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## **Functional load of fundamental frequency in the native language predicts learning and use of these cues in second-language speech segmentation**

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### Abstract

This study investigates whether second-language (L2) learners make greater use of prosodic cues to word boundaries if these cues have a higher functional load in the native language (L1). It examines the use of fundamental-frequency (F0) rise in the segmentation of French speech by English- and Dutch-speaking L2 learners of French matched in French proficiency and experience (and native French listeners). In both English and Dutch, an F0 rise tends to signal word-initial boundaries in pitch-accented words with initial stress, but English has more vowel reduction than Dutch, and thus full vowels also signal word-initial boundaries in English. By contrast, in French, an F0 rise tends to signal word-final boundaries. Participants completed an eye-tracking experiment: They heard sentences where the monosyllabic target ended or did not end with an F0 rise (duration being held constant), and saw four orthographic words in the display, including the target (*bal* “ball”) and a disyllabic competitor (*balcon* “balcony”). Growth curve analyses on participants’ fixations revealed that Dutch listeners made earlier and greater use of F0 cues than English (and French) listeners. These results suggest that the functional load of F0 in the L1 predicts the learning and use of these cues in the L2.