

071

TESTING FOR CUMULATIVE CULTURAL TRANSMISSION IN CHIMPANZEES AND CHILDREN

S. Marshall-Pescini^{1,3}, N. McGuigan², A. Whiten¹,

¹*Centre for Social Learning and Cognitive Evolution, and Scottish Primate Research Group, School of Psychology, University of St Andrews, St Andrews KY16 9JP, UK,* ²*Department of Psychology, Heriot Watt University, Edinburgh EH14 4AS, UK,* ³*Department of Biomedical Science and Technology, University of Milan, Milan, Italy*

Presenter's Email: sarah.marshall@unimi.it

There is increasing evidence for cultural variations in behaviour among non-human species, but human societies additionally display elaborate cumulative cultural evolution, with successive generations building on earlier achievements. Evidence for cumulative culture in non-human species remains minimal and controversial. Relevant experiments are also lacking. Here we present a first experiment designed to examine chimpanzees' capacity for cumulative social learning. Eleven young chimpanzees were presented with a foraging device which afforded both a relatively simple and a more complex tool-use technique for extracting honey. The more complex 'probing' technique incorporated the core actions of the simpler 'dipping' one and was also much more productive. In a baseline condition only two subjects discovered the dipping technique and a solitary instance of probing occurred. Demonstrations of dipping by a familiar human were followed by acquisition of this technique by the five subjects aged three years or above. By contrast, subsequent demonstrations of the probing task were not followed by acquisition of this more productive technique. Subjects stuck to their habitual dipping method despite an escalating series of demonstrations eventually exceeding 200. 3-4 year old children were tested using the same apparatus. Results indicate that as for chimpanzees the acquisition of the initial technique occurred through social learning. However, a striking difference emerged in the acquisition of the probing technique, since all children rapidly switched to this more productive behaviour. We therefore tentatively conclude that young chimpanzees exhibit a tendency to become 'stuck' on a technique they initially learn, inhibiting cumulative social learning.

Keywords: social learning, cumulative culture, chimpanzees, children