

Intonational Characteristics of Korean Focus Realization by American Learners of Korean*

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ABSTRACT

The informative or important entities in utterances are focused and the focused items are usually accompanied by changes in phonetic manifestation. Phonetic realizations triggered by focus include changes of tonal contours as well as segmental strengthening. Focus in Korean is characterized by new phrase initiation, dephrasing, and initial tone contour with an enlarged pitch range in addition to segmentally lengthened initial segment. Focusing on the prosodic cues which play an important role in delivering the speakers' intention, this study aims to find out what intonational characteristics of Korean focus are realized by English learners of Korean. The English learners are divided into two groups according to their fluency in Korean, and the differences in focus realization between each group are discussed. Furthermore, the phonological and phonetic realizations of focus by English learners of Korean are compared to those by Korean native speakers. The results of this study yields two suggestions for Korean intonation education of L2 learners. First, the comparison between the two speaker groups can give better understanding in how and why the Korean intonation of English speakers is different from that of Koreans. Second, each phonological and phonetic characteristic of focus realization can weigh differently and its realization provides a criterion for evaluation of L2 Korean proficiency.

Keywords : intonaton, K-ToBI, focus, prosodic cue

1. Introduction

The contextual meaning of utterances are closely related to the information structure. Thus, it is very important to understand the information structure of sentences in order to promote the mutual understandings of the contextual meanings in verbal communicational situation. In many languages, including Korean, the information structure is conveyed

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primarily by the prosodic cues. In other words, the informative or important entities in utterances are focused and the focused items are usually accompanied by changes in intonational characteristics. This study aims to examine such intonational characteristics of marking focus of Korean language produced by English learners of Korean based on the K-ToBI(Korean Tones and Break Indices) labeling system(Jun, 1993). The phonological and phonetic characteristics of focus by English learners of Korean are compared to those by native Korean speakers.

2. Experiment

The aim of this experiment is to examine American speakers' competence of understanding focus structure of Korean and producing the sentences with proper prosody. The experimental sentences are designed to have same surface structure. Each material set is given with various focal contexts. That is, one set of material sentences are identical, but the only difference is the focus position in the sentences. The different focus positions are led by wh-questions who, what, when, where, why, or how. In this case, the prosodic differences could be the primary cues to convey the meaning differences in the sentences with the same word order. The experimental material consists of 14 sets of experimental sentences. A sample material set which has same surface structure given with 4 different focus contexts is given in Table 1. In addition to the 4 different focus context, one neutral sentence is also provided. Focused sentences will be compared with neutral ones.

Table 1: Data set for experiment: Focused part is indicated in bold-face.

<focal sentences>

nuga goyaQiege gwazarIR mEgyEyo?	누가 고양이에게 과자를 먹어요?
minaga goyaQiege gwazarIR mEgyEyo	미나가 고양이에게 과자를 먹어요.
minaga muEsege gwazarIR mEgyEyo?	미나가 무엇에게 과자를 먹어요?
minaga goyaQiege gwazarIR mEgyEyo	미나가 고양이에게 과자를 먹어요.
minaga goyaQiege mwER mEgyEyo?	미나가 고양이에게 뭘 먹어요?
minaga goyaQiege gwazarIR mEgyEyo	미나가 고양이에게 과자 를 먹어요.
minaga goyaQiege gwazarIR PANnayo?	미나가 고양이에게 과자를 뺏나요?
minaga goyaQiege gwazarIR mEgyEyo	미나가 고양이에게 과자를 먹어요.

<neutral sentence>

minaga goyaQiege gwazarIR mEgyEyo 미나가 고양이에게 파자를 먹여요

The subject pool consists of 8 English learners of Korean and 5 native Korean speakers. Native Korean speakers' utterances were recorded to determine the standard characteristics of Korean focus realization with which the American subjects' utterances could be compared. Korean speakers are university and graduate students who were born in Seoul and use the Seoul dialect. All of the American learners are studying Korean language at 'Y Korean Language Institute'. The American learners are divided into two groups (advanced and intermediate level) according to their fluency in Korean. The advanced speakers are in the upper level classes of the institute and the intermediate level speakers are in the intermediate classes of the institute. The beginner groups are excluded because they hardly understand the contextual meaning of the experimental material sentences. The differences of focus realization between advanced and intermediate groups are also observed.

