

# Perception of voiceless and voiced stops in English by Brazilian and Argentinean learners

Ubiratã Kickhöfel Alves

Universidade Federal do Rio Grande do Sul - CAPES

ukalves@gmail.com

The acquisition of L2 phonology is a complex process. In order to acquire a new phonological contrast, learners have to focus on the main acoustic(s) cue(s) responsible for this phonological distinction in the target language. Therefore, L2 learners might be required to focus on acoustic cues which are not attended to in their L1, should these cues not play a decisive role in their first language (Sundara, 2005; Kong et al., 2012).

In Alves, Schwartzhaupt & Baratz (2011) and Alves & Motta (2013), we presented the results of perceptual studies carried out with Brazilian learners acquiring stop voicing distinctions in English. The results of these studies indicated that, despite its importance, VOT might not be the main acoustic cue employed by Brazilian learners in voicing distinctions, unlike what happens among L1 speakers of English. Similar results have already been found in other language systems, such as Canadian French (Sundara, 2005) and Japanese (Kong et al., 2012). In these languages, additional cues, such as burst intensity and fundamental frequency (F0) in the following vowel, take the lead as the main acoustic correlates employed to distinguish plosive segments.

Departing from these results, in the present study, we aimed to investigate whether VOT corresponds to the main acoustic cue employed by learners of English with a different L1 background: Argentinean Spanish. Twenty participants, from the city of Mar del Plata (Buenos Aires Province / Argentina) took part in the experiment. All learners took the Oxford Placement Test Online, which divided them in two groups according to their language proficiency. In both an Identification and a Discrimination task, learners were tested on the three VOT patterns found in English (Negative VOT and Zero VOT, which occur variably in /b/, /d/, /g/, and positive VOT, which is found in /p/, /t/, /k/). In these tests, we also included a manipulated pattern (Artificial Zero VOT). This pattern was built as we cut off the aspiration of /p/, /t/ and /k/ produced by native speakers of English, so that a hybrid consonant, showing a Zero VOT pattern besides other acoustic cues that are typical of aspirated consonants (such as burst intensity and F0 transitions), could result from this manipulation.

The data obtained from our participants show that VOT does not seem to be the main cue attended to by Brazilian and Argentinean learners of English when dealing with voicing distinctions in the target language. In both the Brazilian and in the Argentinean interlanguage data, Negative and Natural Zero VOT tended to be perceived as voiced stops, whereas Positive and Artificial VOT were mostly identified and discriminated as voiceless, despite the absence of aspiration in the latter. The results obtained in this research project confirm the dynamic status of speech perception and production, according to which acoustic cues do not act individually, but reinforce one another in the establishment of the sound contrasts of a given language system.

## References

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