Production of redundant and primary prosodic cues to sentence type by L1 Spanish and Mandarin learners of English

L. Colantoni, G. Klassen, M. Patience, M. Radu & O. Tararova
University of Toronto

One of the uncontested linguistic uses of intonation is the marking of sentence-type. Intonation, however, could be a redundant cue to sentence type, as in English statements or absolute yes-no questions (AQs), or the only cue, as in declarative questions (DQs). In this paper, we compare the realization of sentence prosody by advanced Spanish and Mandarin learners of English across two experiments that differed in the amount of contextual information provided. Our research seeks to answer two questions: Are primary and secondary prosodic cues equally acquired? Does access to contextual meaning facilitate or hinder the acquisition of prosodic cues?

To answer these questions we compared Canadian English controls to L1 Mandarin and L1 Spanish learners of English (6 participants per group). An English learner needs to acquire the semantic properties that differentiate these types of questions, in addition to the syntactic, phonetic and phonological properties that distinguish DQs, AQs and statements (Bartels 1997; Gunlogson 2001). Mandarin and Spanish differ from English in the fact that the two types of questions are syntactically identical. As opposed to Mandarin, Spanish only uses intonation to distinguish statements from questions (i.e. there is neither inversion nor use of any question particles). Questions differ from statements in the height of the first pitch accent (PA) and in the final boundary tone (rising vs. falling) (Sosa 1999; Hualde 2005). Mandarin questions could have a lexical marker (ma) at the end of the sentence with a rising boundary tone or be syntactically marked by using the structure of Verb-not-Verb (Liu & Xu 2005). There is no consensus, however, on whether questions differ from statements in the use of some global cues, such as an expanded pitch range (Yuan 2006). Based on previous research (Trofimovich & Baker 2006), we expect Spanish and Mandarin participants to have difficulty with some secondary cues (PA height –L1 Spanish-, and timing of the nuclear rise –L1 Mandarin-). Additionally, we expect larger differences overall when contextual information is involved.

Participants had to perform two tasks. Task 1 involved the repetition of de-contextualized sentences (10 stimuli per sentence-type plus 30 distractors). In Task 2, a context was provided and participants had to produce the sentence they deemed most appropriate to the context. A total of six contexts per sentence type were presented; no distractors were included. Target sentences were extracted from the recordings and the first PA and the nuclear contour (final PA plus boundary tone) were (i) labelled using ToBI, and (ii) acoustically analysed (F0 changes and F0 slope). Results suggest that the two tasks yielded different patterns of cross-linguistic influence. In the elicited imitation task (Task 1), phonetic differences were restricted to the PA realization in both groups. Mandarin learners closely resembled controls but displayed more frequent uses of PAs. L1 Spanish speakers, contrary to our predictions, displayed significantly smaller F0 changes (Repeated measures ANOVA’s results: $F_{(2,28)}=3.38; p=.03$) than the other two groups. In Task 2, L1 Spanish speakers merged the two question types more frequently than L1 Mandarin speakers (30% vs. 11%), showing a preference for inverted questions. Phonological (selection of PA types in declaratives by L1 Spanish speakers) and phonetic differences (Mandarin speakers displayed a significantly larger - $F_{(2,18)}=9.52; p=000$- pitch excursion size in the realization of the nuclear contours) also emerged. In conclusion, results suggest that the
acquisition of intonation (as well as of other features) should be assessed through a wide variety of tasks. When the task demands are higher, cross-linguistic influence increases.

Reference List: