Research Report

ERP correlates of the development of orthographical and phonological processing during Chinese sentence reading

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Article history:

far–near

因 *because of* 阴 *negative*

诚 *honest* 城 *city*

成 *success*

Hanja *Hangul*

服 *clothes* 报 *newspaper*

Table 1 – Design and sample stimuli

过新年，孩子们都穿上漂亮的衣报 (衣服).
节假日，人们喜欢到郊外观赏自然风井(风景).
刮大风时，我出门都要穿挡风的风衣.

2. Results

2.1. Behavioral data

2.2. ERP data

2.2.1. P200

Table 2 – Mean of RTs (in milliseconds) and error percentages for the adult and child readers

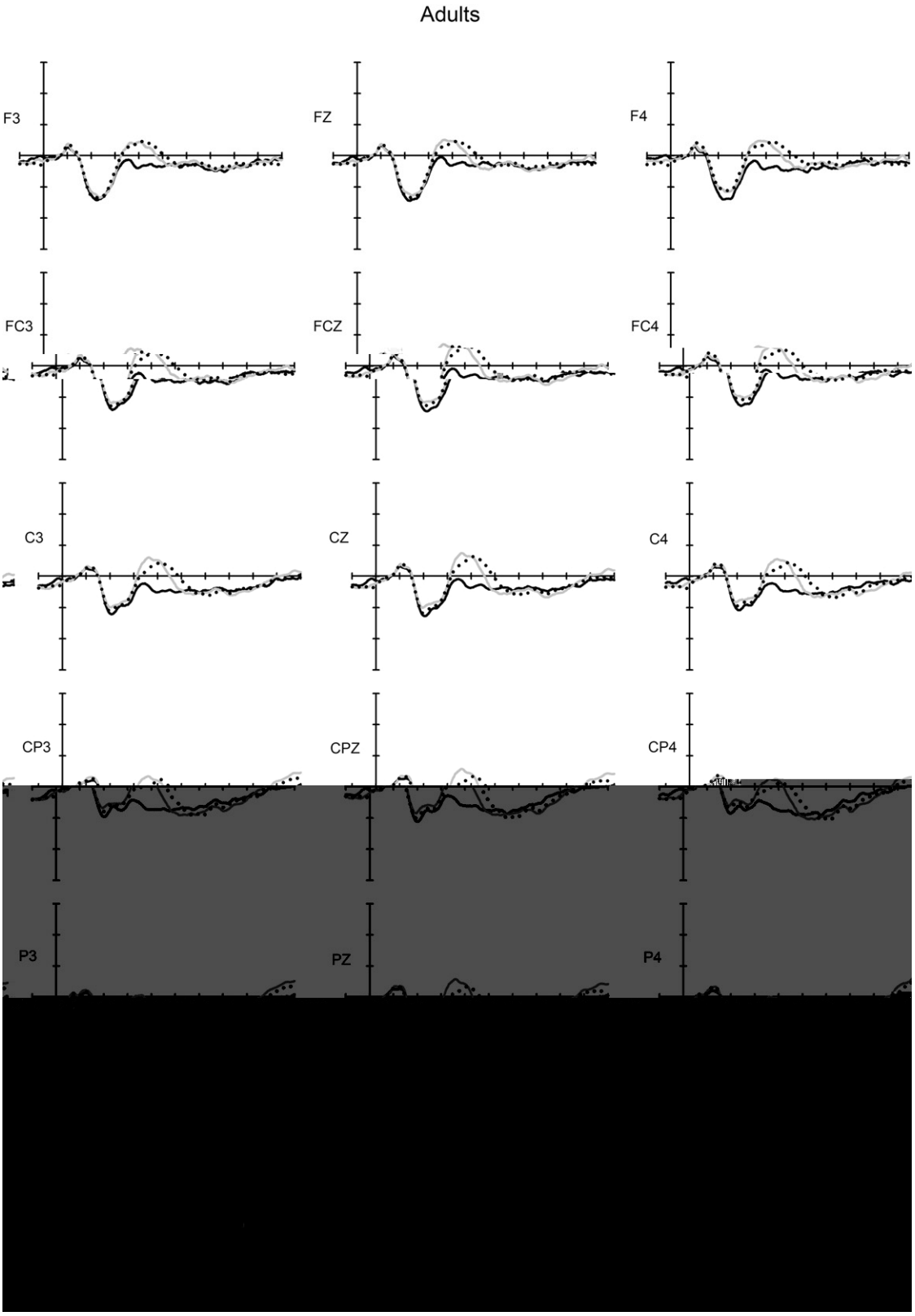

Fig. 1 – Grand average ERPs for the adult participants at 15 typical electrodes. The solid line was for the baseline condition, the dotted line for the orthographic condition, and the gray line for the homophonic condition.

