NEUROBIOLOGY OF PRIMATES’ INTELLECTUAL EVOLUTION
Atsushi Iriki (RIKEN Brain Science Institute, Japan)

Numbers of recent reports in lower primates in the laboratories describe that they can develop highly intelligent humanistic behaviors, including action imitation and reference vocal calls, which are never seen in wild habitats. The incidences typically observed when the contexts were related to usages of various tools or instruments. Thus, tool-use seems to give rise to monkey’s latent fundamental capacities otherwise unexpressed. A discovery of tool-use dependent axogenesis between temporoparietal junction (one of the theory of mind centers in humans) and intraparietal cortex (involved in mirror neuron system) might have induced monkey’s mirror neuron system to volitional control of imitation, which have long puzzled researcher for its absense in nature. These new findings, which have long been disregarded as unnaturalistic, would now open a new horizon for behavioral-, cognitive- and social neurosciences. The tool-use seems to play a critical cognitive and neurological role in this phenomenon.

References

Brief CV
1986-1990 Research Associate, Tokyo Medical and Dental University.
1991-1997 Assistant Professor, Toho University School of Medicine.
1997-1999 Associate Professor, Toho University School of Medicine.
1999-2005 Full Professor, Tokyo Medical and Dental University.
2004-present Laboratory Head, RIKEN Brain Science Institute.
2005-present Adjunct Professor, Tokyo Medical and Dental University.
2005-present Visiting Senior Fellow, University College London.