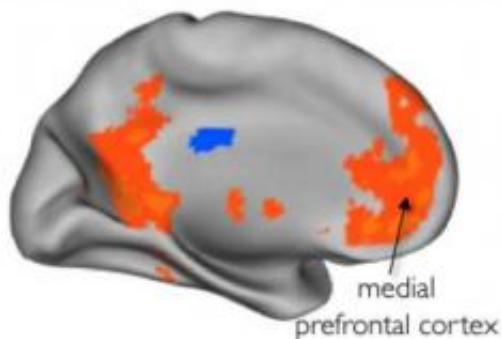


Imaging study shows brain responds more to close friends

October 12 2010



Brain regions that respond to information about friends are shown in orange and overlap a network of regions known to process personally relevant stimuli; regions that respond more to strangers are in blue. Notably, whether the person was perceived to be similar to the participant made no difference in brain response, suggesting that social alliances outweigh common interests. Credit: Courtesy, with permission: Krienen et al. *The Journal of Neuroscience* 2010.

People's brains are more responsive to friends than to strangers, even if the stranger has more in common, according to a study in the Oct. 13 issue of *The Journal of Neuroscience*. Researchers examined a brain region known to be involved in processing social information, and the results suggest that social alliances outweigh shared interests.

In a study led by graduate student Fenna Krienen and senior author Randy Buckner, PhD, of Harvard University, researchers investigated

how the medial prefrontal cortex and associated [brain regions](#) signal someone's value in a social situation. Previous work has shown that perceptions of others' beliefs guide social interactions. Krienen and her colleagues wondered whether these [brain](#) regions respond more to those we know, or to those with whom we share similar interests.

"There are psychological and evolutionary arguments for the idea that the [social factors](#) of 'similarity' and 'closeness' could get privileged treatment in the brain; for example, to identify insiders versus outsiders or kin versus non-kin," Krienen said. "However, these results suggest that social closeness is the primary factor, rather than social similarity, as previously assumed."

The researchers first imaged the [brain activity](#) of 32 participants as they judged how well lists of adjectives described their personalities. This helped to identify brain regions that respond to personally relevant information. In separate experiments, 66 different participants provided personality information about themselves and two friends - one friend whom they believed had similar preferences and one believed to be dissimilar.

The authors made up biographies of similar and dissimilar strangers for each volunteer based on their personality profiles. Then, while in a scanner, they played a game similar to the TV show "The Newlywed Game," in which participants predicted how another person would answer a question. For example, would a friend or stranger prefer an aisle or window seat on a flight?

The authors found activity in the [medial prefrontal cortex](#) increased when people answered questions about friends. Notably, whether the person had common interests made no difference in brain response.

"In all experiments, closeness but not similarity appeared to drive

responses in medial prefrontal regions and associated regions throughout the brain," Krienen said. "The results suggest social closeness is more important than shared beliefs when evaluating others."

Read Montague, PhD, of Baylor College of Medicine, an expert on decision-making and computational neuroscience, said the study's large number of participants and experimental approach makes it a solid contribution to the field. "The authors address an important component of social cognition - the relevance of people close to us," Montague said.

Provided by Society for Neuroscience

Citation: Imaging study shows brain responds more to close friends (2010, October 12) retrieved 19 July 2023 from <https://medicalxpress.com/news/2010-10-imaging-brain-friends.html>

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