Biased Questions in South Kyeongsang Korean*

A Preliminary Study

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The current study explores the correlation between prosodic patterns and the speaker’s bias in negative questions in South Kyeongsang Korean. I argue that the epistemic bias of a negative question is signaled by using distinct prosodic phrasing in this language. Specifically, the Single Phrasing pattern signals neutral or negative bias, whereas the Double Phrasing pattern signals positive bias. The role of distinct prosodic phrasing patterns in listeners’ comprehension and perceived naturalness were tested through two tasks. A comprehension task was conducted in order to test whether the prosodic phrasing pattern facilitates participants’ interpretation of the intended epistemic bias. The results reveal that prosodic manipulations indeed contribute to the interpretation of bias carried by a negative question, and guide listeners to answer the question accordingly. Participants were also asked to rate the naturalness of each phrasing pattern. The purpose of a naturalness rating task is to test whether distinct phrasing patterns influence listeners’ naturalness perception. The results of a naturalness rating test demonstrate that South Kyeongsang Korean speakers are sensitive to the prosodic pattern of negative questions, and that listeners perceive the matching pairs between epistemic bias and prosody to be more natural than conflicting pairs, corroborating the correlation between prosodic phrasing and epistemic bias. While the results of the comprehension task and the naturalness rating task support the claim that speakers’ bias in negative questions is associated with different prosodic phrasing patterns, the correlation is not as strong as that found in Tokyo Japanese. I argue that the weaker correlation can be accounted for by the availability of another bias observed in the positive bias condition of the tasks using an adjective predicate, and a change-in-progress involving the Double Phrasing pattern in South Kyoengsang Korean. Moreover, the difference between Tokyo Japanese and South Kyeongsang Korean in terms of prosodic phrasing and speakers’ epistemic bias in negative questions is attributed to the exceptional prosodic marking of negation in South Kyeongsang Korean.

Keywords: epistemic bias, negative question, comprehension test, naturalness rating test, South Kyeongsang Korean

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1. INTRODUCTION

1.1. Speaker’s bias in negative polar interrogatives

It is well established that English negative polar interrogatives can convey the speaker’s bias toward either a positive or negative answer (Ladd 1981, Büring and Gunlogson 2000, Huddleston and Pullum 2002, Romero and Han 2004, Asher and Reese 2007, Sudo 2013, among others). The examples in (1), taken from Sudo (2013), show negative questions with an epistemic bias.

(1) a. Context: Mary is left-handed. We are wondering who else is. I think I have seen John use a pencil with his left hand.
   Q: Isn’t John left-handed too?

b. Context: Bill is right-handed and Mary is left-handed. We’re wondering who else is a lefty. John is using a pen with his right hand.
   Q: Isn’t John left-handed either?

The question in (1a) carries positive bias as its implication is compatible with the proposition “John is left-handed”, whereas (1b) carries negative bias as the questioner wants confirmation for the inference that “John is NOT left-handed”. On the other hand, the negative question in (2) below, an example from Romero and Han (2004), is neutral with respect to bias.

(2) Context: A and B are making a list of teetotalers for a party.
   A: Jane and Mary do not drink.
   Q: OK. What about John? Does he not drink (either)?

A similar observation on biased questions is reported in Tokyo Japanese (Sudo 2013, Hwang and Ito 2014, Ito and Oshima 2016). In particular, Hwang and Ito (2014) argue that a speaker’s bias in a negative question is correlated with an intonation pattern in Tokyo Japanese.
Hwang and Ito (2014) observe that three different prosodic patterns are observed in negative questions with adjectival predicates. Representative contours of the 3 patterns are illustrated in Figure 1. The negative question is nagáku-nái? “isn’t it long?”, where –nái is the negative morpheme. A lexical accent is marked by “´” and the F0 fall associated with an accent is indicated by arrows. In the top contour, both the adjective (nagái) and the negative morpheme exhibit F0 falls by retaining their lexical accents (Accented-Accented, henceforth AA pattern). In the bottom-left contour, on the other hand, only the adjective retains its accent, and the negative morpheme is deaccented (Accented-Deaccented, henceforth AD pattern). The contour in the bottom-right exhibits no F0 fall but a gradual rising pitch, indicating both the adjective and the negative morpheme are deaccented (Deaccented-Deaccented, henceforth DD pattern). It should be noted that the DD pattern is often used by younger speakers.

