Lexical encoding of L2 tonal contrasts: The role of L1 stress parameters

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This paper explores the influence of existing suprasegmental contrasts in the native language (L1) of the learner on the lexical encoding of novel suprasegmental phenomena in a second language (L2). Previous studies on the lexical encoding of L2 phonological contrasts have mostly focused on segmental phenomena (Hayes-Harb & Masuda 2008), the mental representation of L2 suprasegmental contrasts (e.g., stress and tone) being largely understudied. Furthermore, little is known as to whether having phonemic experience with a suprasegmental feature (e.g., lexical stress) in the L1 fosters the successful encoding of a novel suprasegmental feature (e.g., tone) in the L2.

Here we investigate the extent to which the L1 stress typology may lead to differences in the lexical encoding of novel tonal contrasts. In a cross-modal perception study, we tested native speakers of Russian, German (languages with lexical stress), French (with no lexical stress) and Mandarin Chinese controls (n=32 total) on their ability to lexically encode four Mandarin tones on segmentally distinct sets of disyllabic non-words. The participants were asked to decide if a given auditory word, which was learned in a previous training phase, matches the visual stimulus in three different conditions: (i) Segmental Match-Tonal Mismatch, (ii) Tonal Match-Segmental Mismatch, and (iii) Complete Match. While in the Complete Match condition, we found no differences among the groups, there was a main effect of language in both accuracy and reaction times for the other two conditions. In particular, Russian and German participants were equally able to distinguish tonal minimal pairs with higher accuracy than the French (French: 1.3% vs. Russian: 18.8%, German: 30.5%, p<0.001). All three groups were however significantly worse than the Mandarin controls (86.7%, p<0.001). Surprisingly, Mandarin Chinese controls performed significantly worse than other groups in the Tonal Match-Segmental Mismatch condition (p<0.01 for all comparisons), providing yet another piece of evidence on the primacy of tonal information over segmental information in tone languages (cf. Ye and Connine, 1999; Lee, 2007; Braun and Johnson, 2010).

In light of our results, we will argue that L2 learners who have lexical stress in their L1 are more efficient in lexicalizing other types of suprasegmental information, i.e., lexical tones, than those who have no lexical stress. We will discuss the implications of our findings for the mental representations of suprasegmental knowledge as well as the L2 acquisition of phonological contrasts.

References


