

**A COMPARISON OF COGNITIVE ABILITIES AND TEMPERAMENT OF BONOBOS AND CHIMPANZEES**

E. Herrmann<sup>1</sup>, B. Hare<sup>2</sup>, J. Call<sup>1</sup>, M.V. Hernandez-Lloreda<sup>3</sup>, M. Tomasello<sup>1</sup>

<sup>1</sup>*Max Planck Institute for Evolutionary Anthropology, D-04103 Leipzig, Germany,* <sup>2</sup>*Department of Evolutionary Anthropology and Center for Cognitive Neuroscience, Duke University, Durham N.C. 27708, U.S.A.,* <sup>3</sup>*Departamento de Metodología de las Ciencias del Comportamiento, Universidad Complutense de Madrid, Spain.*

*Presenter's Email: eherrman@eva.mpg.de*

In this study we compared the cognitive skills and a temperamental trait of human's closest living relatives, bonobos and chimpanzees. We gave 16 different physical and social cognitive tasks as well as a set of temperament tests (Herrmann, Call, Hernandez-Lloreda, Hare, & Tomasello, 2007, *Science*, 317, 1360–1366) to 106 chimpanzees (*Pan troglodytes*) and 34 bonobos (*Pan paniscus*). The tests of physical cognition consisted of problems concerning space, quantity, tools and causality, those of social cognition covered social learning, communication, and Theory of Mind tasks. In addition, the temperament tests assessed the apes' reaction (latency to approach, approach duration and a measure of proximity) to novel objects, people, and rewards - as a measure of their shyness-boldness, a key temperamental trait. Our main finding by analyzing each of the six cognitive scales is that chimpanzees were more skillful than bonobos in physical tasks in which subjects had to show an understanding of causality including the use of tools. However, bonobos were more skillful than chimpanzees in social tasks comprising Theory of Mind skills. The temperament results showed that chimpanzees were more attracted toward novelty than bonobos who were more hesitant to approach novelty. Furthermore, we discuss what role gender and age in addition to such temperamental factors might play in explaining any differences we find across both species with regard to their cognitive performances.

Keywords: cognition, temperament, chimpanzees, bonobos