

Perception of Contrastive Focus by L2 Learners

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In English and Japanese, the information-structural notion of contrastive focus can be realized through acoustic prominence, but the way it is marked is language-dependent [1,2]. While contrastive focus is marked with a bitonal pitch accent (L+H*) in English [1], in Japanese accent carries lexical information and is not principally used to convey discourse information [3-5]. Furthermore, while stressed syllables in English are lengthened under prominence [6], Japanese is a mora-timed language and the duration of syllables is less flexible [7].

The present study investigates the degree in which L2 learners are able to perceive contrastive focus for prosodically different languages such as English and Japanese. [8] examined acquisition of prominence and boundary perception in English by Japanese learners of English as a Foreign Language (JEFL) and found that learners are much poorer at perceiving prominences and boundaries than native speakers in spontaneous speech [6], although it wasn't clear why; Fleiss' kappa scores on inter-speaker agreement for prominences and boundaries are English L1 0.402, 0.63 > Advanced JEFL 0.305, 0.521 > Intermediate JEFL 0.284, 0.458.

[9] found that for languages with stronger acoustic marking of contrastive focus, L1 listeners were able to identify the focused material with almost perfect accuracy (97.3% for English). On the other hand, in languages with weaker marking of contrastive focus, L1 listeners were able to identify the contrastive word above chance but at very low accuracy rates (44.6% for Seoul Korean). Japanese was classified in the second group but no perception data was collected.

Taken together, do Japanese speakers have difficulty with hearing prominence in English [8] because acoustic prominence is not so saliently marked in Japanese [9]? In the present study, following the methodology used in [9], one male speaker of Midwest American English and one male speaker of Tokyo Japanese recorded a series of ten question-answer pairs which contained a ten digit number of the form XXX-XXX-XXXX. In each of the responses one of the ten numbers was produced with contrastive focus. 22 JEFL students (intermediate and advanced) between the ages of 18 and 24 were recruited for the L1 experiment and 18 for the L2, at two Japanese universities. In the experiment, subjects listened to each recording and marked on a transcript the word that they heard as contrastive. They listened to each recording once.

The results (Figure 1) show that Japanese speakers are able to accurately perceive contrastive focus in both their L1 (86.2% for Japanese) and their L2 (98.6% for English). In the recordings, focus correlates most strongly with the rms intensity of the word in Japanese and the mean F0 of the word in English. Thus, for both languages, we found that contrastive focus was marked in our utterances and that the participants were sensitive to the cues marking contrast.

The high accuracy obtained under the native Japanese speech is counter to the expectations made in [9] and it is not clear how to reconcile this difference. Similarly, [8] would not have predicted such high accuracy with the non-native speech perception task, although there are several possible reasons for this result. While [8] involved perception of holistic prominence over spontaneous speech, the task in the present study is much simpler as it involves a specific type of prominence using read speech and shorter speech segments.

It may be conjectured that the degraded accuracy in positions 7 and 10 (Fig. 1) for Japanese can be accounted for in terms of interactions of degrees of pitch downtrend at the end of an utterance and lowering at the beginning and end of an accentual phrase [3], but more experimental work is needed to confirm this. No matter how the facts are accounted for, this study has shown that L2 prosody is not as simple a mechanism as it was believed. Learners may have enough ability to hear contrasts in L2 in its simplest form, but, given contexts as in [8], they will get confused.

References

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Figure 1: Accuracy of Japanese L1 learners of English in words bearing contrastive focus in the specified position of a ten digit number string (with the nine other numbers being already part of the discourse) in Japanese and English utterances.

	Target Word Position (% accuracy)									
	1	2	3	4	5	6	7	8	9	10
L1 (Japanese)	100	88	91	97	98	92	65	91	82	58
L2 (English)	100	100	100	100	100	98	100	98	96	94