Acquisition of Probabilistic Phonotactics in Complex L2 Structures: The Role of Sonority and L1

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Numerous psycholinguistic studies provide experimental evidence of an influence of biphone frequency on L2 lexical acquisition. On the one hand, there are some studies that demonstrate the importance of biphone frequency in the recognition of different syllable structures. On the other hand, a few studies found an inhibitory effect of high phonotactic probability when learning simple CVC structures.

This study concentrates on the recognition of complex CCVCC structures of German, in which onset and coda can contain well-formed or ill-formed clusters due to the universal Sonority Sequencing Principle. We predict that sonority of onset and coda clusters has an influence on the recognition of L2 German nonwords independent of biphone frequency. The second purpose is to examine the influence of L1 on the recognition of German nonwords, following the fact that some languages ban consonant clusters while another languages have more complex clusters than German does.

We tested these hypotheses using a probed recognition task in which participants were presented a series of four nonwords followed by a probe. The stimuli were monosyllabic CCVCC nonwords that are phonotactically legal in German. They were manipulated along three factors: onset type (well-formed/ill-formed), coda type (well-formed/ill-formed) and biphone frequency of occurrence (high/low). Participants were advanced L2 German learners with Russian or Chinese as L1.

Analysis of reaction times revealed significant differences between the two L1 groups, nonwords with different coda type as well as interaction effects between coda, onset and L1. Nevertheless, no significant differences were found between high and low biphone frequency. The overall results provide an influence of L1 phonotactic knowledge on L2 acquisition. Furthermore, the results suggest that, in L2 acquisition of phonotactically complex structures, sonority of onset and coda clusters is more important than frequency.