Phonological similarity effects on lexical decision for aurally-presented Japanese-Chinese cognates by native Chinese speakers learning Japanese

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Previous studies (e.g., Hayakawa, et al., 2012; Yamato, et al., 2009; Zhang, 2017) reported that native Chinese speakers can process L2 Japanese two-kanji compound orthographic/semantic cognates faster than non-cognates. Yet, due to the great resemblance of kanji, native Chinese speakers heavily rely on orthography to process L2 two-kanji compounds. They are, in turn, likely to pay little attention to the phonological aspect of kanji compounds, resulting in misunderstanding or poor listening comprehension (e.g., Hong 2004; Ishida 1986; Song, 2002). This study examined to what extent phonological similarity can assist lexical decisions for aurally-presented L2 Japanese two-kanji compounds by L1 Chinese speakers.

Using a L2 Japanese lexical knowledge test, 60 native Chinese speakers were divided into high and low Japanese lexical knowledge groups. 250 two-kanji compound Japanese-Chinese orthographic/semantic cognates and the same number of non-words were aurally-presented for a L2 Japanese lexical decision task. A regression tree analysis (see Figure 1.) conducted on accuracies revealed five predictor variables: (1) high/low Japanese lexical knowledge groups, (2) high/low phonological similarity, (3) long/short phonological length, (4) high/low Japanese word frequencies, and (5) high/low Chinese word frequencies.

The results indicated that the strongest predictor for accuracies was Japanese word frequency: The high word frequency stimuli were significantly more accurate than the low frequency stimuli. Phonological length was the second strongest predictor: Long phonological length was more accurate than shorter phonological length. Lexical knowledge and phonological similarity were the third predictors both following phonological length. Since native Chinese speakers rely on the L2 Japanese kanji orthography, Chinese word frequency did not affect accuracies of aurally-presented compounds. Overall, Japanese word frequency was the most crucial factor while phonological similarity appeared as a weak effect. In conclusion, due to the strong ties between orthography and concepts in kanji, native Chinese speakers establish weak connections between orthography and phonology.
Figure 1. Regression tree analysis predicting accuracies of L2 Japanese lexical decision.