

Strategic decision-making by chimpanzees (*Pan troglodytes*), bonobos (*Pan paniscus*) and children in a Snowdrift-Game task.

A. Sánchez-Amaro¹, S. Duguid¹, J. Call^{1,2} and M. Tomasello^{1,3}.

¹ Department of Developmental and Comparative Psychology, Max Planck for Evolutionary Anthropology, Leipzig, Germany.

² School of Psychology and Neuroscience, University of St. Andrews, St. Andrews, Scotland.

³ Faculty of Psychology and Neuroscience, Duke University, Durham, USA.

alex_sanchez@eva.mpg.de

Chimpanzees must be able to coordinate with others even when conflicts of interest are present. The “Snowdrift-Game” provides a model to understand how organisms coordinate and make decisions under conflict situations. By investigating whether and how chimpanzees solve this dilemma we can gain insight into the mechanisms of cooperation. Moreover, by comparing chimpanzees with their closest relatives, bonobos and humans, we can understand the evolutionary context of decision making in this situation. We presented pairs of captive chimpanzees (N=10; M_{age}= 20.5 years) and bonobos (N=6, M_{age}=13.7 years) housed at the Leipzig Zoo in Germany as well as 20 children dyads from the same city, with an adapted version of the Snowdrift games. In our task, subjects were faced with an unequal reward distribution. In the critical condition the higher reward was acquired by letting a partner act, with the risk that if neither partner acted the rewards would be lost after a period of thirty seconds. Both chimpanzees and children were highly successful at coordinating their actions to solve the dilemma (bonobo data is currently under collection). They almost never lost the rewards because at least one partner was willing to pay the cost of getting the decreased reward, to avoid coordination failure (no reward). Both species behaved strategically as they waited longer for their partner to act when this would lead to a higher reward. However, evidence from their resource distributions, their action latencies and their communicative acts suggests that children behaved more strategic than chimpanzees. Our results demonstrate that both species can successfully coordinate their actions in conflict situations although they differ in the way they achieve coordination.