VP FOCUS AND NARROW FOCUS IN KOREAN

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ABSTRACT

According to the Focus Projection theory, a focused word projects its focus to a larger syntactic constituent. When a Verb Phrase (VP) has two arguments (e.g., *gave a boy a book*), focus on the verb-final argument licenses focus on the VP. According to the Information Packaging theory of focus applied to Korean, focus on a theme argument licenses focus on the VP. However, production data of Korean focus support neither theory. Results show that in Korean a VP-initial argument is the most prominent in a sentence with VP focus regardless of the order or the type of the arguments, but is still not as prominent as the VP-initial word receiving narrow focus.

Keywords: VP focus, narrow focus, Korean intonation, Focus Projection.

1. INTRODUCTION

In most languages, focus has prosodic reflexes [4]. A focused word has expanded pitch range, longer duration, and stronger amplitude, while a pre- or post-focus string often has a reduced pitch range and reduced duration and amplitude. But, languages differ in how these prosodic features are linked to their phonology. For example, focus can be marked by the type of pitch accent and phrasing in English [1, 15] and Bengali [10], but by a change in phrasing in Korean [9]. Jun and Lee [9] have found that in Korean a new prosodic boundary is inserted before a focused item and that the following words tend to be phrased into the same phrase as the focused word, i.e., dephrasing. Though dephrasing is optional, the pitch range is always expanded on the focused word but significantly reduced after the focused word compared to that in the neutral sentence. They also found substantial lengthening of the focused item, especially on the first syllable of the word.

Languages may also differ in the way they mark focus domains larger than a word, e.g., VP-focus as an answer to *What did Mary do?*. In English and other West Germanic languages, VP-focus is realized by making the VP-final argument the most prominent in the domain, thus similar to the case where the rightmost argument in the VP is narrowly focused. That is, the utterance "*Mary gave a book to a BOY*" can be a felicitous answer to a VP-focus question, "*What did Mary do?*" or a wh-question with narrow focus on the noun, '*a boy*', i.e., "*Who did Mary give a book to*?". This phenomenon has been explained by various proposals. The most well-known, traditional, analysis is a syntax-based Focus Projection analysis [12, 14], which claimed that a focused internal argument can project its focus to its head phrase recursively. Non-arguments, such as adjuncts and specifiers, may not project focus to a larger constituent. However, this purely syntax-based analysis cannot explain why a certain internal argument cannot project focus [5] (e.g., "*The butler offered the PRESIDENT some coffee*." cannot be a felicitous answer to *What did the butler do?*). Valduvi and Engdahl [16] proposed a different approach based on their Information Packaging Theory. They considered the interactions between the grammatical function and the types of an argument. Chung *et al.* [3] applied this framework to Korean and claimed that in Korean when there are two arguments as in the case of *give* or *offer* type verbs, the theme (non-agentive) argument may project its focus to the verb phrase, but not the oblique argument such as an indirect object or locative noun phrase. This was claimed to be the same regardless of the order of the arguments. Thus, in the examples given in (1), (i, ii) can be an answer to the VP focus question, *What did you do?,* but (iii, iv) cannot because only the theme argument may project focus to its head phrase.

(1) i. [mal-eykey [TANGKUN-UL]$_F$ mekyesse]$_F$
a horse-DAT a carrot-ACC fed
'(someone) fed a horse a CARROT.'
ii. [[TANGKUN-UL]$_F$ mal-eykey mekyesse]$_F$
a carrot-ACC a horse-DAT fed
'(someone) fed a CARROT to a horse.'
iii. *[[MAL-EYKEY]$_F$ tangkun-ul mekyesse]$_F$
a horse-DAT a carrot-ACC fed

'(someone) fed a HORSE a carrot.'

iv. *[tangkun-ul [MAL-EYKEY]$_F$ mekyesse]$_F$
a carrot-ACC a horse-DAT fed
'(someone) fed a carrot to a HORSE.'

In Kim *et al.* [11] and Jun *et al.* [8], we examined the phonetic realization of the VP-focus. It was found that VP-focus was not projected from a non-agentive theme argument as proposed. Instead, VP-focus was marked by emphasizing the VP-initial argument of the phrase, regardless of the argument type, and unlike English, VP-medial arguments were also prominent, compared to those in the default reading (i.e., neutral focus). In these studies, VP-focus data were compared with the default production of the same sentences so we could not tell if the degree of prominence in the VP-focus condition is similar to that in the narrow focus condition, as is assumed in English. In the current paper, we compare phonetic realizations of VP-focus with those of narrow focus along with the realizations of neutral focus.

