

ATSUSHI IRIKI**RIKEN Brain Science Institute, Japan**

IRIKI, Atsushi received his Ph.D. in Neuroscience from Tokyo Medical and Dental University in 1986. He held research associate positions at the Tokyo Medical and Dental University and at The Rockefeller University, and then joined the faculty of Toho University Medical School. In 1999, he returned to Tokyo Medical and Dental University as a full professor and chairman in Cognitive Neurobiology. He is now a Senior Team Leader at RIKEN Brain Science Institute since 2004. He is a visiting professor of University College London and Keio University.

Abstract**The Brain at the Interface of Evolution and Society**

Iriki is trying to uncover evolutionary precursors of human higher cognitive functions grounded onto bodily morphologies and actions, through behavioral and neurophysiological analyses on macaque monkeys trained to use tools and other high-tech apparatus. By sharing these machineries among individuals, he extrapolates the mechanisms to constitute bases of communication, and eventually understand neural mechanism to form altruistic society to comprise humanistic civilization environment. Further, he is aiming at elucidating neurobiological mechanisms of evolutionary processes that give rise to symbolic cognitive functions subserving inference, metaphysical thoughts, etc. that characterize human intelligence.

Hominin evolution has involved a continuous process of addition of new kinds of cognitive capacity. The dramatic expansion of the brain that accompanied additions of new functional areas would have supported such continuous evolution. Extended brain functions would have driven rapid and drastic changes in the hominin ecological niche, which in turn demanded further brain resources to adapt to it. In this way, humans have constructed a novel niche in each of the ecological, cognitive and neural domains, whose interactions accelerated their evolution through a process of triadic niche construction. Human higher cognitive activity can therefore be viewed holistically as one component in a complex terrestrial ecosystem. The brain's functional characteristics seem to play a key role in this triadic interaction.