F p<

μ

F p<

μ

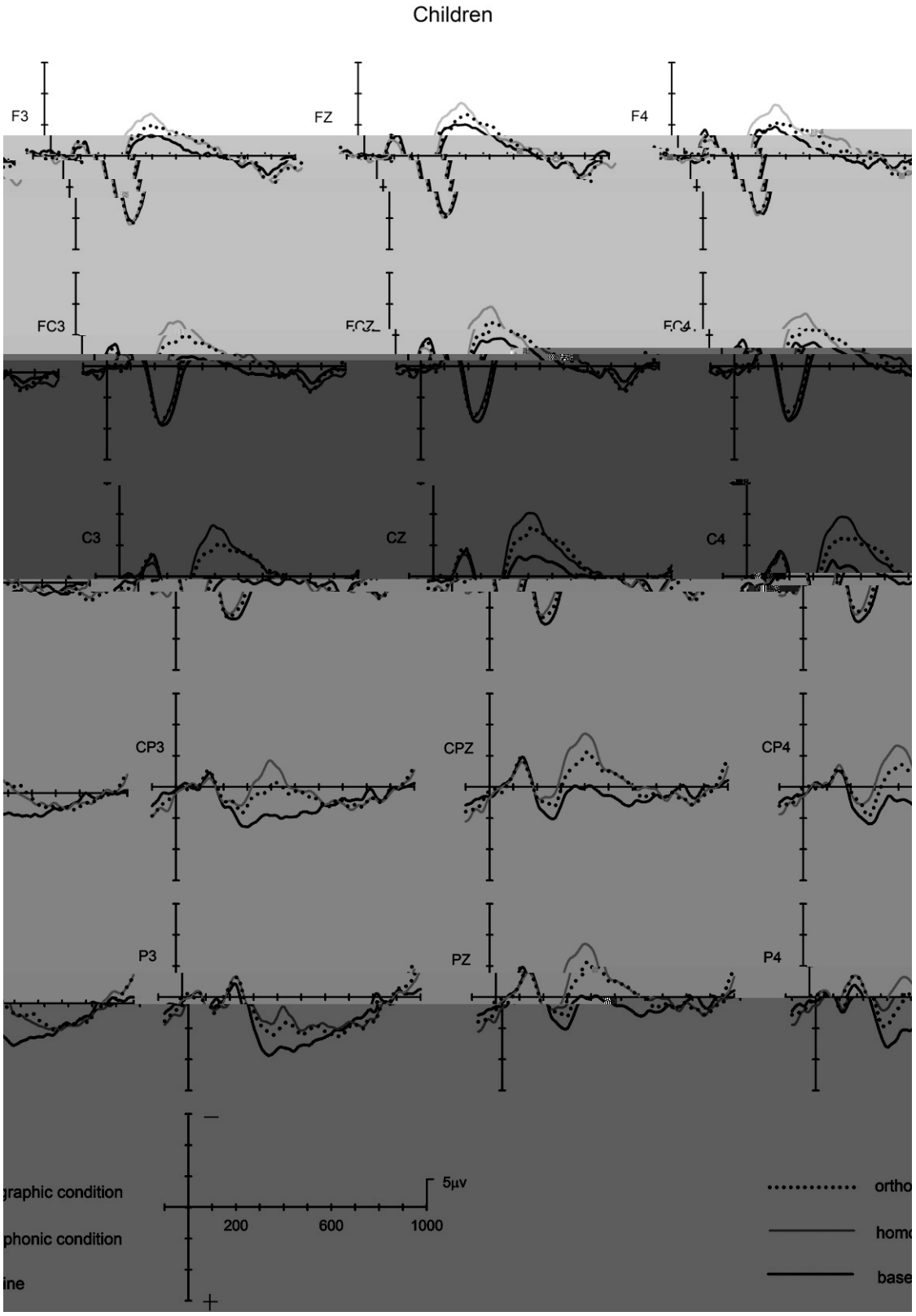

Fig. 2 – Grand average ERPs for the child participants at 15 typical electrodes. The solid line was for the baseline condition, the dotted line for the orthographic condition, and the gray line for the homophonic condition.