Hwang and Ito (2014), and Ito and Oshima (2016) claim that the AA pattern is the phonetic implementation of a negative question without epistemic bias or with negative bias, whereas the AD and DD patterns are associated with positive bias. By conducting

1) There is a study that claims a preference between the AD and the DD pattern is determined by evidentiality based on the results of a goodness rating test. However, the results were not replicated in Hwang and Ito (2014). This issue will not be further discussed as it is beyond the scope of this study. See Hara and Kawahara (2012), and Hwang and Ito (2014) for details.
a comprehension test and a naturalness rating test, Hwang and Ito (2014) provide experimental data to support their claim.

In Hwang and Ito (2014), a total of thirty native speakers of Tokyo Japanese ranged 18–35 years old took part in a comprehension test and in a naturalness rating test. Participants were instructed to read the situations given on a computer screen, and to choose the most appropriate answer for the question they heard in considering the situation. As the percentage of correct responses is extremely high (average 97.5% across situations and participants), the results of the comprehension test reveal that the distinct prosodic patterns play an important role in the comprehension of the epistemic bias accompanied by a negative question, suggesting a strong correlation between bias and prosodic patterning. In the naturalness rating test, participants were asked to rate the naturalness of the prosodic pattern of the question they heard, in the situation given. The results of the naturalness test corroborate the correlation by showing that Japanese speakers are sensitive to the prosodic patterns of negative questions, and the mismatched prosodic patterns yielded considerably lower ratings (average 2.3/5) compared to the matched patterns (average 4.5/5) in terms of the naturalness judgment.

1.3. Prosodic patterns of negative questions in South Kyeongsang Korean

Korean has two negation constructions: “long form negation” and “short form negation” as in (3). The first example, (3a), is an affirmative sentence, while (3b) and (3c) are the “short” and “long” negative forms of (3a), respectively. Although the negative morpheme an immediately precedes the predicate forming the “short form” in (3a), the negative marker ani is preceded by the particle -ci and followed by the verb ha- ‘do’ in (3b).

(3) a. mukʌp-ta
   heavy-Decl
   ‘(It is) heavy.’

b. an mukʌp-ta
   Neg heavy-Decl
   ‘(It is) not heavy.’

c. mukʌp-ci ani ha-ta
   heavy-ci Neg do-Decl
   ‘(It is) not heavy.’

As it is well acknowledged that the “short form negation” is used pervasively in Kyeongsang Korean, only negative questions involving the “short form” are further discussed in this study. The interrogative counterpart of (3b) is given in (4).

(4) an mukʌp-na
    Neg heavy-Q
    ‘(Is it) not heavy?’

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2) The following abbreviations are used for the data: Q = interrogative, V = verb, Adj = adjective, Neg = negative, Decl = declarative, Proc = progressive, Loc = locative, Gen = genitive, Imp = imperative.
Considering the prosodic pattern of a negative question, I observe that the scope of the negation is marked by a high plateau. Specifically, the negative morpheme *an* forms a single prosodic phrase by making the pitch of the predicate stem high flat. It is worth noting that the phonetic implementation of a negative question involving *an* is rather exceptional in that lexically specified pitch accents are completely lost in the domain of negation. The pitch contour of a negative question in (4) is presented in Figure 2. It exhibits a rise during the negative morpheme followed by a high flat interval with a falling boundary tone. In this example, the entire predicate stem is realized as a high flat pitch pattern by deleting its lexical LH accent. Due to a peak delay, one might think there is a rise before the high plateau during the predicate. However, it apparently lacks a low target if we compare this contour with another prosodic pattern of a negative question.

Besides the high plateau, one more prosodic implementation of a negative question involving *an* is observed. As shown in Figure 3, both the negative morpheme and the predicate stem retain their LH accents.