All the utterances were recorded using DAT (Digital Audio Tape recorder) and Sony ECM-MS 907 microphone in a quiet room. The speakers were asked to read all the material before recording. They were also asked to speak the sentences as they would in a natural situation. They read both the focused sentences and the neutral sentences. In total, 900 Koreans' utterances (12 sentences × 5 contexts × 3 repetitions × 5 speakers) and 1440 Americans' utterances (12 sentences × 5 contexts × 3 repetitions × 8 speakers) were obtained. All of the utterances are transferred into sound files with Pitchworks and analyzed by the ToBI transcription system based on intonational phonology.

3. Results

In this experiment, several differences of intonational patterns between Korean and American speakers have been found. In Korean language, the focused word and its subsequent word are often dephrased, and the AP (Accentual Phrase) boundary between the two words disappears. Although the dephrasing phenomenon does not always appear, it has been regarded as a main characteristic of focus realization in Korean language (Jun & Lee 1998). This experiment also shows that Korean speakers dephrase the post-focused word in 56% of all utterances. (When the last word of the sentence bears a focus, dephrasing phenomenon cannot appear inherently, because the focused word doesn't have any following word. Thus, the focus on the last word are excluded from this result) Koreans tend to dephrase post-focus words much more often than Americans as

shown in Figure 1.

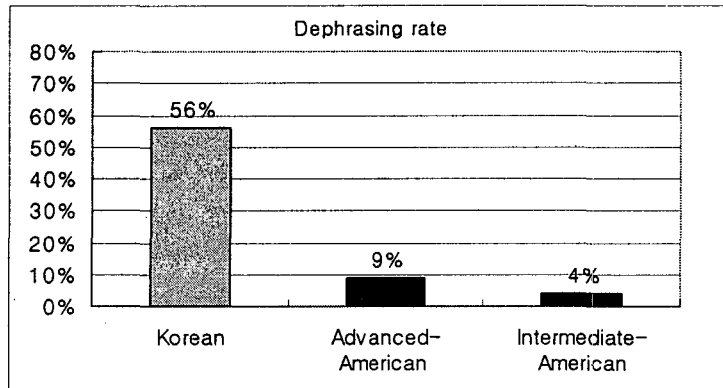


Figure 1. Dephrasing rate of Korean speakers and American learners

Figure 1 compares the dephrasing rate of Korean speakers with that of Americans. Korean speakers' dephrasing rate in post-focus words is 56% while advanced and intermediate American speakers dephrase with the percentage of 9% and 4%, respectively.

Additionally, Korean speakers learners more frequently dephrase the focused words and the following ones when the focus lies on the third word(from the left) rather than on the first or second word of the given sentence. Considering that most of the first words in our material sentences are subjects, this results means that the subjects of sentences tend to not be dephrased. Also, when the final part of a sentence has focuses, it is likely to be dephrased. However, In the utterances of American learners, dephrasing is rarely observed even on the third word position.