The paper is organized as follows. Section 2 summarizes the experiment, Section 3 reports the results, and Section 4 discusses the findings.

2. THE EXPERIMENT

A production experiment was designed to examine how VP-focus differs from NP (narrow)-focus and neutral focus in Korean when the order and the type of arguments within the VP vary. (Results from VP-focus and neutral focus data were reported in [8] and [11]). The following is a brief description of the experiment data and procedures.

Data and Subjects: Two sets of sentences containing two arguments were designed as in (2). Set 1 had a theme argument (Direct Object, DO) and an Indirect Object (IO) in different orders, and Set 2 had a DO and a Locative argument (LOC) in different orders.

(2) Set 1: Subj+IO+DO+Verb vs.
Subj+DO+IO+Verb
Set 2: Subj+LOC+DO+Verb vs.
Subj+DO+LOC+Verb

A total of 32 sentences (= eight sentences in each set x 2 word orders x 2 data sets) and 32 filler sentences (SV or SOV sentences) were produced by four native Seoul Korean speakers (2 female and 2 male). Different word orders of the same sentence were presented two weeks apart.

Procedure: 1. A sentence was visually presented on a computer monitor. 2. Subjects read each sentence twice (elicited neutral focus), ex. *Yongho fed carrots to a horse*. 3. The sentence disappeared from the monitor. 4. Subjects heard a question prompting VP-focus, ex. *What did Yongho do?* 5. Subjects responded to the VP-focus question by supplying the sentence they heard. 6. Subjects heard a question prompting narrow-focus on the theme, ex. *What did Yongho feed to a horse?* or *What did Yongho feed carrots to?*.

This procedure produced two neutral tokens, one VP-focus token, and one narrow-focus token (theme or goal) of each sentence.

Analysis: For each utterance, prosodic phrasing and tonal patterns were transcribed following Korean ToBI (K-ToBI) conventions [7] which are based on Jun's intonation model of Seoul Korean [6]. According to this model, Korean has two prosodic units above the Word: an Intonation Phrase (IP) and an Accentual Phrase (AP). An IP is the largest prosodic unit and contains one or more APs. Each AP can contain one or more words but in general it is slightly larger than a Word. Both prosodic units are demarcated by a phrasal tone, but an IP is additionally marked by substantial lengthening of its phrase-final syllable.

Pitch (f0) peak values were measured for each word, and the duration was measured for the whole word and the initial syllable of the word.

3. RESULTS

3.1. Phrasing

Neutral-focus: As found earlier [13], each word formed one Accentual Phrase.

VP-focus: Regardless of word order, the VP-initial argument often initiated an IP (avg. 70%) and, to a lesser degree, the VP-medial argument also initiated an IP. Unlike in narrow focus, dephrasing was very rarely found. See Figure 1 for individual speakers' phrasing data.

Narrow-focus: As in corrective focus [9], the post-focus string was often dephrased or produced in a reduced pitch range. In addition, IP breaks were found before (60%) or after (30%) or both before/after the focused word. The pattern was similar regardless of the argument type. See Fig. 2.

3.2. f0 Peak

Figure 3 shows IO/DO data from male speakers (a similar f0 pattern was found in LOC/DO & female

data). In general, the f0 of all words in the VP-focus condition was slightly higher than the default condition, but especially high on the VP-initial word (Wd2), though not as high as that under narrow focus. The f0 on the VP-medial argument (Wd3) showed a similar pattern: narrow focus>VP focus>neutral. The figure shows a reduced pitch range on Wd3 when Wd2 was narrowly focused.

Figure 1: Frequency (%) of IP boundaries at the left edge of each argument in the VP-focus condition.

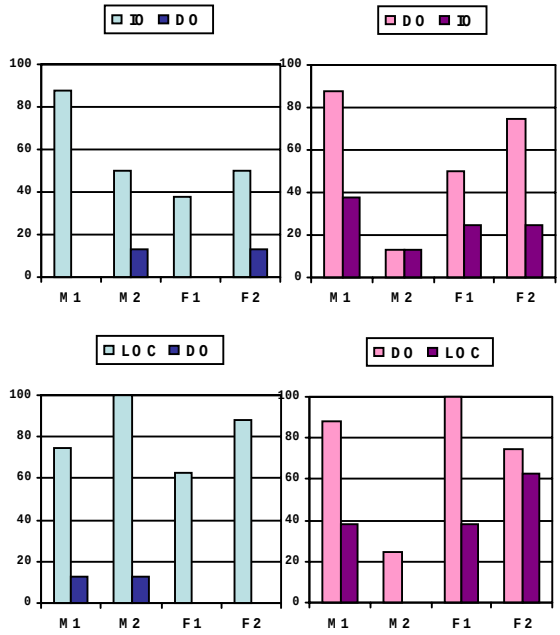
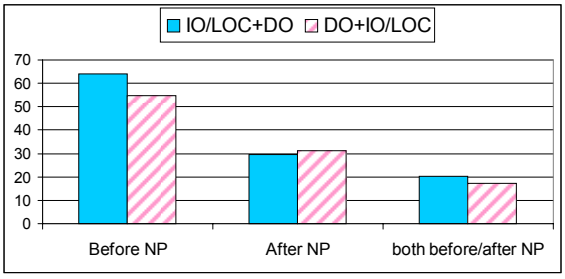


