

Perception and production of Basque sibilant fricatives by native and non-native speakers
Melissa Baese-Berk – University of Oregon

Differences in perception and production of non-native contrasts are thought to be driven by the relationship between sound inventories of the native and target languages. The current study examines non-native perception and production of sibilant fricatives and affricates in Basque. Basque has a 3-way place contrast for sibilant fricatives and affricates. Although the description of these fricatives differs among the few sources that have directly examined acoustic and articulatory properties of these phonemes, these fricatives and affricates are most frequently defined as apico-alveolar, lamino-alveolar, and post-alveolar. In contrast, Spanish has relatively few voiceless sibilant fricatives, including only /s/ and /tʃ/. The results of the present study suggest native speakers demonstrate quite robust discrimination and make significant differences in their productions for each of these contrasts. However, these differences are not easily classified by only one or two spectral moments. That is, typical metrics for differentiating among phonemes are not sufficient to differentiate among the phoneme contrasts in Basque.

Interestingly, for non-native speakers the situation is quite different. In this case, for Basque sibilant phonemes, similarity to an existing contrast (i.e., fricative-to-affricate contrasts) results in better perception and production for non-native speakers. Native Spanish speakers performed better on discrimination and repetition of the /s/ - /tʃ/ contrast than the /s/ - /ʃ/ or /s/ - /f/ contrasts. Spanish speakers are able to leverage their ability to discriminate and produce /s/ and /tʃ/ in their native language to perceive and produce a new contrast in Basque, even though the contrast in Spanish differs by two features, rather than just one as in Basque. It appears that the non-native speakers in the present study utilize the post-alveolar place of articulation for the affricate, instead of an apico-alveolar place of articulation. However, the lack of a contrast between sibilant fricatives prevents them from discriminating or producing the fricative-to-fricative contrasts. Because it is quite complicated to describe the differences among the three fricatives and affricates in Basque for native speakers, it is even more difficult to explain how these distinctions may be produced and differentiated by non-native speakers.