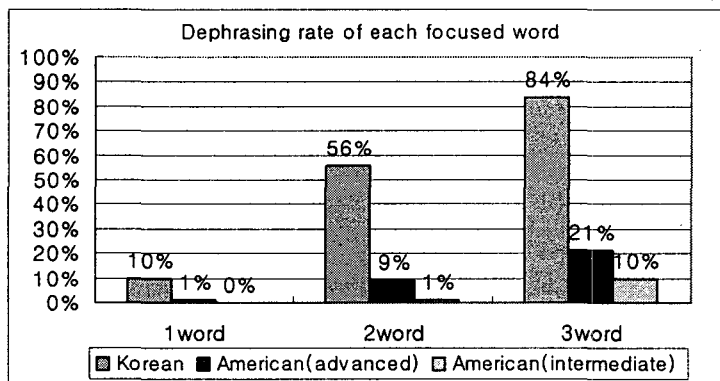


Figure 2. Dephrasing rate of each focused word

Figure 2 presents the dephrasing rate of Korean and American speakers when each word of a sentence is focused in turn. Koreans' dephrasing rate is 10%, 56%, 84% when the first, second, and third word is focused, respectively. In contrast, Americans performed dephrasing in each case with the percentage of 1%, 9%, 21%(advanced) and 0%, 1%, 10%(intermediate). Compared with Koreans' high dephrasing rate on the second and third, American learners show extremely low tendency of dephrasing.

Characteristically, Koreans dephrase the post-focus word more frequently in three specific phrases; a) pronoun adjective+noun, b) object+verb, c) adverb+verb. This means that when the pronoun adjective, object, or adverb have focus, the following noun or verb is often dephrased. Fig. 3 below shows that the dephrasing rate of each phrase.

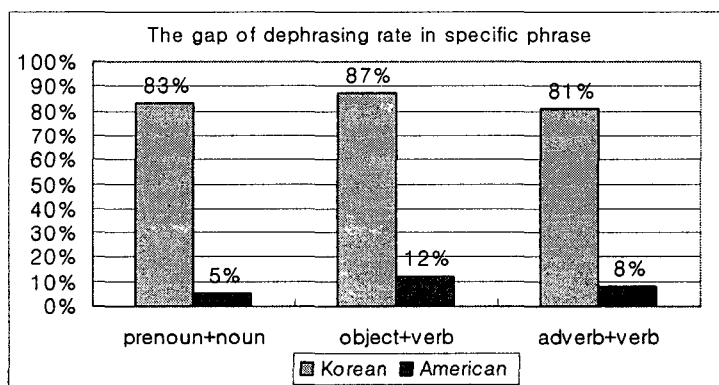


Figure 3. The dephrasing rate in specific phrases

In our experiment, 83% of [pronoun adjective+noun] clusters, 87% of [object+verb] clusters and 81% of [adverb+verb] clusters are dephrased in Korean speakers' utterances. However, even in such specific phrases, dephrasing is rarely observed in Americans' utterances; their dephrasing percentage in each case is a) 5%, b) 12% and c) 8%.

The pitch contours in Fig. 4 are from the real utterances of Korean speakers and American learners analyzed and labelled by ToBI transcription. Figure 4 is a Korean speaker's pitch contour of dephrasing in the sentence 'yEQsuga arImdaun gIrimIR zoahAyo.'

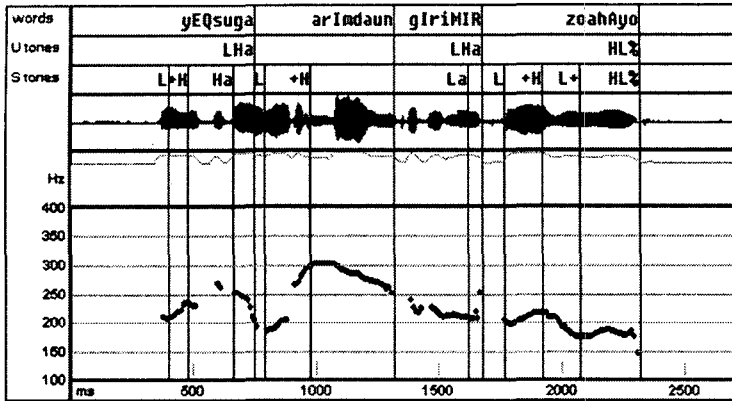


Figure 4. Pitch contour of a Korean speaker

In Figure 4, the word 'arIMdaun' is focused and the dephrasing phenomenon is observed on the word and its followers. As seen above, the AP boundary between the focus and post-focus words disappears.

The pitch contour in Figure 5 is from an American learner's utterance of the same sentence.

