PARALLEL PHONOLOGICAL PROCESSING OF CHINESE CHARACTERS REVEALED BY FLANKERS TASKS

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An important and extensively researched question in the field of reading is whether readers can process multiple words in parallel. An unresolved issue regarding this question is whether the phonological information from foveal and parafoveal words can be processed in parallel, i.e., parallel phonological processing. The present study aims to investigate whether there is parallel phonological processing of Chinese characters. The original and the revised flankers tasks were applied. In both tasks, a foveal target character was presented in isolation in the no-flanker condition, flanked on both sides by a parafoveal homophone in the homophone-flanker condition, and by a non-homophonic character in the unrelated-flanker condition. Participants were instructed to fixate on the target characters and press two keys to indicate whether they knew the target characters (lexical vs. non-lexical). In the original flankers task, the stimuli were presented for 150 ms without a post-mask. In the revised flankers task, we set the stimulus exposure time (duration of the stimuli plus the blank interval between the stimuli and the post-mask) to each participant's lexical decision threshold to prevent participants from processing the target and flanker characters serially. In both tasks, reaction times to the lexical targets were significantly shorter in the homophone-flanker condition than in the unrelated-flanker condition, suggesting parallel phonological processing of Chinese characters. In the revised flankers task, accuracy rates to the lexical targets were significantly lower in the unrelated-flanker condition compared to the homophone-flanker condition, further supporting parallel phonological processing of Chinese characters. Moreover, reaction times to the lexical targets were the shortest in the no-flanker condition in both tasks, reflecting the attention distribution over both the target and flanker characters. The findings of this study provide valuable insights into the parallel processing mechanisms involved in reading.