Hidden Phonotactic Knowledge of L2 Listeners[*]

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Numerous studies have shown that speakers are sensitive to phonotactic structures which are absent in their native language (Berent & Shimron 1997; Davidson 2000; Moreton 2002; Coetzee 2004; Berent et al. 2006; Albright 2006, 2007). For instance, first language (henceforth, L1) speakers have sonority-related preferences for consonant-consonant (henceforth, CC) onset clusters in nonce words despite the lack of lexical evidence (Davidson 2000; Berent et al. 2006). With respect to the second language (henceforth, L2) acquisition of consonant clusters, it is shown that not all new clusters are equally difficult for L2 learners (Broselow & Finer 1991; Eckman & Iverson 1993; Carlisle 1997, 1998; Hancin-Bhatt & Bhatt 1997). However, apart from Berent et al. (2006), most of the studies on phonotactics are based on production rather than perception. It is not clear whether the preferences for certain phonotactic structures are due to articulatory limitations or to phonological grammars. Therefore, perception tasks were conducted in this study.

Following the minimal violation model of Pater (2004), according to which the role of the phonological grammar in perception is to regulate the markedness of representations based on the acoustic signal, marked structures will be regulated to a larger extent than less marked ones. Given the fact that Mandarin Chinese does not allow any complex onsets while Dutch does so, the current study examines the sensitivity of Mandarin Chinese listeners of Dutch and Dutch native listeners to the markedness of illegal Dutch CC onset clusters (*tl-*, *dl-*; *pm-*, *km-*; *fm-*, *xm-*). Experiment 1 tested whether Mandarin Chinese of Dutch and Dutch native listeners had accurate perceptions of Dutch /l/ and /r/. Experiment 2, a syllable number judgment task, examined the effect of vowel epenthesis. Experiments 3 and 4 were comparative wordlikeness judgment tasks, in which the listeners were asked to select a form which was more Dutch-like within a pair of nonce words.

The results of the perception tasks suggest that Mandarin Chinese of Dutch and Dutch native listeners have different hidden phonotactic knowledge about the illegal Dutch CC onset clusters. Sonority-wise, markedness constraints play a very important role in both groups of listeners' perception grammar. Interestingly, the OCP [COR, -cont] constraint is only active in Dutch native listeners' perception grammar, not Mandarin Chinese. Strikingly, although all the Mandarin Chinese listeners in the tasks were advanced learners of Dutch, they still use their L1 phonotactic grammar to perceive L2 phonotactics. I will adopt Coetzee's (2004) proposal for comparative tableaux, which is that input ~ output mappings show the learners' preferences for certain phonotactic structures in comparative wordlikeness judgment tasks. In the present study, I will propose that the hidden phonotactic knowledge of Mandarin Chinese of Dutch and Dutch native listeners can be accounted for by the comparisons of surface ~ lexicon mappings in the comparative perception tableau. In Mandarin Chinese listeners' perception grammar, the sonority-wise markedness constraints are still ranked higher than the faithfulness constraints in perception. In contrast, in Dutch native listeners' perception grammar, the faithfulness constraints in perception always outrank the markedness constraints (including sonority-wise constraints and the OCP constraint), which might be due to their rich linguistic experience with the consonant clusters.

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