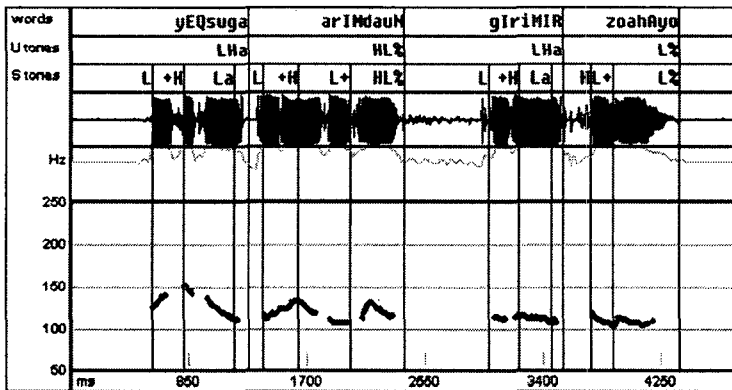


Figure 5. Pitch contour of an American speaker

Unlike the Korean speaker's utterance in Figure 4, the IP boundary is observed after the focus 'arIMdaun.' As shown in this Figure 5, Americans seldom dephrase the words following the focused word, and instead they put a pause between the focus and the following words. Even when they do not pause after a focus, the AP boundary is found in many sentences, and this phenomenon is observed quite similarly in neutral sentences.

In addition, some of the pitch contours of American's utterances resemble the 'deaccentuation' phenomena in English. Deaccentuation, which is one of the most important

characteristics of English focused sentences, means the phenomenon that the pitch accent on a particular element disappears and loses the property of intonational prominence, and thus undergoes significant F0 drop. In 49% of the Americans' utterances, transfer from their mother tongue (deaccentuation) is found. In the Koreans' utterances in Figure 4, LHLH% tone is clearly found after the dephrased AP. That is, though the focused word and its following word are dephrased and constitute the same AP, the subsequent AP clearly shows AP tonal patterns.

Figure 6 shows the pitch contour of the sentence 'ayEQiga uuRhaN norArIR dIREyo' from an American's utterance.

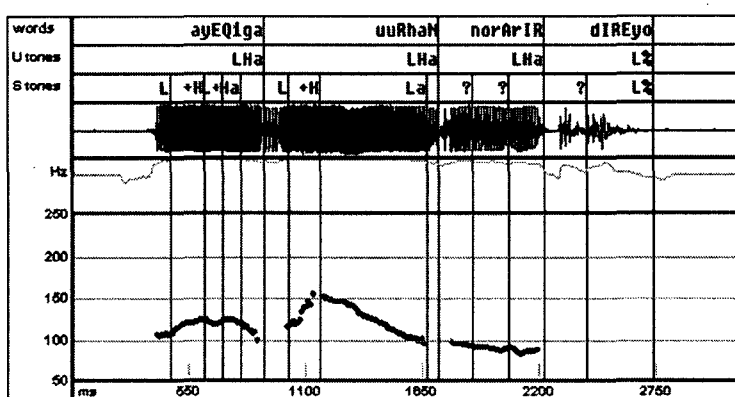


Figure 6. Pitch contour of an American learner

This pitch contour looks similar to the 'deaccentuation' phenomenon in English. All the syllables after the focus 'uuRhaN' undergo significant F0 drop and lose all the tones. We do not observe any tone in those syllables marked '?' which cannot be transcribed in the K-ToBI system. Considering that there is a significant F0 drop or that the tones in post-focus words are removed, we find this phenomenon deaccentuation rather than dephrasing.

