【International Leading Research】

Nurturing Brain Networks for Social Networks

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Project Information	Project Number : 25K24466 Project Period (FY) : 2025-2031 Keywords : Brain, Critical Period, Early Life Stress, AI, Cognitive Robotics

Purpose and Significance of the Research

- **Building an international research network to study the "Social Brain"**
- **Background:** Social connections are essential for mental and physical health, yet how a resilient "social brain" is shaped by developmental plasticity, early-life adversity, autism risk, and culture remains poorly understood. In particular, the impact of developmental critical-period experiences and Eastern–Western cultural differences can only be clarified through international comparative research.
- **Objective:** This project links research hubs in the East (Japan, Singapore) and the West (France, Italy, USA), integrating animal neuroscience, human brain imaging (fMRI, fNIRS), AI analysis, and cognitive robotics to elucidate mechanisms of typical and atypical social brain development. The major significance and appeal of this research lie in its aim to enable culturally sensitive interventions and individualized support, while fostering the next generation of interdisciplinary researchers active on the global stage.

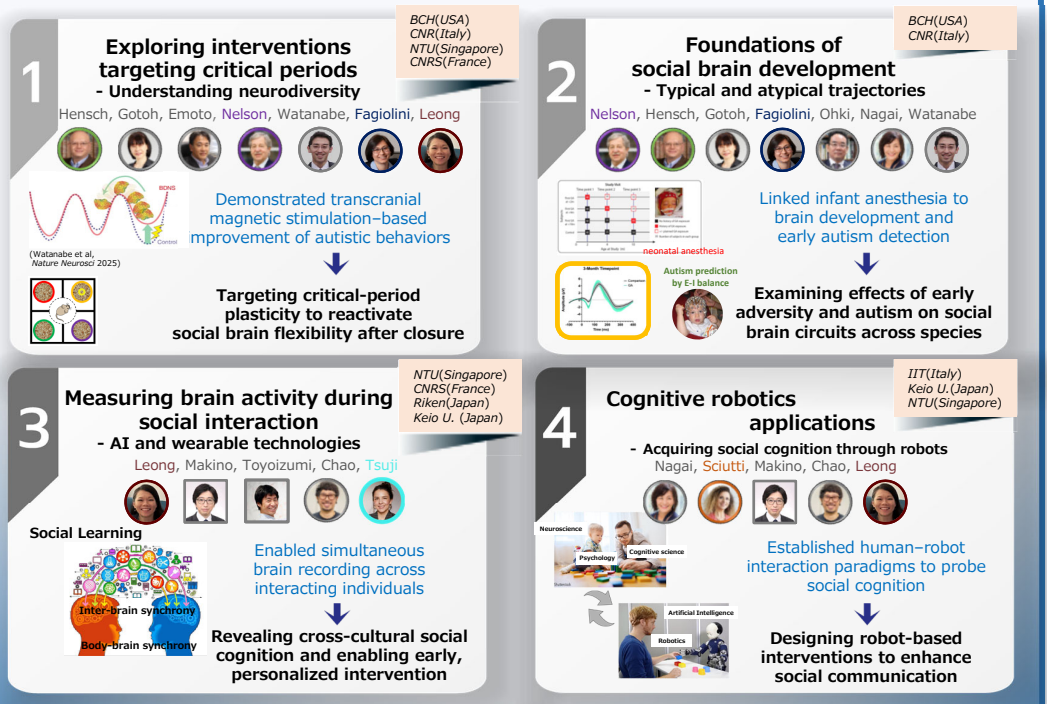

Fig. 1 Four domains to bridge animal to human studies on "Social Brains"

Organization of the Project Team

●Global leadership and complementary expertise in social brain research

This project is led by 14 internationally renowned principal investigators spanning eight domestic and international institutions.

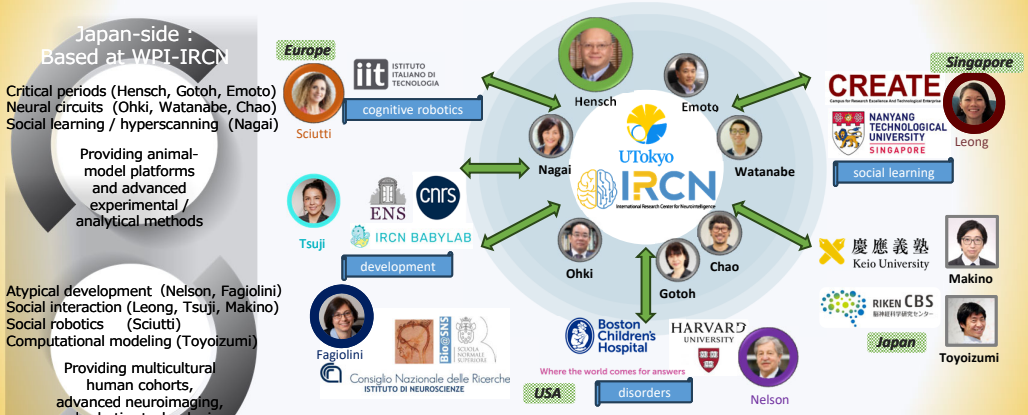

Fig.2 Global network for cross-cultural social brain research

A unique, integrated framework spanning humans, animals, and robots will be established, enabling diverse leadership and training globally active researchers.

Plan for Fostering Early-career Researchers

● Need and Approach

Despite recently declining overseas training for early-career researchers, international experience remains essential for Japan's research capacity. WPI-IRCN's global network and experienced PIs support systematic, bidirectional researcher training.

● International Symposia for Networking

A kickoff symposium in Singapore (Year 1) will introduce early-career researchers to partner labs. From Year 2, trainee-led international symposia will rotate among overseas sites to foster leadership and collaboration skills.

● Structured Research Exchanges

From Year 2, two researchers per year will join 1–2 year overseas placements, with additional short-term exchanges (3–6 mo) for 4–10 early-career researchers annually. Around 100 Japanese and similar number of international researchers will participate.

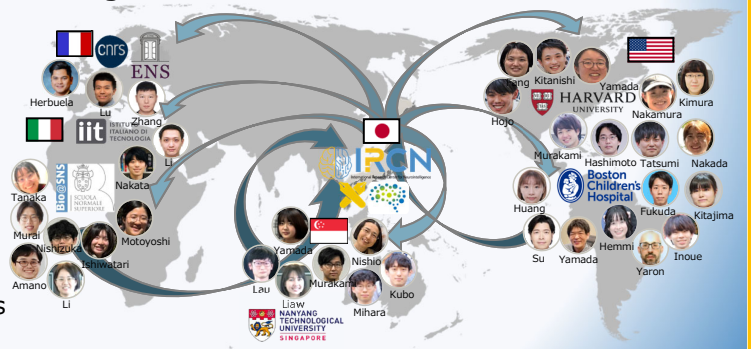

Fig. 3 Systematic international brain circulation framework

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