

Differences in the Emotional Conflict Processing between High and Low Mindfulness Adolescents: An ERP Study



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Background

- Mindfulness can be defined as a state of being attentive to and aware of what is happening in the present, in an intentional, non-judgmental way.
- While considerable evidence supporting the positive influence of mindfulness on adolescents' mental health and emotions, little is known regarding the underlying neural processes.

Methods

- Participant: Nineteen low mindfulness adolescents and sixteen high mindfulness adolescents (aged from 10 to 14 years old).
- Face Stroop task. We employed a 2 (group: HMSs vs. LMSs)*2 (congruency: congruent vs. incongruent) two-factor mixed design.

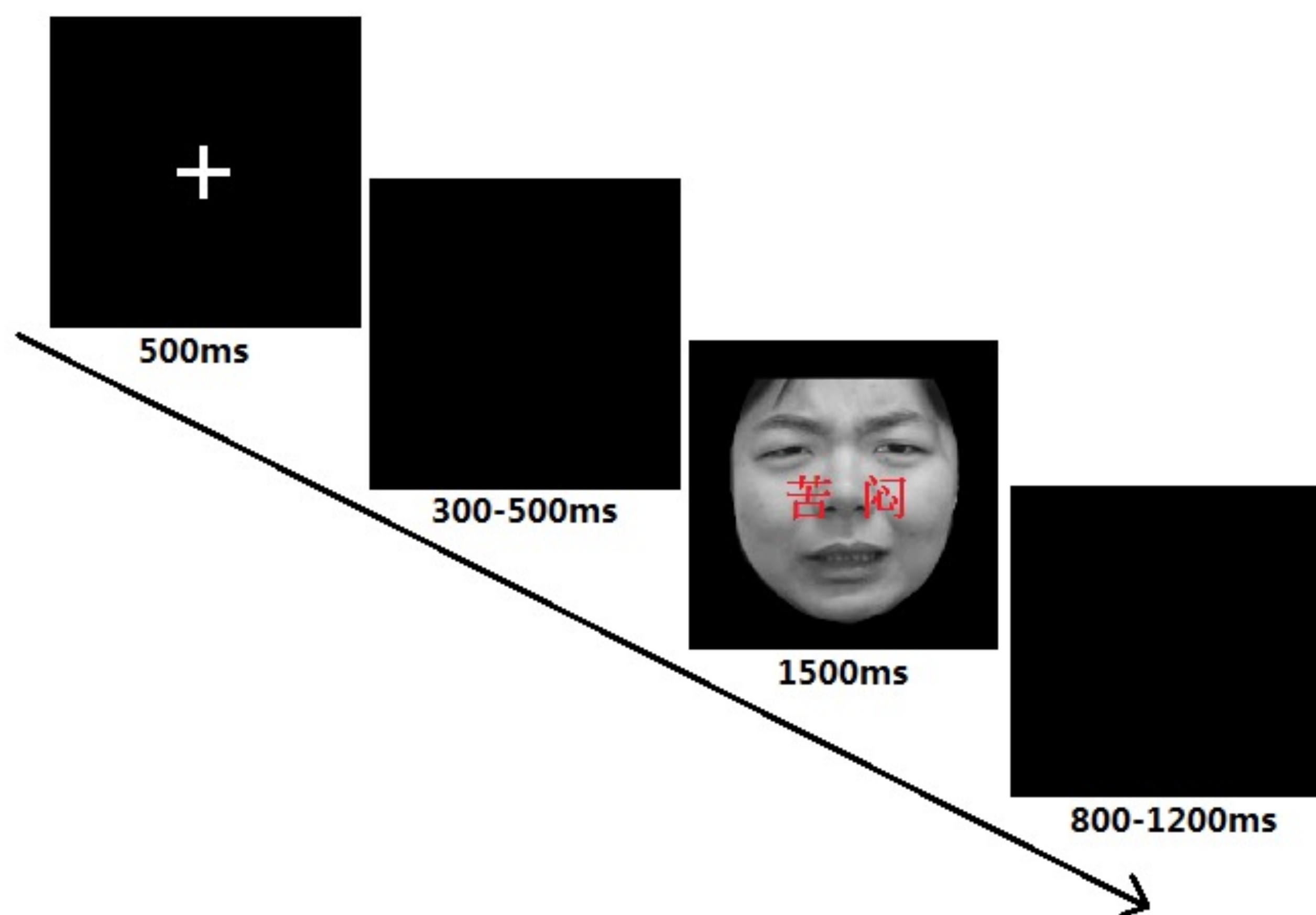


Figure 1. Face Stroop task

Results & Discussion

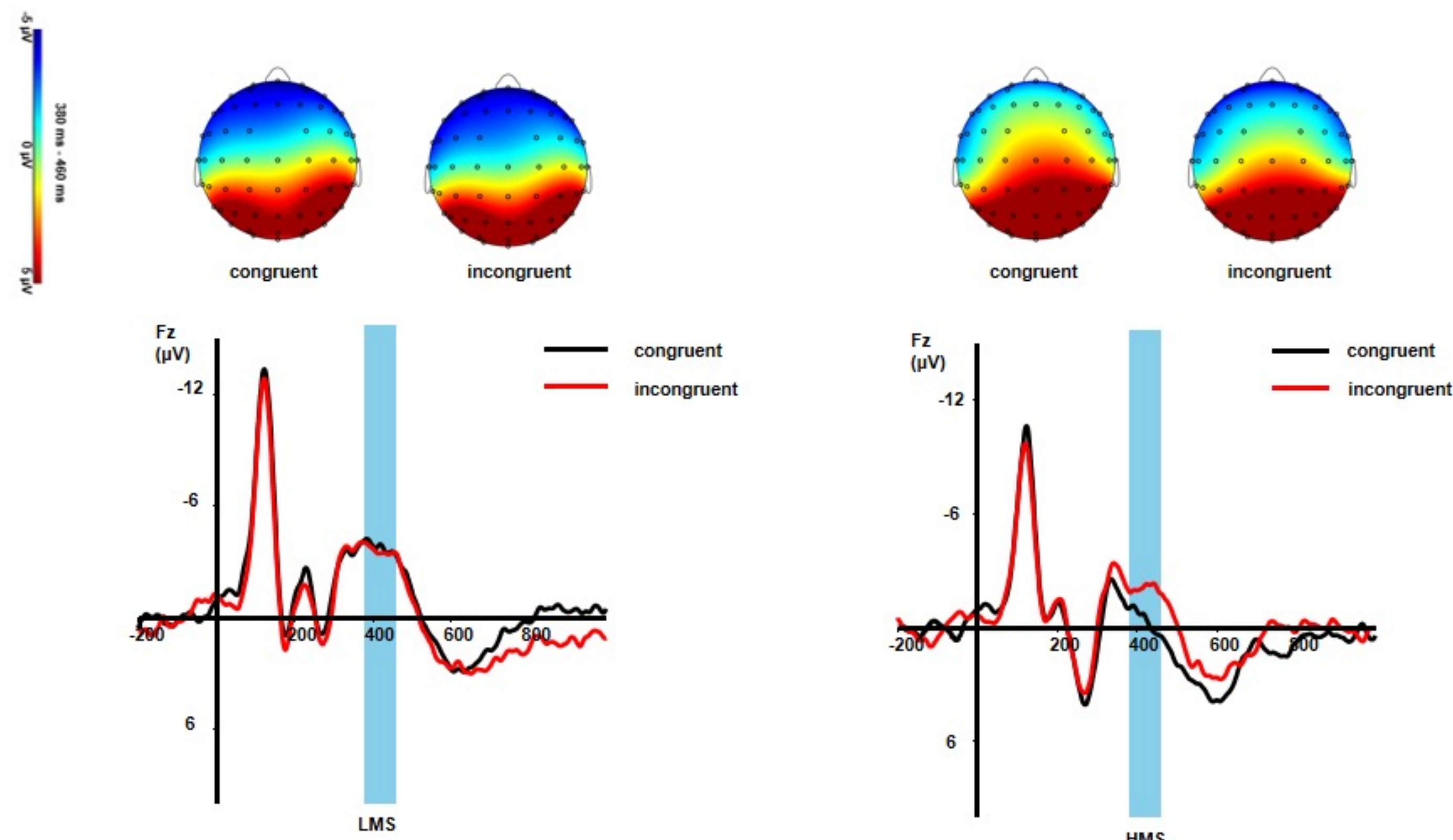


Figure 2. The Grand-averaged N450 Waveforms and topographic maps of scalp voltage in Mean Activity to Different Conditions between LMS and HMS.