The second major characteristic found in American learners' utterances is that they do not realize L tones on the first syllable of the focused AP. Instead, they put AP-initial H tones. Koreans never put H tone on the first syllable of AP even though the AP contains focus. Koreans put H tone on the first syllable only when the onset of the AP initial has aspirated and tense segment. That is, AP initial H tone is not related to the focus realization and it is only concerned with the features of segment. In Korean it is common to put H tone on the second syllable not on the first syllable of AP as a focus marker. For example, in a three-syllable word like 'minaga', LLH is the most frequent tonal shape of Korean in neutral situation. When the words are focused, tonal shape changes into

LHH. However, Americans realize H tone not on the second syllable but on the first syllable of the focus. In a three-syllable word such as 'minaga', **LLH** is the most frequent tonal shape produced by American learners in neutral situation. When the word is focused, tonal shape changes into **HHL**, unlike Koreans' tonal patterns.

Figure 7 compares the percentage of AP initial H tone of Korean speakers and American learners in both neutral and focused condition.

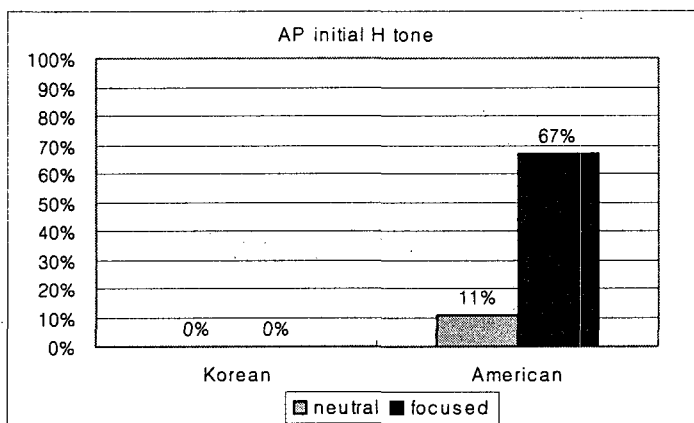


Figure 7. Percentage of AP initial H tone in neutral and focused sentences

In our experiment, none of the material sentences contain aspirated or tense segment and so all the AP initial syllables are produced with L tones both in the neutral condition and the focused context. As shown in Figure 7, American learners realize AP initial syllable as H tone with the percentage of 11% of the neutral sentences and 67% of the focused conditions. However, Koreans do not put H tone in either condition. It means that Americans often produce AP-initial H tone as a focus marker.

Figures 8 and 9 are the pitch contour of the sentence uttered by a Korean speaker and an American learner.

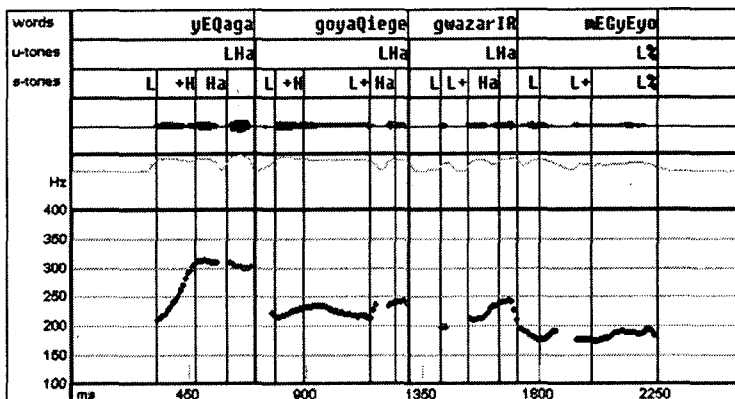


Figure 8. Pitch contour of a Korean speaker

In the sentence of Figure 8, the subject 'yEQaga' is focused. In producing this three-syllable word, Korean speakers put H tone on the second syllable of the focused word to mark a focus. However, Americans show a different intonational pattern as presented in Figure 9.

