

The orthography-to-phonology consistency and homophone density effects in writing Chinese characters

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Most of Chinese characters are phonograms that consist of a semantic radical and a phonetic radical. The reliability of a phonetic radical in providing the whole character's phonological clue can be defined by O-to-P consistency. Many studies have demonstrated the O-to-P consistency effect in reading, yet it is unclear such an effect could be found in auditory modality. This study aims to examine the O-to-P consistency effect in auditory word recognition and how the O-to-P consistency effect shapes the orthographic consistency effect in the Chinese writing to dictation task. We first invited colleague students to perform a Chinese writing to dictation task to ensure the characters that are very likely to be written down for 230 monosyllabic Chinese spoken words, in order to confirm their OP consistency. The behavioral data showed the reaction time for O-to-P inconsistent characters were longer than those for O-to-P consistent characters and suggested that the O-to-P consistency does play a role during spoken word processing. A subset of these orthographic outputs were selected and subdivided into four conditions based on their O-to-P consistency (high/low) and homophone density (high/low) for the event-related potentials (ERPs) study, in order to examine whether there would be an interaction between O-to-P consistency and homophone density on N400. The ERP data showed the homophone density effect in writing low O-to-P consistency characters, but not for high O-to-P consistency characters. These findings support the reverberation of the O-to-P consistency effect in Chinese writing to dictation.

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