

[J Neurosci.](#) 2006 Feb 15;26(7):2072-9.

Brain systems mediating cognitive interference by emotional distraction.

[Dolcos F, McCarthy G.](#)

Source

Brain Imaging and Analysis Center, Duke University, Durham, North Carolina 27710, USA.

Erratum in

- [J Neurosci.](#) 2006 Mar 8;26(10):2839.

Abstract

Flexible behavior depends on our ability to cope with distracting stimuli that can interfere with the attainment of goals. Emotional distracters can be particularly disruptive to goal-oriented behavior, but the neural systems through which these detrimental effects are mediated are not known. We used event-related functional magnetic resonance imaging to investigate the effect of emotional and nonemotional distracters on a delayed-response working memory (WM) task. As expected, this task evoked robust activity during the delay period in typical WM regions (dorsolateral prefrontal cortex and lateral parietal cortex). Presentation of emotional distracters during the delay interval evoked strong activity in typical emotional processing regions (amygdala and ventrolateral prefrontal cortex) while simultaneously evoking relative deactivation of the WM regions and impairing WM performance. These results provide the first direct evidence that the detrimental effect of emotional distracters on ongoing cognitive processes entails the interaction between a dorsal neural system associated with "cold" executive processing and a ventral system associated with "hot" emotional processing.

PMID:

16481440

[PubMed - indexed for MEDLINE] [Free full text](#)