Towards a Model of Second Language Word Production and Recognition in Mandarin

Patrick Chun Kau CHU
University of New South Wales, Sydney, Australia

There are pronunciation correspondences between Cantonese and Mandarin at all sublexical levels (i.e., onset, rime and tone). Table 1 shows the major correspondences between Cantonese and Mandarin words for tones. Our studies have shown that the production and recognition of Mandarin words by Cantonese speakers are influenced by these pronunciation correspondences. For example, a Cantonese tone 2 word typically corresponds to tone 3 in Mandarin and therefore, when it does not (e.g., 帽 'hat', pronounced *mou2* in Cantonese *mao4* in Mandarin and hence "irregular"), a Cantonese speaker might mistakenly pronounce it with tone 3 when speaking Mandarin (i.e., *mao3*). Moreover, it is easier for a Cantonese/Mandarin bilingual to recognize the irregular-tone word 魔 'devil' when it is mispronounced as *mo1* than when it is correctly pronounced as *mo2* in Mandarin. A three-route second language Mandarin word production and recognition model has been proposed using these pronunciation correspondences based on a series of experiments testing Mandarin word production (Chu & Taft, 2010), disyllabic word transcription (Chu & Taft, 2010, 2011a), *pinyin* transcription (Chu & Taft, 2011b), and character-sound matching (Chu & Taft, 2011c).

Table 1. Major tone correspondences between Cantonese and Mandarin words (Tsang-Cheung, 1988)

Cantonese tone	Mandarin tone	Correspondence percentage	Example	Cantonese pronunciation	Mandarin pronunciation
1 (high level)	1 (level)	93%	郊 'suburb'	*gaau1*	*jiao1*
2 (high rising)	3 (dipping)	89%	找 'find'	*zaau2*	*zhao3*
3 (mid level)	4 (falling)	92%	怪 'strange'	*gwai3*	*gwai4*
4 (low falling)	2 (rising)	93%	牛 'cow'	*ngau4*	*niu2*
5 (low rising)	3 (dipping)	75%	偉 'great'	*wai5*	*wei3*
6 (mid-low level)	4 (falling)	94%	又 'again'	*jau6*	*you4*

In the model, a concept route links the concept and the L2 Mandarin phonological representation directly, while a lexical route links the concept and the L2 Mandarin phonological representation through the L1 Cantonese phonological representation. A sublexical route activates the concept and the L2 Mandarin phonological representation through the mediation of L1 Cantonese phonological and sublexical representations using Cantonese-Mandarin pronunciation correspondences. The activation strength is assumed to be proportional to the Cantonese-Mandarin sublexical pronunciation correspondence. Beginning learners of Cantonese mainly use the sublexical route in both L2 Mandarin word production and recognition. Advanced learners gradually develop an inhibitory mechanism to suppress the activation of the L1 Cantonese phonological representation and hence mainly use the concept route in activating the L2 Mandarin phonological representations when speaking in Mandarin. Unlike production, the sublexical route does not get inhibited for advanced learners in L2 Mandarin word recognition and is still in active use to generate possible word candidates. Evidence for this comes from the fact that Cantonese speakers' ability to understand mispronounced Mandarin words (e.g., *mo1gui3* for the word 魔鬼 'ghost') does not deteriorate with increasing L2 Mandarin phonological proficiency, indicating the continued involvement of sublexical information.

References

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