

Improving the well-being of captive chimpanzees

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Introduction

Traditionally, the well-being of captive chimpanzees has been measured as a function of species-specific behaviours and the absence of abnormal behaviours (Celli et al., 2003). Thus observations of wild chimpanzees and their natural behaviour are of value in determining the welfare of their captive conspecifics. In one recent study Muller (2002) observed patterns of aggression within a wild chimpanzee community and attempted to define reasons for aggression within and between groups. He identified several important factors contributing to chimpanzee aggression which could enhance management procedures of artificial chimpanzee groupings, such as those found in zoos. Another study looked exclusively at captive chimpanzees and assessed the use of tools as a means of environmental enrichment (Celli et al, 2003). This approach evaluated the experimental results by the afore-mentioned traditional method. Finally, Landau and King (2003) attempted to evaluate chimpanzee "happiness" differently, "based on the human trait of subjective well-being". These recent discoveries may enhance the welfare of the chimpanzee species by facilitating improvements in captive conditions based on a deeper understanding of their behaviour and the species in general.

Discussion

Muller (2002) attempted to describe patterns of aggression among chimpanzees in relation to sex and dominance. He also observed aggression within and between communities. To do this he observed a community of 50 chimpanzees, assigned a rank to each male member of the group and recorded the intensity of aggressive encounters and their context (eg. food competition).

Muller observed that adult males were approximately 14 times more aggressive than females. Females were only mildly aggressive towards other females in the context of food competition and infant-protection. Only one female, a recent immigrant, suffered prolonged attacks. Muller also found that most male-male aggression was due to either sexual competition or dominance rivalry. The alpha male was consistently the most aggressive member of the group. Muller observed two episodes of intercommunity hostility, one resulting in the death of a neighbouring individual. He concluded that coalitionary attacks were an effective strategy employed by male chimpanzees of one group to expand their territory and eliminate other competitive groups. Muller's findings suggest that chimpanzee aggression is strongly linked to sex and dominance ranking and this should be taken into account when altering the group dynamics of captive communities. New additions to stable groups may elicit an aggressive response from both adult male and female chimpanzees.

The discovery of other wild behaviours such as tool use, has had a significant impact on the way chimpanzees are housed in captivity, particularly with regard to environmental

enrichment. The use of tools by chimpanzees in the wild is widely recorded and include termite-fishing, water acquisition, nut-cracking and grooming (Matsuzawa, 1994, Nakamura, 2002). Celli et al. (2003) assessed the value of tool-use to induce such species-specific behaviour and discussed the implications of the study on the well being of captive chimpanzees. Captive subjects were presented with a variety of tools with which to extract honey from a bottle in a simulation of ant-fishing behaviour seen in the wild. The results confirmed that the task reduced inactivity and increased cognitive stimulation. The materials led to a "species-normative activity budget" with much more time spent foraging and manipulating tools, as is seen in the wild. Celli et al suggest that these positive developments came at a relatively low cost and thus present a possible long-term source of environmental enrichment.

In terms of Muller's study, one should more broadly consider the effect of introduction of desirable materials to a captive community. Unless the honey bottles were in abundance, they may become a source of competition within the group. Muller identified food competition as a significant source of aggression within communities. The provision of honey bottles in deficient quantities may negatively affect less dominant members of the community.

Landau and King (2003) swim against the traditional current of behavioural science in their study "Can chimpanzee (*Pan troglodytes*) happiness be estimated by human raters?". The project assessed the connection between subjective well-being (SWB), personality types and behaviour. In total, 128 captive chimpanzees at 13 zoos were rated by a questionnaire containing four items designed to describe different aspects of SWB. These were overall moods, social relationships and success in achieving goals (eg. access to desirable materials). Finally, raters were asked to imagine which of the observed chimpanzees they would like to be for a week. The personality study identified six chimpanzee personality factors, five of which are related to the recognised human 'Big Five' (extraversion, dependability, agreeableness, emotionality and openness) and an important sixth factor: Dominance. Two types of information were recorded about the subjects' behaviour: The specific behaviour and its social context (eg. agonistic, submissive). The study found that there is a significant relationship between personality and SWB and, just as in humans, high SWB individuals were more likely to be assertive members of the group.

Landau and King believe that the traditional methods of assessing well-being do not "reach into the higher realms of SWB." They suggest that subjective ratings scales give a more in-depth analysis of psychological health. The biggest limitation to this study of course is that the whole experimental method may be blatant anthropomorphism. But Landau and King (2003) address this criticism and suggest that the conscious experience of humans and our closest relatives are not so different and that similar processes underlie the similar behaviours that emerge in similar situations.

Conclusion

These three studies provide worthwhile insights into the social behaviour and psychological well-being of the chimpanzee, both captive and wild. The strong correlation between personality and well-being discovered by Landau and King does not negate the importance of environmental enrichment in any way. Nor does it diminish the value of further study of wild populations and their species-specific behaviour. Future

research in this area could focus on the relationship between personality and environment, both social and physical. Environment undoubtedly had a profound influence on well-being and could account for differences in well-being between captive and wild chimpanzee populations. Ultimately the welfare of captive chimpanzees relies heavily on our deeper understanding of their social structure and behaviour. Thus these recent studies, which further explore the inquisitive, intelligent mind of the chimpanzee and their complex communities, significantly contribute to the welfare of the species.

References

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