Figure 2: Frequency (%) of IP boundaries at the left and right edge of a focused argument in the narrow focus condition.



3.3. Duration

Figure 4 illustrates that the duration of Wd2 (VP-initial word) was significantly lengthened when the VP was focused, but still shorter than when narrowly focused. For Wd3 (VP-med word), narrow focus was the longest and the difference between VP-focus and neutral focus was weakened.

Figure 3: F0 peak (Hz) on each word in three different focus conditions (male data). Word2 begins a Verb Phrase. When Word2(IO) is narrowly focused (NF), NF>VP, NF∨VP> Neut; when Word2(DO) is NF, NF∨VP > Neut; when Word3(DO) is NF, no significant difference was found; when Word3(IO) is NF, NF > VP∨Neut. In this case, VP>NF, VP>Neut for Wd2.

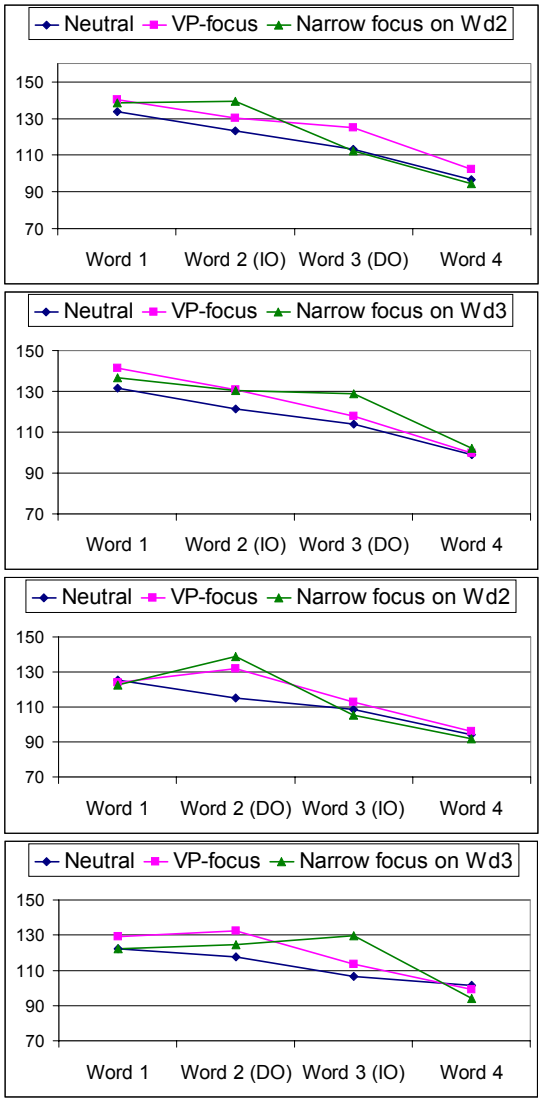
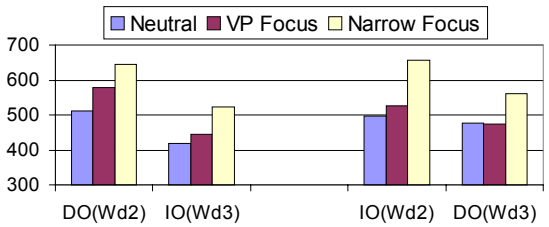
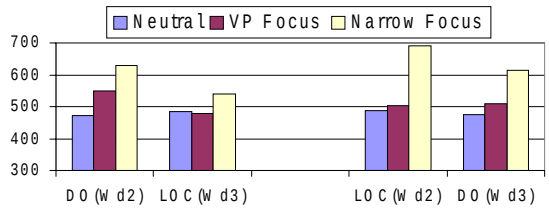


Figure 4: Duration (ms) of Wd2 and Wd3 in three focus conditions in two datasets.