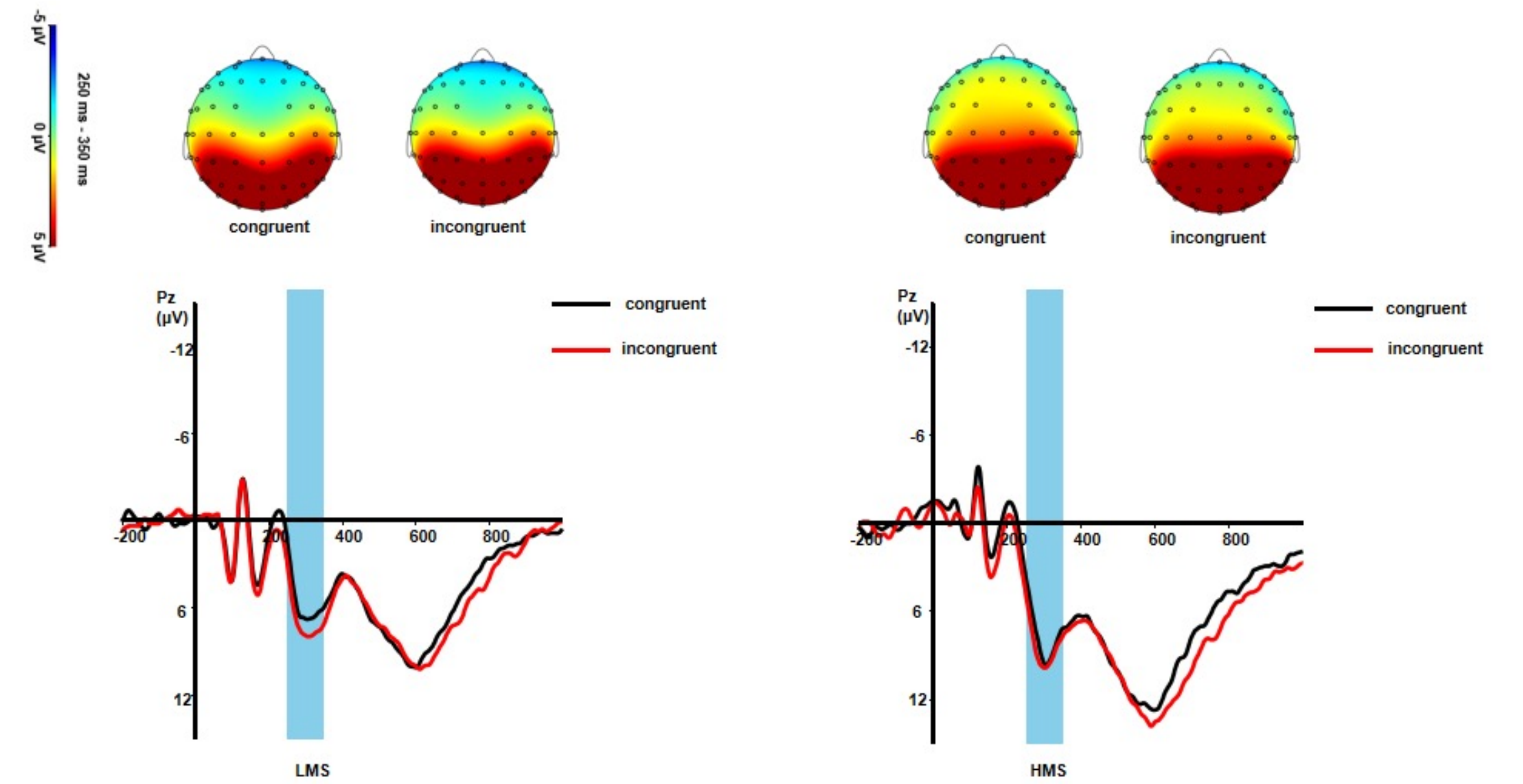


Figure 3. The Grand-averaged P3 Waveforms and topographic maps of scalp voltage in Mean Activity to Different Conditions between LMS and HMS.

