

## Accessing Cross Language Categories in Learning a Third Language

By virtue of being exposed to two languages bilinguals receive a more variable and diverse input than monolinguals. How bilinguals organize their two languages can affect the degree to which this variability is a factor in speech production and perception. Current theories differ greatly in explaining how bilinguals organize their two languages, including at the sound level. The heart of the debate is whether bilinguals have constant access to all of their sounds across their two languages, or only access to sounds from one of their two languages at a time. Cutler et al. (1992) claimed that bilinguals only have one system for perception based on their dominant language. Macnamara & Kushnir (1971) suggested that bilinguals represent each language with two separate systems controlled by an on/off “input switch”, making ambient language or language “mode” the important factor. Others claim that bilinguals have two merged systems, controlled by a schema of activation and suppression, resulting in an interaction between ambient language and language dominance (Green, 1998). Another possibility is that bilinguals have both languages available to them at all times in one pool of exemplars, where language dominance plays a small role; in the vein of Johnson (1997) and Pierrehumbert (2002)’s theories on monolinguals. The first two theories predict that bilinguals will be limited to contrasts from one of their two languages at a time, while the second two theories predict that contrasts from both languages should be available at all times but to differing degrees.

The present study examines these theories by testing the ability of Spanish-English bilinguals and English monolinguals to access phonetic distinctions within the voice onset time (VOT) continuum. English has short-lag and long-lag VOT word initially, while Spanish has negative and short-lag VOT. To see if bilinguals can access all three of their categories at once (negative, short-lag, and long lag), bilinguals are tested on a third language that has all three contrasts phonemically: Eastern Armenian. English monolinguals are also tested on Eastern Armenian, with the hypothesis that they should be limited to their two-way English contrast. The current study includes two perception experiments. The first is an AX discrimination task to test if listeners can perceive the three-way distinction at the phonetic level. Listeners hear two words and say if the words are the same or different. The second experiment is an ABX discrimination task to test how listeners group the three phonetic categories into phonological categories. Specifically, the experiment tests whether listeners categorize the short-lag VOT category in the same category as the negative VOT category (as they would if they operate in English) or long-lag VOT category (as they would if they operate in Spanish). Listeners hear three words and say if the third word is the same as the first or the second word. The bilabial contrasts ([b], [p], and [p<sup>h</sup>]) and the velar contrasts ([g], [k], and [k<sup>h</sup>]) are test items. The experiments include two groups of listeners: 1) early Spanish-English bilinguals who learned both languages before the age of 6, and 2) English monolinguals. Half of the bilinguals receive instructions in English and half in Spanish. All English monolinguals receive instructions in English.

Preliminary results for bilinguals who received instructions in English suggest that the more balanced a listener is in their two languages the more similarly they perform for the two key contrasts (e.g. [b] vs. [p], [p] vs. [p<sup>h</sup>]). Listeners who were more heavily English dominant did worse at the negative/short-lag VOT contrast as compared to the short-lag/long-lag VOT contrast. These initial results support a theory whereby dominance is a key determining factor in processing, at least when all other factors are kept constant. Furthermore, it suggests that more balanced bilinguals are better at handling the increased variability of their bilingual input. By testing bilinguals in Spanish as well as English monolinguals we can expand upon these results.

## References

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