

Reflective and reflexive processes in social cognitive neuroscience

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In this talk I will review the neurocognitive bases for distinguishing between two types of social cognitive processes. The “C-system” is responsible for reflective processes that are symbolic, slow, and effortful. Activity in the C-system typically feels like self-generated thought and is linguistic. The C-system consists of several neural regions including lateral prefrontal cortex, lateral parietal cortex, medial prefrontal cortex, medial parietal cortex, rostral anterior cingulate, and the medial temporal lobes. Alternatively, the “X-system” is responsible for reflexive and intuitive processes that are non-symbolic, fast, and effortless. Activity in the X-system, typically feels like reality being directly experienced and is more often perceptual or affective (and sometimes nonconscious). The X-system consists of several neural regions including ventromedial prefrontal cortex, amygdala, basal ganglia, dorsal anterior cingulate, and lateral temporal cortex.

After describing the general framework of the X- and C-systems, I will focus on the special case of when C-system activity disrupts X-system activity in the absence of any intentional attempt to regulate the X-system. Specifically, I will present a number of studies that indicate that symbolic processing of affect activates right ventrolateral prefrontal cortex in the C-system which in turn appears to disrupt activity in a number of X-system limbic regions that support non-symbolic processing of affect.