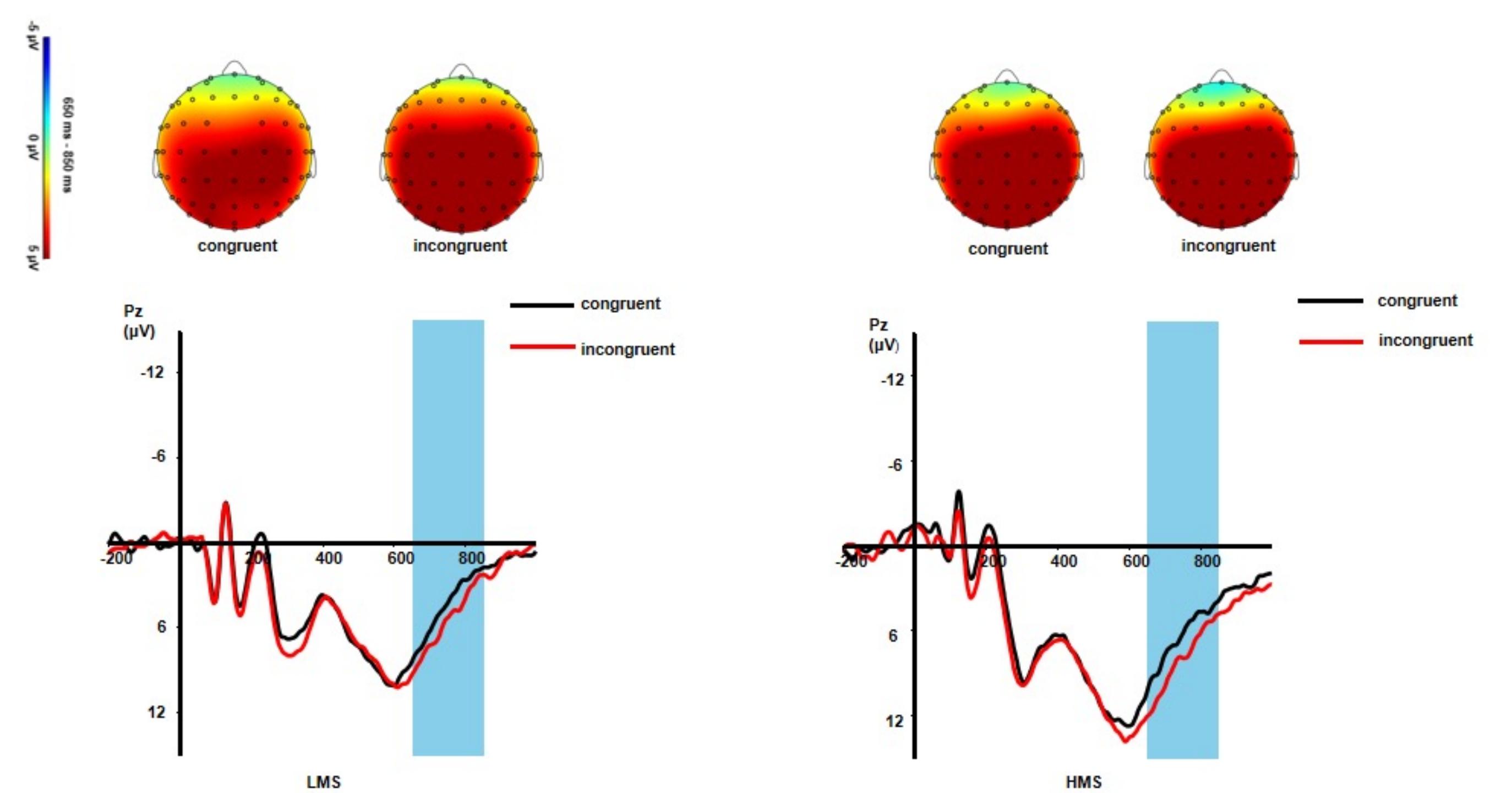


Figure 4. The Grand-averaged SP Waveforms and topographic maps of scalp voltage in Mean Activity to Different Conditions between LMS and HMS.

- Results revealed that for N450, the interaction of Congruency and Group was significant. The incongruent trials evoked a larger N450 than the congruent trials in the HMSs, while there were no significant differences between the two types of condition in the LMSs (Figure 2).
- There were significant main effects of Congruency for the P3 and SP (slow potential). The incongruent trials evoked a larger P3 (Figure 3) and SP (Figure 4) than the congruent trials.

Discussion

- These results suggest that mindfulness might affect adolescents' ability of inhibit control during emotional conflict tasks.
- The findings also provided electrophysiological evidence that the differences in the emotional conflict process between high- and low-mindfulness adolescents could be a possible explanation for the differences in their emotional health and capacities of emotion regulation.