and future research should seek to replicate these results in older parrots. Finally, each of these studies used indestructible physical enrichment devices, whereas most current husbandry advice suggests that destructible toys (such as cardboard rolls) are preferred by parrots and represent a reduced cost for owners (Keeble, 2002; Evans, 2001).

Conclusion

The results of these studies demonstrate that environmental enrichment can improve the welfare of Orange-winged Amazon parrots and reduce the development of abnormal behaviours. Furthermore, anecdotal reports that companionship of conspecifics can reduce the quality of the human-animal bond with parrots were not supported by this research. Given the interaction of species' ecology and behaviour, it is apparent that more research is needed in this area. Particular benefit would be obtained from studies focussing on species that are commonly kept as pets in Australia and the use of destructible enrichment devices.

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