

Elucidation of the process by which social skills develop using noninvasive functional neuroimaging to quantitate multiple individual interactions and analyse their neural bases

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【Outline of survey】

Skills required for interacting well with other people are called “ social skills ”. Social skills are essential for leading a social life and are referred to as higher brain functions founded on linguistic or non-linguistic communication skills. The importance of social skills for dealing with rapid changes in the daily physical or social environment surrounding people, especially children, has been increasing due to the rapid development of technology, increased computerization, and demographic changes including declining birth rates, and aging of the population. These changes have been accompanied by increased reports of child rearing and education problems, which are attributed, at least in part, to the failure of some children to acquire social skills. Therefore, our aim in this study is to analyze empirically the normal process by which social skills are acquired in the formative period, and to identify pathological conditions arising in the acquisition process. We intend to combine observation and quantitation of behavior and social skills with functional neuroimaging to analyze the neural correlates of the process by which social skills, such as face-to-face communication, develop in infants, school children and adults. This research uses functional neuroimaging in combination with conventional behavioral observation techniques from developmental psychology so that social behavior in the formative period can be targeted for analysis along with the corresponding neural bases.

【Expected results】

A new dimension in multidisciplinary research encompassing not only developmental psychology, but also social psychology, systems neuroscience, mathematical statistics, and pediatrics should develop based on a new perspective that supports the suitable display of skills and individuality inherent in people. It is expected that the process by which the normal development of human social skills that determines behavior regarding relationships between oneself and others, will be elucidated at the neurological activity level, and consequently, contribute to a greater understanding of the pathogenesis of disorders of social dysfunction including autism.

【References by the principal researcher】

Sadato N, Okada T, Honda M, Matsuki KI, Yoshida M, Kashikura KI, Takei W, Sato T, Kochiyama T, Yonekura Y. Cross-modal integration and plastic changes revealed by lip movement, random-dot motion and sign languages in the hearing and deaf. 2005. Cereb Cortex in press.

【Term of project】 FY 2005 - 2009

【Budget allocation】 80,800,000 yen

【Homepage address】 <http://www.nips.ac.jp/fmritms/>