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LATERALITY OF COMMUNICATIVE SIGNALING IN NONHUMAN PRIMATES: IMPLICATIONS FOR THE ORIGINS OF LANGUAGE

J. Vauclair, A. Meguerditchian

Research Center in the Psychology of Cognition, Language and Emotion, University of Provence, Aix-en-Provence, France

Presenter's Email: Jacques.Vauclair@univ-provence.fr

Behavioral asymmetries in apes and monkeys have been mostly studied by reference to manipulative actions. We propose that the investigation of handedness for gestures might be a very fruitful and more direct way for examining in particular the precursors of language lateralization. To that effect, we studied captive baboons and captive chimpanzees. We showed that Olive baboons (n=60) preferentially used their right hand for a communicative gesture (hand slapping) in order to intimidate a conspecific or a human. In addition, this laterality pattern is very stable as replication on a subsample (n =24) of the same population 4 years later led to similar biases. Manual preferences were also measured for a non communicative self-touching gesture (muzzle wiping) and for an intentional communicative gesture (food begging in presence of an experimenter). The food begging gesture led to a predominant use of the right-hand but no population-level handedness was observed for muzzle wiping. Several species specific gestures (extend arm, arm threat, hand slap) of 70 captive chimpanzees (directed either toward conspecifics or humans) were also found to be predominantly right-handed. By contrast, this bias did not appear for a non-communicative self-directed action (nose wipe). The results in baboons and chimpanzees not only revealed a left-hemispheric dominance for the various communicative gestures studied but also support the hypothesis of the emergence from the common ancestor of baboons, chimpanzees and humans of a specific communicatory cerebral circuit involved for gesturing, which may constitute an ideal precursor of the language-specific cortical network in humans.

Keywords: laterality, gestures, baboons, chimpanzees