Chinese character recognition: phonological or semantic bias

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The majority of Chinese characters are composed of a semantic and a phonetic radical. Although pre-lexical involvement of the phonetic radical in Chinese character recognition has been established, there is little agreement on the contribution of the semantic radical. We used magnetoencephalography (MEG) to investigate the temporal dynamics of the priming effect elicited by repetition of phonetic and semantic radicals in the tasks of homophone and synonym judgment, respectively. The behavioral results revealed robust priming induced by both kinds of radicals. As for the MEG results, the repetition effect of phonetic radicals was obtained in the M170, M250 and M350 components. In contrast, the repetition effect of semantic radicals was not obtained in any of the M170, M250 and M350 components, and only the synonymic priming was observed in M350. The present findings suggest that phonetic radicals play a predominant role in early lexical access and phonological computation of Chinese character recognition, while semantic radicals have relatively weak effect on lexical access and semantic retrieval.