The production of contrastive focus in L2 Spanish

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Languages exploit prosodic features in different ways (Atterer & Ladd 2004; Chen 2005; Estebas-Vilaplana 2014), and those differences have been shown to be transferred into L2 speech (Mennen 2004; Rasier and Hiligsman 2007; Chen 2009). Mennen's (2015) L2 Intonational Learning theory (LILt) suggests that L2 prosody can show transfer at systemic, realizational, semantic and frequency dimensions when compared to L1 prosody. Here we use the case of informational (shown in 1a) vs. contrastive focus (shown in 1b) (Kiss 2008; Fèry 2013) in the L2 Spanish of native speakers of Mainstream American English (MAE) to explore some of the predictions of Mennen's model. Table 1 shows the typical form-meaning relationships for these two types of focus in MAE (Beckman, Hirschberg & Shattuck-Hufnagel 2005) and Peninsular Spanish (PS) (Prieto & Hualde 2015). At the SYSTEMIC level, the same label (L+H*) is employed in MAE and in PS to convey contrast, but the phonetic realization of this focal accent may not necessarily be the same, resulting in differences at the REALIZATIONAL dimension as well (García-Lecumberri, 1995; Ortega-Llebaria and Colantoni, 2014). Therefore, while the same category is used in both languages, the realization of this category differs. We thus predicted that L2 speakers of Spanish with MAE would use the pitch categories used in the L1 for informational and contrastive focus in their L2 Spanish, thus transferring the realizational aspects of contrastive focus marking to their L2. In this study, we examined the prosodic features used by these L2 speakers as well as a control group, specifically pitch range, alignment, and duration.

Ten speakers of PS and ten speakers of MAE learning Spanish in a 300-level Spanish pronunciation course at an American university were presented with a question-answer task consisting of 12 questions, eliciting informational and contrastive focus alternately (see 1a & 1b). The L2 group performed this task in both languages, first in Spanish and immediately after in English. The accented syllable in the final word was then coded for the following prosodic features: F0 range (calculated in semitones (st) using the formula: *12*log2(Hz)-12*log2(origin)*), peak alignment (using normalized peak locations (Redi 2003)), and duration of the stressed syllable (normalized in z-scores). Each of these features was the dependent variable in a series of two-way ANOVAs, with FOCUS TYPE (Informational vs. contrastive) and LANGUAGE (English, L2 Spanish, and Spanish) as the independent variables. Pairwise t-tests with the Holm adjustment were run to account for within and between-group comparisons.

Results indicate that L2ers are using pitch categories from their L1, H* and L+H*, which differ based on peak alignment (Fig. 1): significantly later F0 peaks were used significantly more in contexts of contrastive focus both in their L1 ($p<0.001$) and in their L2 ($p<0.001$). In terms of the phonetic implementation of pitch accents in cases of contrastive focus, their peaks are produced significantly earlier in their L2 as compared to their English ($p<0.05$) but significantly later when compared to native speakers of Spanish ($p<0.001$). With respect pitch range (Fig. 2), L2ers used significantly wider pitch range than native speakers both in English ($p<0.01$) and in Spanish ($p<0.001$). Nonetheless, the differences in pitch range based on focus condition were only significant in L2 Spanish ($p<0.001$). Longer duration was used as a cue to mark contrastive focus both by Spanish and English speakers (both in their L1 and in their L2), resulting in no significant differences between groups for this measurement. The differences in alignment and pitch range suggest the presence of transfer at the REALIZATIONAL dimension, since these cues are being used similarly in the L1 and the L2. Nonetheless, their interlanguage also seems to be moving away from the L1 in an attempt to mark contrast following the parameters characteristic

of the target language (although not always successfully) adjusting peak alignment and manipulating pitch range.

Table 1. Form-meaning relationships for MAE and PS

	Informational focus	Contrastive focus
American English	H*	L+H*
Peninsular Spanish	L+H*	L+H*

(1a) A: Which animal did the zookeeper feed?
B: She fed the tiger

(1b) A: She fed the linx?
B: She fed the TIGER

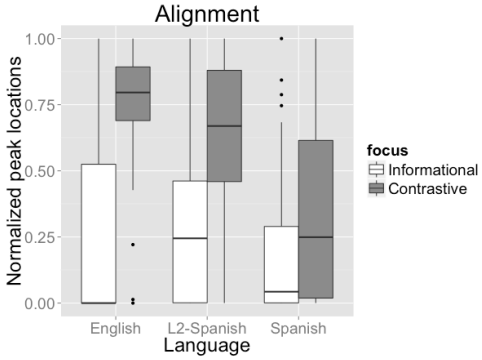

FIGURE 1. Normalized alignment for English, L2 Spanish and native speaker Spanish

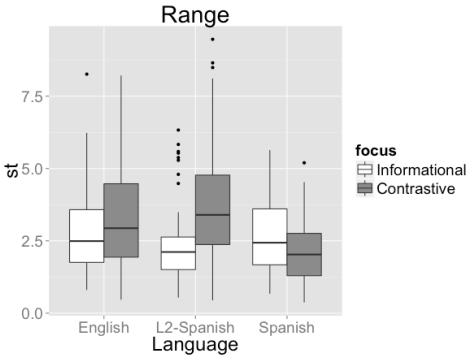

FIGURE 2. Pitch range in semitones for English, L2 Spanish and native speaker Spanish

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