

**Stony Brook University
The Graduate School**

Doctoral Defense Announcement

Abstract

Effect of Experimentally Generated Closeness on Self and Other Neural Processing: A
functional Magnetic Resonance Imaging Study

By

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Self-awareness may be a direct evolutionary precursor to higher-order cognitive functions. Previous research suggests that self-referential processing holds a unique place in our cognition and neural function. Few studies have addressed if close other-referential processing also holds a distinct position in neural functioning. Inclusion of Other in the Self Theory suggests a cognitive overlap between the self and close other. The present study explored whether similar or corresponding brain regions activate during self and close other judgments. Functional magnetic resonance imaging (fMRI) was used to examine the neural substrates of self and close other processing. Prior to the fMRI portion of the experiment, participants were paired with an unfamiliar partner for a closeness-generating activity and another unfamiliar partner for a script-reading activity. This activity enables closeness to be studied while controlling for familiarity. After completing these activities, participants underwent fMRI while making judgments about faces and trait adjectives under four conditions (self-relevant, close other-relevant, familiar other-relevant and non familiar other-relevant). Brain activation was compared during each of these conditions. Results suggest that similar regions of the medial prefrontal cortex are activated when making self-relevant judgments as well as close other relevant judgments. This experiment is the first to examine neural correlates of close other using experimentally generated closeness to control for familiarity.

Date: July 26th, 2007

Time: 12pm

Place: Psychology A256

Program: Social/Health Psychology

Dissertation Advisor: Arthur Aron, Ph.D.