Tonal Patterns in the IP-final AP in Chonnam Korean

Mira Oh

Chonnam National University (Korea)
mroh@jnu.ac.kr

This study investigates tonal realization of the IP-final AP in Chonnam Korean under variation in AP length, AP-initial consonant and question endings. The typical tonal patterns of an Accentual Phrase in Seoul Korean and Chonnam Korean are THLH and THL, respectively [1]. The IP-final AP contours are conditioned by the AP length and boundary tones in Jun's framework. In Seoul Korean, the second and the penultimate tones do not occur if APs are fewer than four syllables. The IP boundary tone overrides the accentual phrase-final tone in Korean prosody [1]. Jun's theory predicts that the rest of the AP tones are intact when the boundary tone replaces the AP-final tone. Then we would expect the following tonal patterns of the IP-final AP when the boundary tone is H% for Seoul and Chonnam Korean according to the IP-final AP length.

(1) Expected tonal realization (T=L or H depending on the AP-initial consonant)

IP-final AP length	Seoul Korean	Chonnam Korean
2 tone bearing units	TH→ T-H%	TH→ T-H%
3 tone bearing units	THH→ TH-H%, TLH→ TL-H%	THL→ TH-H%
4 tone bearing units	THLH→ THL-H%	THL→ TH-H%

Previous studies report that the IP-penultimate syllable shows a pitch valley before H% in both Seoul and Chonnam Korean. As for Seoul Korean, [2] simply stipulates a constraint prohibiting high pitch in the IP-penultimate syllable and [3] analyzes the F0 valley as an Intermediate Phrase boundary tone. [1] analyzes the F0 valley immediately before the IP boundary as the AP-penultimate L tone in Seoul Korean. Then, in Seoul Korean, the penultimate L can be realized in 3 and 4 syllable IP-final APs since it is part of the AP tones. However, the F0 valley in 2 syllable-APs beginning with a H tone before H% cannot be explained by this analysis in Seoul Korean. As for Chonnam Korean, [4] explains the IP-penultimate L as the shift of the AP-final L to the IP-penultimate mora. Then this account is inconsistent in that the IP-penultimate L tone is the AP-penultimate tone in Seoul Korean but the AP-final tone in Chonnam Korean.

This study investigates the following questions. First, does the IP-penultimate L occur in Chonnam Korean regardless of IP-final AP length? Second, given that the sentence-final boundary tones differ depending on the sentence-ending forms [5], does the rate of the IP-penultimate L vary according to the boundary tone? Third, are there any other factors which affect the tonal contours of the IP-final APs besides the AP length and boundary tones? By analyzing the production of statements and interrogatives, we argue for the effects of the initial consonant and length of a sentence-final IP, and the sentence-final ending forms on the prosody of Chonnam Korean. Based on the results, we propose a reanalysis of the AP tonal pattern in Chonnam Korean as THLL instead of THL.

Production experiment

3,600 sentences recorded from 17 young Chonnam Korean speakers (10 female and 7 male) and 8 old Chonnam Korean speakers (5 female and 3 male) (48 sentences x 3 repetitions x 25 speakers) were analyzed. The results for *yo*-ending interrogatives are summarized in Fig. 1.

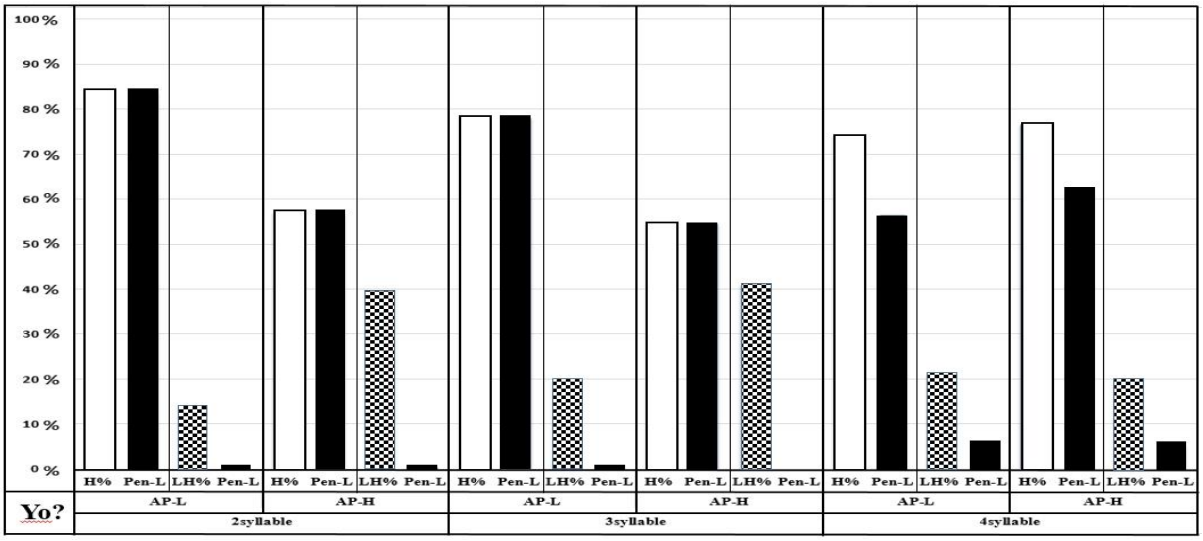

Fig.1 Rates of boundary tones and IP-penult L according to AP-initial tone and IP length

Three major factors affecting the IP-final AP contours for interrogatives (*–yo* ending and *–nya* ending) were found: i) *Lexical ending forms*: *–yo* ending was mostly realized with H% (68.6%), while *–nya* ending was realized as either LH% (42.3%) or H% (53.5%) in 2 and 3 syllable-IPs. Likewise, boundary tones were determined by lexical ending forms (p=6.48e-07); ii) AP-initial tone: the rate of H% is decreased but the rate of LH% is increased when the IP-final AP begins with a laryngeal consonant in 2 and 3 syllable-IPs (p=2e-16); iii) IP-penultimate L: The penultimate L-lowering is constantly present regardless of the number of syllables within IP and it occurs more before H% than before LH% (p=2e-16). It occurs less when the IP-final AP begins with a laryngeal consonant in 2 and 3 syllable-IPs (p=1.41e-11).

Discussion and conclusions

The IP-final AP contours vary due to tone crowding by which multiple target tones cannot all be realized. We show that the IP-penultimate L occurs regardless of the length of the IP-final APs in Chonnam Korean. To explain the IP-penultimate L, we propose that the tonal pattern of the AP is LHLL instead of LHL in Chonnam Korean. It was shown that the rate of IP-penultimate L is affected by the types of boundary tones and the AP-initial tone. It suggests that the tonal patterns of the IP-final AP cannot be explained by simple replacement of the AP-final tone by a boundary tone. The high rate of the IP-penultimate L-lowering in two-syllable IP in this study coincides with Kim's (2014) suggestion that the lack of tone bearing unit does not necessarily lead to tonal deletion in contrast to Jun's (1996) analysis.

References

[1] Jun, Sun-Ah. (1996). *The Phonetics and Phonology of Korean Prosody*, Garland, New York.
[2] Lee, Ho-Young. (1990). The Structure of Korean Prosody, PhD dissertation, University of London.
[3] Kim, Kyunghee. (2014). Tone, Pitch Accent and Intonation of Korean, PhD dissertation, Universität zu Köln.
[4] Jun, Sun-Ah. (1998). The accentual phrase in the Korean prosodic hierarchy, *Phonology* 15, 189-226.
[5] Yun, Jiwon. (2017). Sentence-final intonation in Korean, presented at *ICKL* 20.