# YOU CAN TAKE THE CHIMP OUT OF THE COUNTRY... RELOCATING RESCUED CHIMPANZEES TO A LARGE NATURALISTIC ENCLOSURE YIELDS SURPRISING RESULTS

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Most chimpanzees (Pan troglodytes) rescued by AAP have lived at least part of their lives in unnatural conditions. They used to be kept as pets or as entertainment in circuses, which prevented them from developing normal, species-specific behaviour. What they did develop is abnormal behaviour. This is usually defined as behaviour that rarely - if ever - occurs in the wild, and serves no apparent function. It is thought that unnatural rearing and housing conditions are partly to blame.

Since AAP aims to resocialize animals and have them revert to their natural behaviour repertoire as much as possible, reducing abnormal behaviour is one of the main goals. Not only do unnatural behaviour patterns interfere with those typical of the species, but some abnormal behaviour may even be harmful. Regurgitation and reingestion is particularly worrisome, because it involves moving previously swallowed food back up the digestive tract and into the mouth, where stomach acid may over time wreak havoc on the animals' teeth. Apart from the physical consequences, abnormal behaviour may reflect psychological problems. For instance, body rocking may mimic the sensation of being held by a mother, and is especially observed in animals that were taken from their mothers at an early age. Although stressful rearing conditions may influence an animal's chances of developing abnormal behaviour, current conditions such as boredom or a lack of foraging opportunities may be involved in maintaining it.

At AAP Almere, a group of ten chimpanzees could not be relocated to a suitable outplacement partner. To accommodate these animals in large outdoor enclosures in a more appropriate climate Primadomus was developed in Spain. Covering 7.700 square metres of natural terrain, it seemed like the perfect place to house a group of rescued chimpanzees. When these animals were permanently moved from AAP in the Netherlands to Spain in November 2009, it was expected that the natural and far more spacious enclosure would noticeably reduce the amount of abnormal behaviour, while increasing social behaviour and time spent foraging and moving around.

To examine the effects of this relocation, daily behavioural observations were performed on each of the animals prior to relocation, as well as during the six months that followed it. Each observation lasted 15 minutes, during which the frequencies of several types of behaviour were recorded. A total of eleven hours of data per animal was obtained for the entire period after relocation. These data were compared with data gathered at AAP during previous years. At Primadomus, time budgets of the animals were also calculated. Management routines such as feeding, diet, and environmental enrichment remained unchanged during the entire study period. The group consisted of four males and six females, all from animal parks, circuses or private owners. Some had experienced violence at the hands of their owners, others were fed improper diets resulting in bodily deformations. All had suffered unnatural circumstances, and abnormal behaviour was observed in most of these chimpanzees at some point. The observed types of behaviour were clustered into the behavioural categories abnormal, affiliative, agonistic and activity. Statistical analyses were performed to see whether the chimpanzees, as expected, exhibited less abnormal behaviour at Primadomus than at AAP Almere. They did not.

Chimpanzees in their enclosure in Primadomus. Photo: Petra Sonius/AAP

As it turned out, the chimpanzees actually seemed to exhibit more abnormal behaviour at Primadomus, although this was not significant (P= 0.241). So formally, there was no significant difference in abnormal behaviour between the two locations. This finding does however deserve some explanation. At AAP, the mean amount of abnormal types of behaviour per observation was 1.7, while at Primadomus this increased to 7.2 per observation. This increase was mainly caused by one individual, Prudence (see Figure 1). She performed several types of abnormal

behaviour at AAP Almere, which actually decreased at Primadomus. One type of abnormal behaviour, namely regurgitation and reingestion, actually increased at Primadomus. This is a type of abnormal behaviour that is known to be performed at moments of relative quiescence in the group. So paradoxically, the increase in that type of abnormal behaviour may have reflected a more relaxed situation at Primadomus. This idea is supported by the fact that affiliative behaviour (Figures 2 and 3) and aggressive behaviour (Figure 2) were significantly less often observed at Primadomus than at AAP. Because the chimpanzees had more space, they could avoid each other more easily and could therefore avoid negative social interactions. When the amount of aggressive interactions is reduced, there is less need to reconciliate after fights, which would explain the reduction in positive social behaviour as well.

Locomotion increased significantly at Primadomus (P=0.003), which makes perfect sense given the fact that they have a much larger enclosure to roam around in. In addition, the amount of foraging seemed to be a little less at Primadomus. This may be related to the fact that the Spanish sun made the chimpanzees rest more in the afternoon than they did in Almere, leaving less time for foraging.

