【Grant-in-Aid for Scientific Research (S)】

Integrated Disciplines (Informatics)

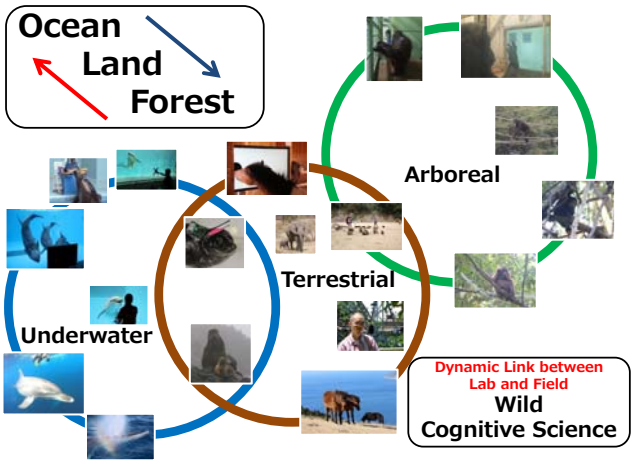
Title of Project : Wild Cognitive Science : Comparative–Cognitive Approach toward Understanding Evolution and Diversity of Mind

Masaki Tomonaga
(Kyoto University, Primate Research Institute, Associate Professor)

Research Project Number : 15H05709 Researcher Number : 70237139
Research Area : Cognitive Science
Keyword : Primates, Mammals, Evolution of Mind, Adaptation, Comparative Cognitive Science

【Purpose and Background of the Research】

Purpose of this research project is to understand "How" and "Why" our human minds have evolved. For this purpose, it is necessary to compare cognitive abilities not only between humans and evolutionarily closest species such as nonhuman great apes, but between us and various species of mammals who have adapted to completely different environments from ours, such as dolphins, seals, and horses. We focus on the aspect of "adaptation" of our minds and try to compare among minds underwater, minds on the land, and minds in the forest. Especially our approaches include dynamic interactions between cognitive experiments in the laboratory and behavioral observations in the wild. "Inspired by wild, and examine in the lab, and vice versa." Through these efforts, we try to establish a new interdisciplinary science named as "Wild Cognitive Science".



【Research Methods】

In this project, we study primates (humans, nonhuman great apes, etc.), cetaceans (dolphins, belugas, etc.), pinnipeds (seals, sea lions, etc.), and terrestrial mammals (horses, etc.). Using and expanding innovative techniques established through the comparative-cognitive studies with great apes (touchpanel, eye-tracker, etc.) in the studies with other mammals, we will try to make a breakthrough for the comparative cognitive science in nonprimate mammals. Research topics are categorized into 2 major topics, cognition of physical and social worlds. Concurrently with the laboratory study, we actively introduce innovative techniques to the field studies, such as biologging, camera-trap network, drone-based observations, etc.

【Expected Research Achievements and Scientific Significance】

Uniqueness of research project is a dynamic interaction of studies among variety of species adapted to different environments, and interaction between the laboratory and the wild. Our unique attempt, "Wild Cognitive Science" will provide new perspectives to the evolution of mind, and shed light on the importance of biodiversity which is the basis for diversity and convergence of the evolution of mind.

【Publications Relevant to the Project】

・Tomonaga et al. (2014). How dolphins see the world. Sci. Rep., 4, 3717.
・Yu & Tomonaga (2015). Interactional synchrony in chimpanzees. Sci. Rep., 5, 10218.

【Term of Project】 FY2015-2019

【Budget Allocation】 152,700 Thousand Yen

【Homepage Address and Other Contact Information】

http://www.pri.kyoto-u.ac.jp/koudou-shinkei/shikou/staff/tomonaga/indexj.html
tomonaga.masaki.4m@kyoto-u.ac.jp