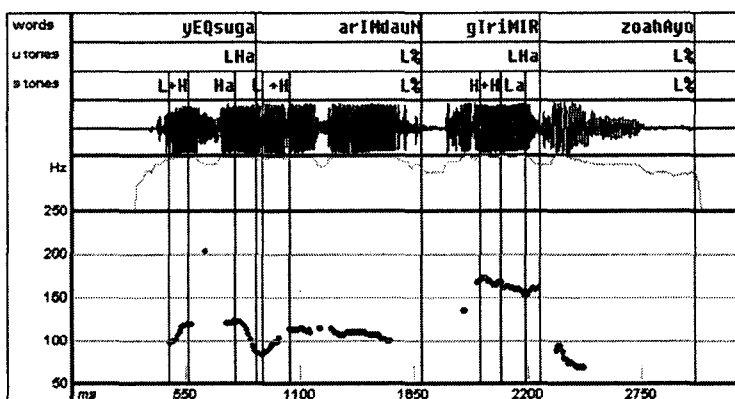


Figure 9. Pitch contour of an American learner

This pitch contour presents American's utterance of the sentence 'yEQsuga arImdaun giRiMIR zoahAyo' with focus on 'giRiMIR'. As observed above, the first syllable 'gI' is implemented as H tone, and it contrasts with L tone of Koreans in Figure 8.

The third major characteristic of American learners is that they do not use boundary tones in order to present a focused item. Koreans sometimes initiate a new IP more often before a focused item than a neutral word. Just before producing the focused word, Koreans sometimes make a slight pause (IP boundaries) in order to give prominence to the next word by starting a new IP. This phenomenon is also found in Americans'

utterances, and they also initiate a new IP before a focus. However, IP initiation does not seem to be related with focus marking in their case because frequent IP initiations are also found in neutral sentences as well. It can be inferred that American's frequent IP initiation is due to their non-native proficiency in Korean speech. It means that, for Americans, boundary tones are not used as a focus marker.

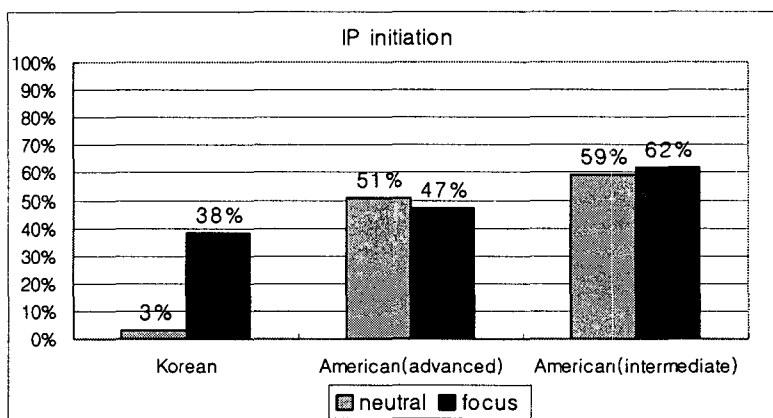


Figure 10. Percentage of IP initiation in neutral and focused utterances

Figure 10 shows the percentage of IP initiation by Korean learners and American speakers both in neutral and focused utterances. Koreans use boundary tones before the focus with the percentage of 38%, but only 3% before a neutral word. On the other hand, advanced American learners initiate a new IP before a neutral word and a focus with the percentage of 51% and 47%, respectively. Intermediate learners show a similar tendency; they use boundary tones before a neutral word in 62% of the utterances, and before a focused word in 59% of the utterances.

Figure 11 presents the pitch contour of a Korean speaker's utterance of 'nariga giMciCigArIR madiDge mEgEDEyo.'