4. DISCUSSION

Phrasing, f0, and duration data show that Korean does not project focus as in English. One difference comes from the direction of the prosodic head: the rightmost argument in an English VP and the leftmost argument in a Korean VP. Since Korean is a SOV language and English is a SVO language, this difference is predictable and can be easily accommodated in the focus theory. But a more complex problem comes from the prosodic difference between the languages. Korean and English differ in the prosodic representation *within* the VP. In English, it has been claimed that a focused VP-final argument projects its focus to the whole VP. This claim is based on the fact that focus on the VP-final argument can be an answer to VP-focus or narrow focus on the VP-final argument. That is, the prosodic representation of a VP with VP-focus is the same as that of a VP with narrow focus on the VP-final argument. In both cases, the focused word receives 'nuclear pitch accent' [1]. Pitch-accentedness of the preceding arguments matters less. In fact, the prosodic representation of VP-focus and narrow focus on the VP-final argument is the same as the default reading of the same sentence. Preliminary phonetic data show some difference in pitch peak among these sentences but the results are variable and weak.

In Korean, however, the prosodic representation between VP-focus and narrow focus is different. When a VP is focused, the VP often forms one IP and each word within the VP preserves at least the same phrasing as in the default reading, with more prominent phonetic realizations. That is, each word in the VP forms one prominent AP and sometimes an IP. For narrow focus on the VP-initial argument, the whole VP forms one AP or IP and all the following words are de-amplified, either by dephrasing or by substantially reducing the pitch range of each AP. Therefore, in terms of phrasing, the VP-focus phrasing is similar to the neutral focus phrasing, not narrow focus phrasing. One can say that focus phrasing preserves default phrasing but focus has higher metrical strength. Büring's focus theory [2] takes this approach, but it needs to explain the difference between narrow focus and VP focus.

In sum, focus projection principles proposed by Selkirk and other researchers to explain data in English and other Germanic languages do not apply similarly to languages whose prosodic system is not built on a stress-based pitch accent. To build a general focus theory, cross-linguistic data on production and perception need to be examined: how focus is realized and perceived depending on the type and the domain of focus.

5. REFERENCES

[1] Beckman, M., Pierrehumbert, J. 1986. Intonational Structure in Japanese and English. *Phonology Yearbook* 3, 15-70.

[2] Büring, D. 2003. Focus projection and default prominence, Proceedings from the Symposion *Informationsstruktur --- Kontrastivt.* Lund, Sweden.

[3] Chung, C., Kim, J., Sells, P. To appear. On the role of argument structure in focus projections. *Chicago Linguistics Society* 39.

[4] Frota, S. 2002. The prosody of focus: a case-study with cross-linguistic implications, In *Proceedings of Speech Prosody 2002*, 315-318.

[5] Gussenhoven, C. 1999. On the limits of focus projection in English. P. P. Bosch and R. van der Sandt, eds., *Focus and natural language processing*. 43–55. CUP.

[6] Jun, S.-A. 1993. *The Phonetics and Phonology of Korean Prosody*, Ph.D. dissertation. Ohio State University.

[7] Jun, S.-A. 2000. K-ToBI labeling conventions (version 3). *Speech Sciences* 7, 143-169.

[8] Jun, S.-A., Kim, H.-S., Lee, H.-J., Kim, J.-B. 2006. An experimental study on the effect of argument structure on VP focus", *Korean Linguistics* 13: 89-112.

[9] Jun, S.-A., Lee, H.-J. 1998. Phonetic and phonological markers of contrastive focus in Korean. *ICSLP*4,1295-98.

[10] Khan, S. 2006. Bengali intonational structure: Evidence for three levels of phrasing. Poster presented at the 4th joint meeting of the ASA and ASJ, Honolulu, HI.

[11] Kim, H.-S., Jun, S.-A., Lee H.-J., Kim J.-B. 2006. Argument Structure and Focus Projection in Korean, *Proceedings of Speech Prosody.* Dresden, Germany.

[12] Rochemont, M. 1986. *Focus in Generative Grammar*. John Benjamins Publishing.

[13] Schafer, A., Jun S.-A. 2002. Effects of Accentual Phrasing on Adjective Interpretation in Korean", in M. Nakayama (ed.), *East Asian Language Processing,* Stanford, CSLI. pp. 223-255.

[14] Selkirk, E. 1995. Sentence prosody: intonation, stress, and phrasing. In *The Handbook of Phonological Theory*, J. Goldsmith (ed.). Cambridge: Blackwell, 550-569.

[15] Selkirk, E. 2002. Contrastive FOCUS vs. presentational focus: Prosodic evidence from right node raising in English. *Speech Prosody*.

[16] Vallduvi, E.; Engdahl, E. 1996. The Linguistic realization of information packaging. *Linguistics* 34, 459-519.