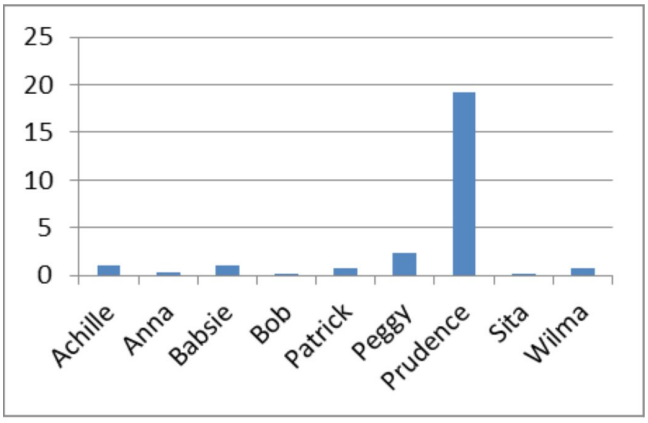



Figure 1: Mean frequency of abnormal behaviour per observation at Primadomus

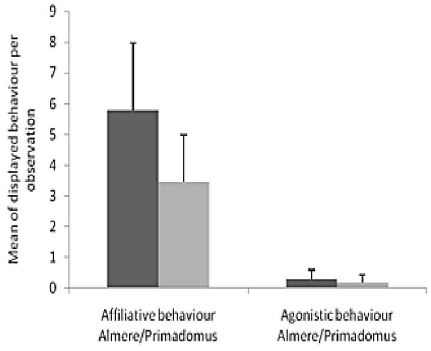



Figure 2: Differences in affiliative and agonistic behaviour (mean +- s.e.m.) between AAP Almere and AAP Primadomus.

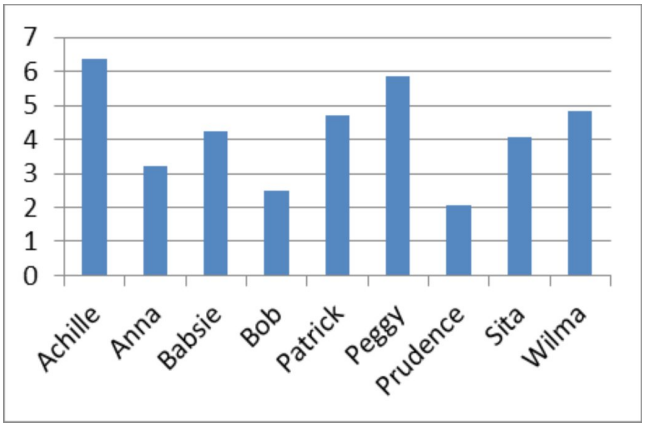



Figure 3: Mean frequency of positive social behaviour per observation at Primadomus

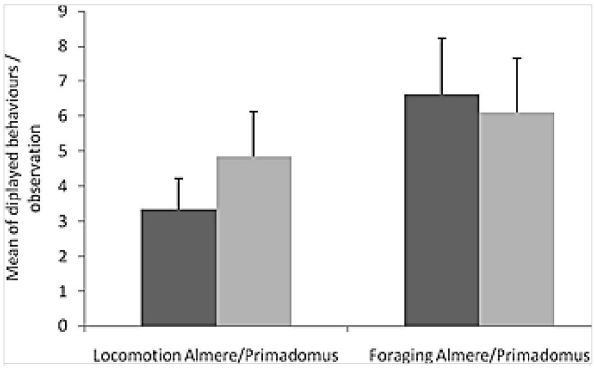
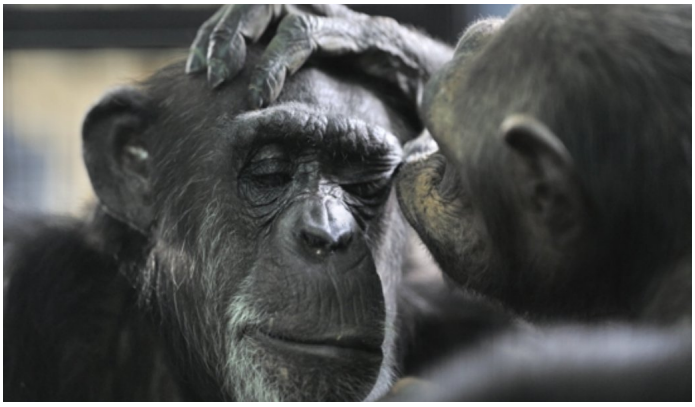



Figure 4: Differences in locomotion and foraging behaviour (mean +- s.e.m.) between AAP Almere and AAP Primadomus.



Peggy is grooming Prudence. Photo: Petra Sonius/AAP

These results indicate that although relocation to larger and more naturalistic enclosures can be beneficial for the animals, it may not necessarily reduce all types of abnormal behaviour.

The behaviour of the chimpanzees was only thoroughly studied during the first six months after relocation. It might be that initially, the animals were stressed from the transport and new environment, causing an increase in abnormal behaviour, which may have decreased later on.

In conclusion, the results of this study were surprising in the sense that we found no overall decrease in all types of abnormal behaviour and no increase in positive social behaviour. It would be interesting to collect new observational data now that the chimpanzees have been at Primadomus for a couple of years, to see whether now we actually do find a reduction in all types of abnormal behaviour. What the results do confirm, however, is that chimpanzees never fail to surprise.

Note: based on these preliminary results and the fact that one of these chimpanzees remained overweight, the chimpanzees' diet was altered to a high fibre, low calorie diet. Although data still have to confirm the subjective observations, it seems that abnormal behaviour now did decrease in all animals, and the amount of time spent on foraging increased remarkably.