F p< p<

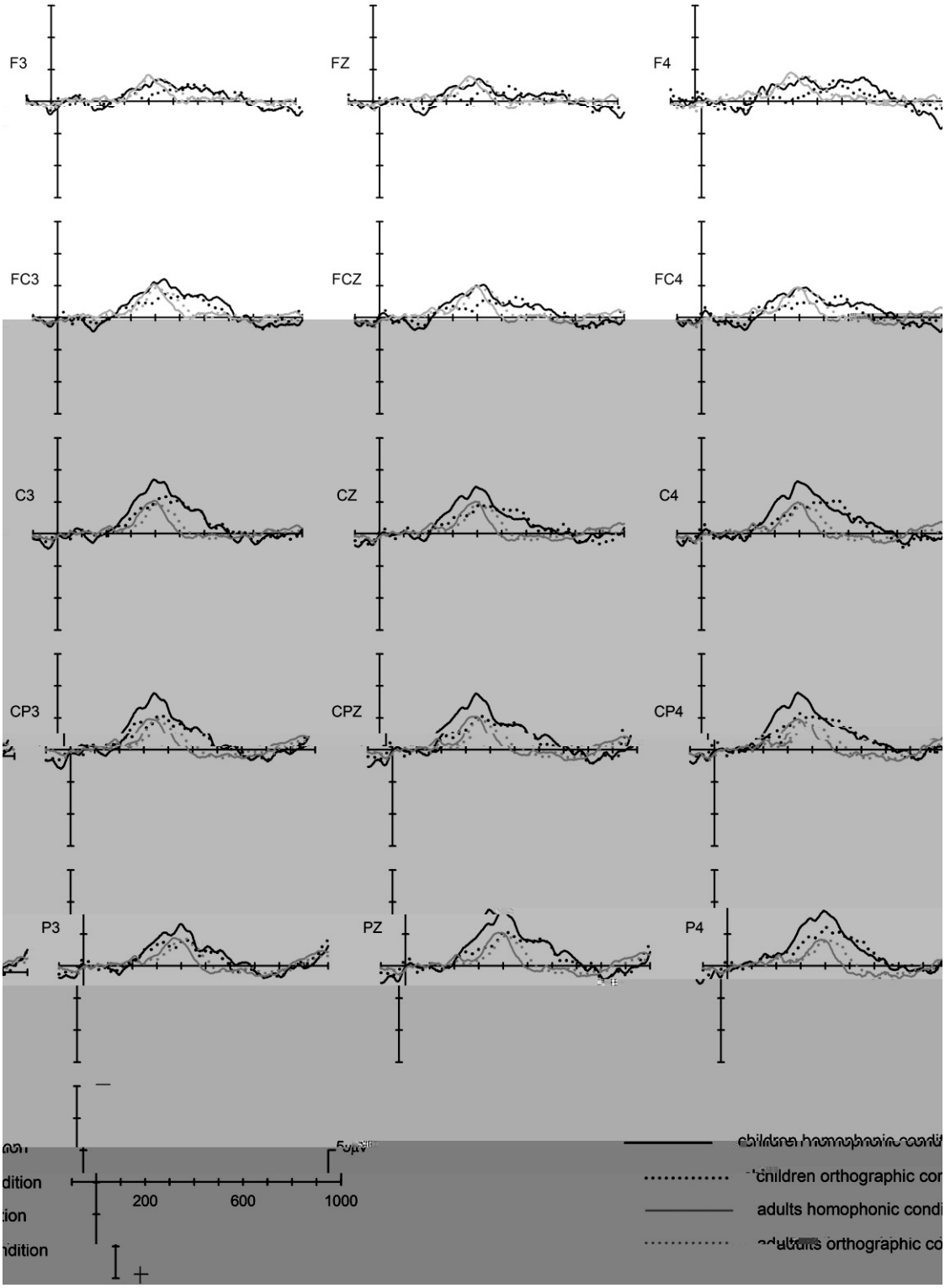

Fig. 3 – Difference waveforms contrasting the homophonic and the baseline conditions and contrasting the orthographic and the baseline conditions for the adult and the child participants.

2.2.2. N400

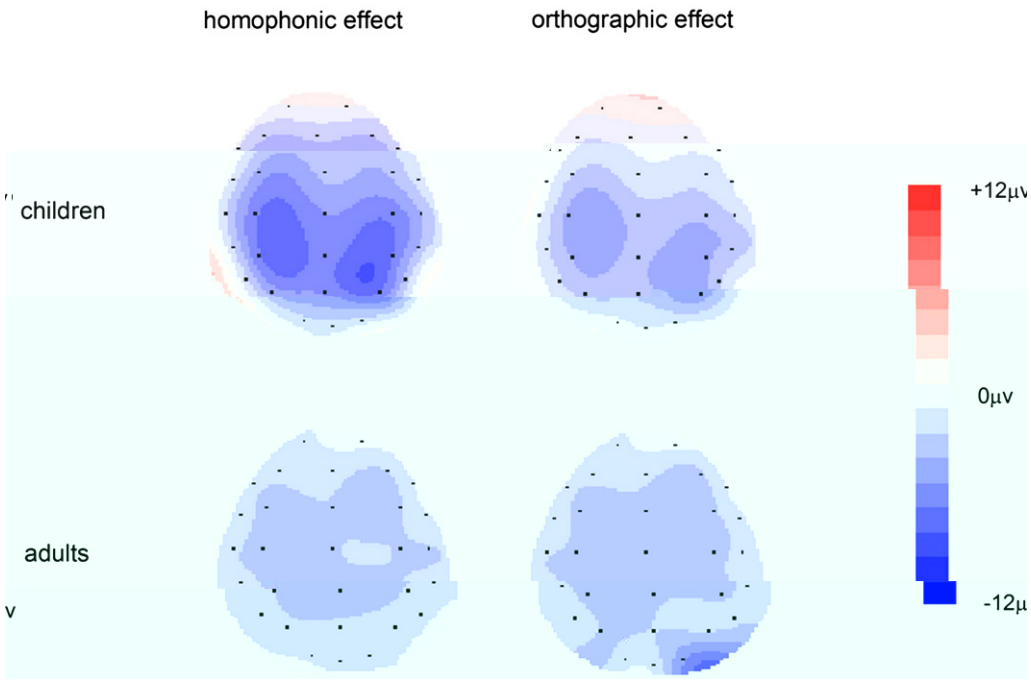

Fig. 4 – Topographic maps for the averaged N400 effects in the 300–500 ms time window for the child and adult participants, contrasting the homophonic or the orthographic condition with the baseline.

Table 3 – The mean frequencies (per million) and the numbers of strokes for the critical characters and the characters in the original base words

尘 *dust* 晨 *morning*

4. Experimental procedures

4.1. *Participants*

4.2. Stimuli

4.2.1. *Stimuli and design*

服 *clothes* 报 *newspaper*

龟 *tortoise* 电 *power*

4.2.2. *Pretests of stimuli*

4.3. *Procedure*