

## Irrelevant Angry Faces, Compared to Happy Faces, Facilitate the Response Inhibition

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**Abstract :** It is unclear whether arousal or valence modulates the response inhibition process. It has been suggested that irrelevant positive emotional information (e.g., happy faces) and negative emotional information (e.g., angry faces) interact with attention differently. In the present study, we used arousal-matched irrelevant happy and angry faces. These faces were used as stop-signals in the stop-signal paradigm. There were two kinds of trials: go-trials and stop-trials. Participants were required to discriminate between the letter X or O by pressing the corresponding keys on go-trials. However, a stop signal was occasionally presented on stop trials, where participants were required to withhold their motor response. A significant main effect of emotion on response inhibition was observed. It indicated that the valence of a stop signal modulates inhibitory control. We found that stop-signal reaction time was faster in response to irrelevant angry faces than happy faces, indicating that irrelevant angry faces facilitate the response inhibition process compared to happy faces. These results shed light on the interaction of emotion with cognitive control functions.

**Keywords :** attention, emotion, response inhibition, inhibitory control

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