

Effects of Semantic Radical and Semantic Association on Semantic Processing of Chinese Characters for Adults and Fifth Graders

Kuo-Chung Hung,^{1,*} Shu-Hui Lee,^{1,*} Shiou-Yuan Chen,² and Tai-Li Chou¹

¹Department of Psychology, National Taiwan University

²Department of Early Childhood Education, Taipei Municipal University of Education

While past research has investigated the effects of semantic radical or semantic association on comprehension of meaning for children, little is known about the impact of semantic radical integrated with semantic association. This study addressed this issue using a semantic relatedness judgment task with semantic association strength (strong, weak) and semantic radical (with, without) varied between character pairs. Participants were asked to decide if two Chinese characters were semantically related, when the first character was visually presented and the second character was auditorily presented. Experiment 1 recruited two groups of participants (adults and fifth graders) that differed in ages and word recognition abilities for the semantic judgment task. Our results showed a reduced difference between adults and fifth graders in reaction time on semantic judgment of strongly related radical-shared pairs as compared with that for without-radical pairs. Experiment 2 recruited two groups of fifth graders with various word recognition abilities to perform the semantic judgment task. Our results demonstrated better discrimination sensitivity on judging strongly related radical-shared pairs as compared with that for pairs without shared radicals. The semantic radical was found to affect meaning judgments for fifth graders. There are two implications in this study. First, compared with adults, fifth graders may not have elaborate semantic representations available and thus may not use the whole character to get the correct answer among homophones. They may need the aids of orthographic similarity from the shared radical between characters on meaning judgments of strongly related pairs. Second, when fifth graders process strongly related pairs that have greater overlapping features between characters, orthographic similarity aids in the detection and integration of these features.

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*Equal contributions as the first authors