

## L2 Spanish Speakers' Perception and Production of Utterance Initial Intonation Cues in Y/N Questions and Statements

English broad focus statements and yes-no (Y/N) questions differ not only in their intonation pattern but also in their word order. In Spanish, however, the only difference between these two types of utterances is the intonation pattern. The word order and number of words is exactly the same:

(1) *Rompió la mesa del comedor.*  
(He broke the dining room table.)

(2) *¿Rompió la mesa del comedor?*  
(Did he break the dining room table?)

English speakers acquiring Spanish must learn that in their L2 they rely solely on intonation patterns to distinguish these two types of utterances. While Y/N questions in both languages make use of a final rising contour, other intonation cues differ, in some cases, quite noticeably. The focus of the current project is the initial part of the utterance, particularly initial boundary tone height and pre-nuclear peak height (Figure 1).

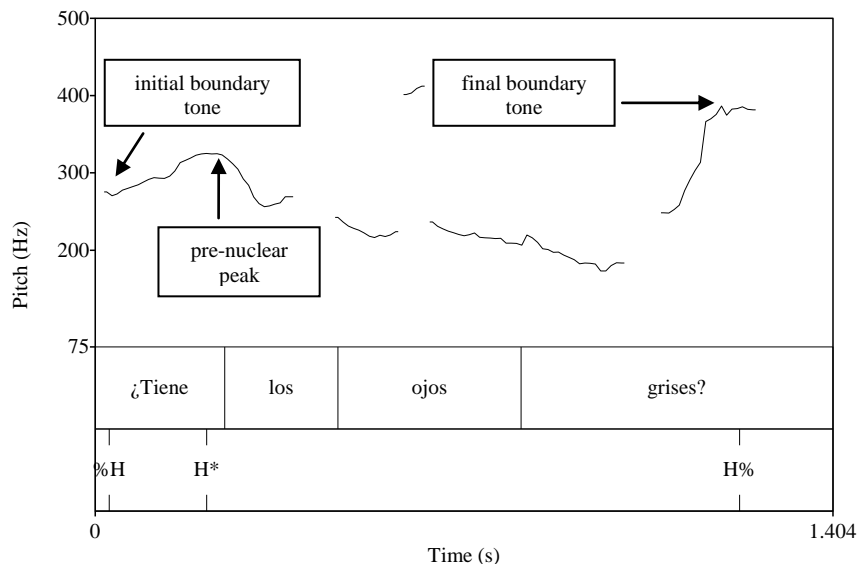


Figure 1. *¿Tiene los ojos grises?* (does he/she have grey eyes?) spoken by a female native Spanish speaker. Initial boundary tone, pre-nuclear peak, and final boundary tone are indicated.

The research questions guiding this project are: 1) Can advanced L2 Spanish (L1 English) listeners detect intonational phonetic differences not present in the equivalent structures of their L1? 2) Can advanced L2 speakers produce these phonetic differences? 3) Does a more accurate perception of these intonation elements predict a more accurate production in L2 speakers? Spanish signals a Y/N question from the very beginning of the utterance by making use of a higher initial boundary tone as well as a higher pre-nuclear peak with respect to its comparable statement. This height difference is not used in English to signal the presence of Y/N questions and comparable statements (*English*: Pierrehumbert, 1980; Bartels, 1999; *Spanish*: Sosa, 1999; Hualde, 2005). Based on a previous pilot study, the predictions for this study were: 1) participants will be highly successful in the discrimination of acoustic differences with errors occurring primarily at the beginning of the utterance. Reaction times, however, will be longer when only hearing the initial portion of the utterance; 2) participants will show greater difficulty

in mastering the production of these utterance-initial cues; 3) accurate perception is a prerequisite for accurate production. Participants with fewer perception errors will be more target-like in their production.

Five advanced L2 Spanish (L1 English) speakers took part in this study with two components: a perception task and a production task. The perception task was based on Grosjean's (1980) gating paradigm. Participants heard increments of either a Y/N question or a statement in Spanish and were asked whether they heard a question or a statement at each gate. The increments (gates) were: i) after the first stressed syllable, ii) before the final stressed syllable, and iii) at the end of the full utterance<sup>1</sup>. This was a timed-response task and the participants heard only original (unmodified) recordings. In the production task the participants were presented with different scenarios that elicited either a Y/N question or a statement. In order to do this, a portion of the scenario was masked by a barking dog. The participant needed to fill that gap based on what was thought to be the best fit given the scenario.

Preliminary results are reported here. In perception participants were overall successful at identifying utterance type at the three gates. Most errors occurred at the first gate, as expected. Confusion occurred in both directions and in equal amounts (questions for statements and statements for questions). Some identification errors were also found at the second gate. Most of them were statements identified as questions. Reaction times at gate 1 were noticeably longer than at gates 2 and 3, as expected. In production, only one of the 5 participants showed a clear height difference in pre-nuclear peaks. Specifically, Y/N question peaks were noticeably higher than their statement counterparts. This same speaker also had the lowest amount of perception errors. The other participants showed no difference between Y/N questions and statements in the initial portion of the utterance.

These findings suggest that L2 speakers are able to detect intonational cues not present in their L1 but they do not just as easily reproduce them. It seems that accurate perception is a prerequisite for accurate production in L2 intonation. These findings inform the relationship that exists between perception and production of L2 intonation, an area that has yet to be studied in great detail.

## References

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<sup>1</sup> These points were found to be most important in native Spanish speakers by Face (2007) who also used the gating paradigm in his perception experiments.