

The Dissociable Impact of Auditory vs. Visual Emotional Cues on Visual Processing

Background: Emotional information has privileged access to processing resources, which can cause it to have a distracting or facilitating effect on task performance for reasons that are poorly understood. The sensory modality through which it is presented may be one determining factor. Some findings suggest that auditory stimuli facilitate visual task performance while visual stimuli interfere with it, but there are conflicting findings.

Hypothesis: We hypothesize that emotional content of a different sensory modality from the task improves task-related performance via a general alerting and arousing effect for all stimuli, while emotional content of the same modality disrupts performance when task-relevant neutral stimuli compete with emotional stimuli for processing resources.

Methods: Participants will attempt to identify the location of a Gabor patch (a sinusoidal grating of horizontal lines), either on the left or right side of the computer screen, while a negative or neutral image or sound is presented. Their reaction times will be compared across conditions.

Expected Results: We expect that emotional content presented through the auditory modality will result in faster responses on the visual perception task, compared to neutral content. Conversely, compared to neutral stimuli, emotional content presented visually will lead to slower responses.

Discussion: This research will lead to a better understanding of how the manner in which emotional information is presented can determine its effect on task performance. This is a key step in determining how emotional content perceived through multiple modalities interacts to affect a person's perceptual abilities in complex emotional situations.