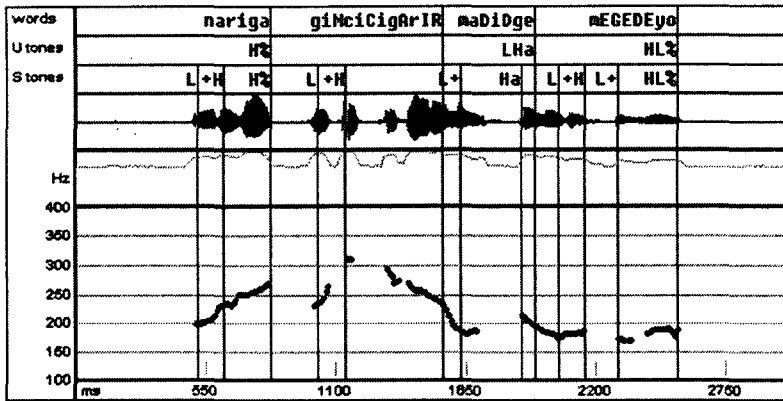


Figure 11. Pitch contour of a Korean speaker showing IP initiation

In the sentence of Figure 11, 'giMciCigArIR' is the focused word. The speaker puts a slight pause(IP boundary) between the subject 'nariga' and the focus 'giMciCigArIR' in order to give prominence to the focus by starting a new IP. Similarly, in the pitch contour of Figure 12 which shows an American learner's utterance, the IP boundary is observed before the focused item.

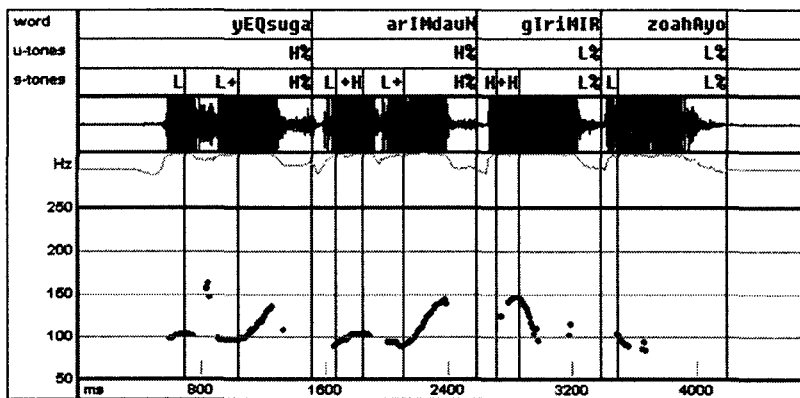


Figure 12. Pitch contour of an American speaker showing IP initiation before a focus

The pitch contour of Figure 12 presents an American learner's utterance with focus on the word 'giRimIR'. This American speaker initiates a new IP before the focused word 'giRimIR'. However, the IP initiation does not seem to be related to focus marking.

The pitch contour in Figure 13 shows IP initiation after the word 'giRimIR' even though it is spoken in the neutral context and does not carry a focus.

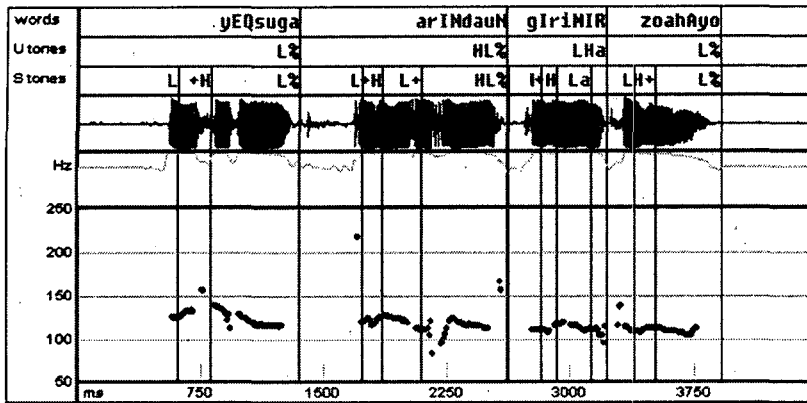


Figure 13. Pitch contour of an American speaker showing IP initiation before a neutral word

In Figure 13, many boundary tones are found although this sentence is uttered in a neutral context. Compared with the similar pattern observed in focus context, it can be inferred that Americans' frequent IP initiation is due to their non-native proficiency in Korean. It means that, for Americans, boundary tones are not used as a focus marker.

To sum up, there are three main differences between Korean speakers and American learners in marking focus: Firstly, Americans do not dephrase the post-focus word as frequently as Koreans do. Secondly, Americans often produce AP-initial H tone as a focus marker which is never produced by Koreans. Thirdly, Americans frequently initiate new IP, but their IP initiation is not related to focus marking.

