

# **Environmental enrichment as a method of improving welfare in captive parrots.**

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## **Introduction**

Captive parrots commonly suffer from abnormal behaviours, including feather plucking, self mutilation and stereotypies, as well as exhibiting signs of excessive fear or aggression. Each of these conditions is serious and indicates a state of compromised welfare, as they are generally considered to be signs of psychological distress and can contribute to various physical problems, such as injury and wasted energy associated with escape attempts, skin damage, infection and hypothermia. Providing parrots with an enriched housing environment, for example through conspecific companionship or complex enclosures, can reduce the incidence and development of abnormal behaviours.

## **Discussion**

Most captive parrots are given very little diversity and stimulation associated with food acquisition, which is in direct contrast to the situation that exists in the wild, where parrots spend several hours a day engaged in the selection and procurement of food. In addition, parrots in the wild are exposed to a far more complex physical environment than is commonly present in a caged situation.

Meehan et al. (2003) investigated whether feather picking behaviour in parrots was associated with constrained foraging opportunity and cages of limited physical complexity. The study involved 16 18 week old Orange-winged Amazon parrots, divided into two equal (n=8) control and enriched groups, and housed individually to eliminate effects of social enrichment. Each parrot was given the same amount and type of food per day; however the enriched group were presented with their food in foraging enrichment devices which required them to perform a variety of tasks to obtain the food, such as sorting inedible substrates, opening a container, or chewing through a barrier. The enriched group were also provided with a more complex cage setup, including moveable objects and opportunities for climbing and swinging. The authors found that all parrots in the enriched group interacted with the enrichments offered, and that there was a significant difference in feather condition between the two groups, as rated according to a 10 point scale. The feather quality of those in the control group worsened over time, while feather quality of the enriched group improved, supporting the suggestion that a lack of stimulation may lead to the development of feather picking behaviour.

Another problem common in captive parrots is that of excessive fear and aggression responses, for example when faced with novel items or human interaction. Meehan and Mench (2002) assessed the effectiveness of environmental enrichment on modifying these responses. A control group (n=8) and a group (n=8) that was exposed to various enrichments that stimulated natural behavioural skills, such as climbing and foraging, were observed over three 16 week periods. At the end of each period, the parrots were scored according to a novel object test and a handler response test. The parrots in the enriched group were quicker to approach and investigate novel objects than their control counterparts and exhibited more relaxed behaviour whilst in the presence of the object, whereas those in the control group showed more intense reactions, which included rapid movement and 'frenzied' (Meehan and Mench, 2002) chewing. The enriched parrots also had shorter durations of interaction with the objects than the control parrots. In the handler test, the degree of interaction with a familiar handler was slightly higher in the control group, but the response to an unfamiliar handler was significantly lower, whereas parrots in the enriched group showed a similar response to both familiar and unfamiliar handlers, suggesting that they were better able to use past experience with humans to evaluate the new handlers. This

is an important ability, especially in situations such as zoos, where birds are continuously exposed to unfamiliar visitors. The reaction patterns exhibited by the control group may be attributed to stark living conditions, as the longer period of exploration of novel objects and readiness to interact with familiar handlers may reflect a build-up of exploratory motivation induced by behavioural deprivation and lack of mental stimulation. The responses of the enriched group suggest that environmental enrichment can reduce fearfulness in parrots in response encounter to novel stimuli.

In another study, Meehan et al. (2003) investigated the suggestion that isosexual pair housing of parrots may reduce the incidence of abnormal behaviours, such as feather plucking, stereotypy and aggression, common in solitary environments. Parrots kept as companion animals often have no exposure to conspecifics, and hence lack the social stimulation available in wild populations. A total of 21 birds were used in the study, with seven housed individually and the remaining 14 housed in isosexual pairs. Every third month for one year, observations were made on the occurrence of behaviours such as locomotion, sleeping, preening and stereotypies, including pacing, tongue chewing and bar biting. The study found that parrots housed in pairs had significantly higher levels of activity and locomotion, and spent less time screaming and preening than those housed singularly. Additionally, none of the parrots housed in pairs exhibited stereotypy, compared to 57% of the group of single parrots.

In the wild, parrots are exposed to diverse forms of environmental stimulation, including the need to search for food and to manipulate objects during foraging, complex physical conditions and social living arrangements. In captivity, foraging behaviour is often very constricted, as is the level of complexity of cage design. Additionally, factors such as space and economic considerations frequently lead to captive parrots being housed singly, which is in stark contrast to the dynamic social groups found in the wild. As a result, captive parrots often develop abnormal behaviours, which indicate compromised psychological wellbeing, and can also adversely affect physical welfare.

## Conclusion

The results of the studies discussed in this paper indicate that providing captive parrots with an enriched environment can significantly reduce the development and incidence of these behaviours. Foraging devices and increased cage complexity are, therefore, useful tools for improving the welfare state of captive parrots. Likewise, while it would be impractical and unwise to reproduce the continuously changing social arrangements of wild populations, due to an increased risk of infection or aggressive encounters. However, the benefits of the social stimulation provided by simply housing birds in pairs significantly outweigh the risks associated with disease or injury, and bring about an improvement in the overall welfare of captive parrots.

## References

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