

## Role of Temporo-parietal Junction in Emotional Processing

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One of the hallmarks of human cognitive function is the ability to orient attention in a goal directed fashion regardless of external distracters. This ability is thought to involve a dorsal frontal-parietal network that is engaged during a range of cognitive processes, including sustained attention and the maintenance and manipulation of information in working memory (WM). However, there are times when it is critical for humans to rapidly disengage internally focused attention to attend to potentially relevant environmental stimuli, including those that might be task-irrelevant but emotionally salient or survival relevant. Prior research has provided evidence for a system involved in detecting signals in the environment that can override the maintenance of internal representations and redirect attention when necessary. A functional area at or near the temporo-parietal junction (TPJ) has been implicated as a key component of this competing system, and as a candidate ‘circuit breaker’ of sustained, goal-directed attentional processes. Prior research on TPJ has shown its involvement in orienting attention to unattended, but task relevant information. However, it is not yet clear whether TPJ may also play a role in helping reorient attention to emotionally salient, but task irrelevant information. We propose to use state of the art functional neuroimaging techniques to determine whether the TPJ also plays a critical role as a ‘circuit breaker’ of goal-directed processing when task-irrelevant, but emotionally salient stimuli are presented. This would suggest that the role of TPJ in integrating attentional and cognitive processes might extend to emotional processing as well. The results of these studies will shed light on the mechanisms that govern the interaction between goal-focused processes and allocation of attention to emotionally salient events in the environment.