Of Interest is that the results of this comparative study between Koreans and American learners are similar to the results found in the study between Koreans and Japanese learners (Kim, Lee & Kong 2002). In their research, the same three characteristics are observed; while Korean use IP initiation as a focus marker, Japanese do not show such a tendency though they often initiate new IPs before a focus; while Koreans dephrase a post-focus sequence to mark focus, Japanese are not able to use dephrasing; while Koreans never realize AP initial H tone, Japanese tend to use H tone at AP initial syllables. Yet, the fact that American learners' pitch contour, unlike Japanese', show a deaccentuation-like shape deserves attention. Deaccentuation is one remarkable characteristic of English, and this phenomenon is thought to reflect the speakers' L1 transfer. However, considering the overall results, it is assumed that there exists a universal factor that affects the focus realization of Korean by non-native speakers.

4. Conclusion

This study shows that intonation functions as a primary cue to manifest different focus structures in different context. English speakers (especially the intermediate levels) tend not to differentiate between the focused and neutral sentences as Korean speakers do. Inappropriate intonation may cause miscommunication. In order to enhance communicative competence, teaching proper intonation which is suitable for the contextual situation is needed.

The characteristics of Korean focus realization can be summarized as three prosodic cues. First, the focused word initiates a new prosodic phrase, either an Accentual Phrase or an Intonation Phrase. Second, post-focus words are dephrased. Third, focused words manifest LH initial tonal patterns although they are realized with bigger pitch range than neutral words.

The previous comparative studies between Koreans and L2 learners suggest that L2 Korean learners observe the first prosodic cue mentioned above, new phrase initiation for the focused phrases. However, both Japanese and American learners are not able to realize AP-initial L in a focused phrase. They produce the AP-initial tone as H in the focused phrase. As for the second characteristic of Korean focus, Japanese and English speakers exhibit some variability: English speakers rather illustrate deaccentuation than dephrasing. From these findings we can draw a conclusion that phrase initiation is an easily learnable prosodic cue for Korean focus, while dephrasing and phrase-initial tone manifestation are hardly achieved.

This study indicates the necessity for more specific and concrete intonation education system for foreigners who study Korean language. Among the Americans' utterances, we have observed some negative transfer from their mother tongue. In order to avoid such negative transfer, scientific and systematic understanding of the differences of the intonation system between the target and native languages should be made. And then, phonological and phonetic characteristics of tonal implementation of Korean focus which is different from that of English focus should be emphasized for American learners. It should be noticed that sentences with the same surface structure can be produced with various tonal patterns according to their focus structure and contextual situation. Thus this study suggests that intonation should be taught in context rather than in an isolated sentence.

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<appendix>

some examples of experimental sentences

yEQaga madaQesE zAmiiDge noraDSEyo.

영아가 마당에서 재미있게 놀았어요

nuga madaQesE zAmiiDge noraDSEyo? (누가)

yEQaga EdisE zAmiiDge noraDSEyo? (어디서)

yEQaga madaQesE ETEDke noraDSEyo? (어떻게)

yEQaga madaQesE zAmiiDge gogyEQhADSEyo? (구경했어요?)

ENniga doQsAQege gugErIR garIcyEyo.

언니가 동생에게 국어를 가르쳐요

nuga doQsAQege gugErIR garIcyEyo? (누가)

ENniga nuguage gugErIR garIcyEyo? (누구에게)

ENniga doQsAQege muEsIR garIcyEyo? (무엇을)

ENniga doQsAQege gugErIR mufEbayo? (물어봐요?)

yEQhinIN borasAG baNbazirIR zoahAyo.

영희는 보라색 반바지를 좋아해요

nuga borasAG baNbazirIR zoahAyo? (누가)

yEQhinIN musINsAG baNbazirIR zoahAyo? (무슨색)

yEQhinIN borasAG musIN oDsIR(muER) zoahAyo? (무얼)

yEQhinIN borasAG baNbazirIR sirEhAyo? (싫어해요?)