

On the Interaction between L1 Transfer and Universal Constraints

- Evidence from the Acquisition of Mandarin Tones

Phenomenon: Mandarin Chinese has a sandhi process whereby a complex contour 213 becomes 35 when followed by another 213, referred to as the Third-Tone Sandhi. Phonetically, this derived sandhi tone 35 is similar to the lexical tone 35; however, it has been shown that native speakers know that the underlying form of the derived sandhi tone 35 is 213 (Peng 2000). The sandhi pattern becomes more complex in trisyllables: for right-branching sequences, the output is 213.35.213, whereas for left-branching sequences, the output is 35.35.213..

L2 Acquisition of Mandarin Tones: The present study explores the acquisition of Mandarin tones by advanced second language learners, and compares the tonal production of Vietnamese speakers and heritage speakers of Mandarin. The common points of these two types of learners are that they are already familiar with a tone language: there are 6 lexical tones in Vietnamese, but unlike Mandarin, there is no falling contour in Vietnamese. The heritage speakers of Mandarin in the present study have prior knowledge to Mandarin; however, having grown up in North America, they routinely speak English more often in daily life such that they could suffer language attrition.

Procedure: Three word lists were constructed: a list of 50 monosyllables, two lists of bisyllables (including 32 compounds and 32 wug words), and a list of trisyllables (32 right-branching and 32 left-branching sequences), all of which are high frequency words. The stimuli were randomized in order to disguise the purpose of the study.

Data Analysis: Concerning monosyllables, for Vietnamese learners, the main difficulty resides in the confusion between the high level tone and the falling contour tone, the reason being that the falling contour does not exist in Vietnamese. For heritage speakers of Mandarin, the complex contour tone 213 is replaced systematically by the rising tone 35, while the falling contour 53 is replaced by 213. This result parallels that of Native American learners in that the falling contour poses a real problem to learners (Shen 1989). The production result of these two groups also differs in bisyllables: Vietnamese learners systematically confuse 55 and 53, be it in compounds or wug words. This fact suggests that word frequency does not play a role in learners' production. Heritage speakers of Mandarin confuse 213 and 35, and again, be it in compounds or wug words. A possible explanation to this phenomenon is that the complex contour tone 213 surfaces as 35 in sandhi form, and learners have not fully acquired the contexts in which the underlying form and the sandhi form surface respectively. However, both groups of learners show similar results in trisyllabic sequences: the second syllable is the most prone to production errors. The reason arises as to why the tones of the first syllable and the last syllable are relatively stable in learners' interlanguages. Beckman (1997) proposed that the first syllable is perceptually prominent, so it has less chance to suffer vowel harmony in phonological processes. Apart from the salient status of the first syllable, we suggest that the last syllable, which retains its underlying tone in tone sandhi, is also in strong position. Consequently, the second syllable, psychologically and phonologically weak, is the most vulnerable during production.

Discussion: Li&Thomson (1977) have argued that 55 and 53 are acquired earlier than 35 and 214 by children acquiring Mandarin. Our result shows that 55 and 53 are the most difficult for Vietnamese learners. This suggests that L2 learners follow a different acquisition path from native speakers, the phonological system of their native language playing an important role in second language acquisition. Meanwhile, these two groups of learners show similar results in the production of trisyllables. This implies that learners of different language backgrounds are still subject to universal constraints.