

Neural mechanisms of context-dependent altruism.

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Abstract

Human altruism has a unique feature among animals. It goes beyond genetically unrelated individuals and shows huge heterogeneity among individuals. In my previous study, I demonstrated that the gray matter volume in TPJ reflects the inter-individual variation of altruism. However, structural differences do not tell when and how altruistic acts are taken. In addition, altruistic acts are driven by various motivations, such as empathy, reciprocity and social norms. I therefore investigated neural mechanisms underlying context-dependent altruistic decision making processes. First, I have explored brain regions involved in altruistic acts independent of contexts and found that the anterior insular cortex is active when altruistic action is taken. In addition, depending on the decision contexts, other brain areas are also recruited. Connectivity analysis has revealed that the anterior insular cortex drives the context-dependent areas. These results suggest that the anterior insular cortex serves as the center of altruistic behavior by orchestrating other brain areas.

Host: Hiro. Nakahara Lab for Integrated Theoretical Neuroscience