

Emergence of reconciliation and other affiliative patterns in primates: a minimal model.

Puga, I. , Hildenbrandt, H., Hemelrijk, C. K.

There are all kinds of explanations for affiliative patterns observed in primates. For instance, a friendly reunion between former opponents after a fight is thought to restore the damaged relationship and to reduce anxiety, as it does in ordinary reconciliation. Besides, it is particularly directed to 'friends'. Furthermore, affiliative behaviour, such as grooming, is supposed to be reciprocated or exchanged for other services, such as support in fights and tolerance during feeding. However, to perform such actions requires keeping track of acts given and received and monitoring the value of each relationship, and this seems to ask much from the cognitive abilities of primates. Therefore, we try to find out whether such affiliative patterns may be explained in a simpler way.

We confine ourselves to the grooming patterns typically observed in egalitarian and despotic macaques. We use a model in which individuals live in a group, in a well-defined space and have a tendency to groom and fight. If they encounter another individual, they will attack it, if they think they will win, but if they expect defeat, they will groom the other. We show that, when we use such cognitively simple rules, grooming behaviour appears to be distributed in our model in a similar way as in real primates.

The resemblance of these grooming patterns to those in macaques is striking and suggests that reconciliation and other affiliative patterns may arise as a side-effect of the dominance style. This leads to new hypotheses that can be tested in primates.