

# “They *sound* the same, but I *know* they are different”: Dissociated mechanisms for phonetic and lexical learning in a second language

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New sounds in a second language (L2) are often misperceived as instances of familiar categories in the first language (L1), as suggested by the PAM-L2 (Best & Tyler, 2007): for example French /y/ is often categorized as English /u/ because learners lack a specific phonetic category for /y/. Previous research suggests that given the lack of a category for the new sound (/y/), learners might confuse L2 words that differ minimally along this contrast (Pallier et al., 2001): words such as “sourd” and “sure” (/sur/ vs. /syr/) are indeed often confused in production and perception by L2 learners of French.

In this talk, I challenge the idea that the establishment of a new phonetic category is a prerequisite to successfully establishing a lexical representation for L2 words using this contrast. I report on a series of experiments probing phonetic categorization and lexical encoding of French front-rounded vowels. A categorization experiment (ABX) reveals that advanced and intermediate learners of French (L1 English) show a good discrimination of the high (/u-/y/) vowel contrast, but a poorer discrimination of the mid vowel contrast (/ø-/o/). Surprisingly, repetition priming data indicate that for intermediate learners, /u-/y/ minimal pairs might share the same phonological representation in the lexicon, despite good discrimination of the high vowel contrast. The *same* learners did not experience merged phonological representations for /ø-/o/ minimal pairs, regardless of their poorer discrimination of the contrast. These results suggest that the mechanisms involved in the acquisition of a new phonetic category are dissociated from those involved in the formation of contrastive lexical representations in L2, and I conclude that successful lexical contrast is possible independently of robust phonetic category establishment.

However, having established a lexical *contrast* does not mean that lexical representations are target-like. To dig further into the form of phonological representations in the lexicon, a second series of experiments (ABX and lexical decision) was conducted, testing the same vowel contrasts in L2 German with intermediate and advanced L2 learners, as well as native speaker controls. Our results show that intermediate learners exhibit asymmetrical lexical decision patterns (easier rejection of non-words that contain a familiar category than vice-versa) despite very good phonetic discrimination. This indicates that their lexical representations are not fully target-like: new categories are represented in a fuzzy way in the lexical representation of L2 words. Taken together, our data suggest that robust phonetic categories are neither a prerequisite nor a guarantee for target-like lexical representations.

Best, Catherine T., & Tyler, Michael D. (2007). Nonnative and second language speech perception. Commonalities and complementarities. In O.-S. Bohn & M. J. Munro (Eds.), *Language experience in second language speech learning: In honor of James Emil Flege* (pp. 13-34). Philadelphia: John Benjamins.

Pallier, Christophe, Colomé, Angels, & Sebastian-Gallés, Nuria. (2001). The influence of native-language phonology on lexical access: exemplar-based versus abstract lexical entries. *Psychological Science*, 12, 445-449.