Abstract

Many primate species, including humans, show extensive social behavior in many contexts. Contrary to expectations from the model *Homo oeconomicus*, it was found in the dictator game that people even voluntarily share money with unknown and unrelated persons. This type of behavior, which benefits others, was defined as prosociality by Vonk et al. (2008). With the help of provisioning games, proactive prosociality – thus, prosocial activities with a spontaneous and active behavior of the donor – was discovered in several non-human primates like tufted capuchins (*Cebus apella*) or common marmosets (*Callithrix jacchus*), whereas it was absent in our closest relatives, the chimpanzees (*Pan troglodytes*). On account of these findings it is clear that proactive prosociality has to be a convergently evolved trait. Thus, the obvious question is, which determinant(s) exist(s) for the emergence of proactive prosociality. To answer this question it is necessary to observe various primate species and to identify the strength of proactive prosociality for each species. Several factors of social behavior were already mentioned in the literature as potential determinants for the emergence of prosociality, like social tolerance, cooperative breeding or mother-infant bond. But the indications for each of these factors were blurred and inconsistent in the different studies and therefore none of these factors could be neither confirmed nor excluded as a precondition. Hence, it is necessary to test more species with a comparable method and to investigate the existing factors as well as other potential determinants like cognitive skills, different type of bonds or other important aspects and factors of group living.

The methods of the provisioning game were improved and established under the name "group service" by Judith Burkart & Carel van Schaik (2012) inasmuch as the individuals do not have to be separated anymore leading to easier arrangement of the experiment and better comparable results. Using this method, I tested four species at the zoo Basel (CH). Geoffroy's spider monkeys (*Ateles geoffroyi*) collaborated in 28.7% of the cases but the rate was decreasing from day to day and thus, the observed collaboration was no proactive prosociality. All investigated factors suggest that this was a conscious behavior. In the golden lion tamarins (*Leontopithecus rosalia*) not one single transfer occurred which probably means that this species did not understand the methods of the experiment. The cotton-top tamarins (*Saguinus oedipus*) and the coppery titi monkeys (*Callicebus cupreus*) were not motivated enough to participate in the experiment and therefore had to be excluded.

I also reanalyzed eight further species which were tested with the group service experiment by others. I found two clearly proactive prosocial behaving species: the humans and the common marmosets. It is very likely that also the white-faced sakis (*Pithecia pithecia*) were proactive prosocial and probably even the white-handed gibbons (*Hylobates lar*), but on a lower level. In all other analyzed species I found no evidence for proactive prosociality. Thus, the determinant(s) for the emergence of the proactive prosociality are still unknown, but one of the most likely determinants is the existence of cooperative breeding. Furthermore, the existence of pair-bonds is also a possible factor as well as I found evidence that indirect reciprocity could explain partly collaboration in the group service experiment in some species.