This pattern is referred to as Double Phrasing, as opposed to Single Phrasing, which refers to the high plateau pattern. Intuitively, Double Phrasing seems to be correlated with positive bias just as the AD or DD pattern in Japanese. In fact, Gim et al. (2000) report that this pattern is used when a negative question conveys a positive description. Yet, no quantitative data is provided to support their observation. Thus, an experimental approach is needed to explore the correlation between the epistemic bias and the two prosodic patterns of negative questions in South Kyeongsang Korean. In particular, I aimed to test

3) Generally an adverb does not result in any loss of the lexical accent of a following predicate. For instance, adding *te* ‘more’ to *mukṣp-na* ‘heavy?’ does not affect the LH accent of the adjective.
the perceptual and functional aspects of the correlation through a comprehension test and a naturalness rating test.

2. METHODS

2.1. Material

Two negative questions involving an adjective (an mukíp-na? ‘isn’t it heavy?’) and a verb (an mantí-na? ‘doesn’t he make it?’) were tested. As the predicates bear an LH accent, the difference between the two prosodic patterns is more noticeable. In order to provide a contextual prompt for the speaker’s bias, the target phrase is embedded in three different bias conditions: neutral, negative and positive bias.

Concerning the prosodic pattern, both neutral and negative bias conditions are expected to yield the Single Phrasing pattern. On the other hand, the positive bias condition may be realized in the Double Phrasing pattern. The contexts provided to the subjects for each bias condition are given below.

(5) Adjective set (an mukíp-na?)

a. Neutral condition

(Context) One day, Minsu and Yeonghi were talking at the gym. Minsu has been working out at the gym for quite a long time but Yeonghi was there that day for the first time: (The dumbbells were not that heavy but she did not know that.)

M: ni-to aljʌŋ til-ko o-nna.
You-too dumbbell carry-and come-Imp
‘Bring dumbbells.’

Y: ʌ, kinte kikʌ an mukʌp-na?
yes but that Neg heavy-Q
‘OK, but aren’t they heavy?’

M: ʌ, pjʌlo an mukʌu-nte, we?
yes, particularly Neg heavy-but why
‘No, these are not heavy, why?’

Y: ani, pjʌlo an mukʌu-mjʌn na-to ki kʰiki-lo sicakhal-lako.
no particularly Neg heavy-if I-too that size-by start-intend
‘I just thought I should start with dumbbells with that size if they are not that heavy.’

4) The sentence in parentheses at the end of the context for the Neutral condition was given to participants in the comprehension test, so that they could choose an answer for the negative question without epistemic bias.
b. Negative bias condition
(Context) One day, Minsu was pitching a tent. The wind was blowing strongly, so Minsu thought it might be better to weigh the tent down with a heavy rock. Therefore, Minsu asked Yoenghi:

M: caki ca mukʌn tol com kaci-ko olle?
over.there that heavy rock a.little get-and come?
‘Can you get me a heavy rock from over there?’

Y: å, caki com kʰin totil iss-tante kaci-ko ol-ke.
yeah, over.there a.little big stones there.be-I.found get-and come.will
‘I saw some pretty big stones over there. I’ll go get one.’

(camsi hu) jaki kac-ko was*-ta
awhile after here get-and came-Decl
‘(after for awhile) Here you go!’

M: kika-n com... com ta mukʌwajaxa twekess-nunte...
that-Top a.little a.little more heavy should.be-but
‘Hmm...Actually, I think this might not be heavy enough.’

Y: å, kika an mukʌp-na?
oh that Neg heavy-Q
‘It isn’t heavy (enough)?’

M: å, com ta mukʌwajaxa twekess-nunte...
yeah a.little more heavy should.be-but
‘Yeah, it seems like it’s not quite heavy enough...’

c. Positive bias condition
(Context) One morning, Minsu and Yeonghi were about to go out. Minsu let his child, a kindergarten student, carry a big bag. Minsu and Yeonghi heard their son moaning while carrying the bag:

Y: caka-nin e-ka tilkie-nun namu an mukʌp-na?
that-Top child-Nom carrying-Top too Neg heavy-Q
‘Isn’t that bag (a little) heavy for him?’

M: å, com mukʌwa poi-ne.
yeah a.little heavy look-Decl
‘Yeah, that’s too heavy for him.’
(6) Verb set (an manti-na?)

a. Neutral condition

(Context) Yeonghi and Minsu are talking about a movie director they like. They both love movies, but Yoenghi doesn’t know whether the director has made a movie recently. Therefore she asked Minsu: (The director has not done anything lately but she did not know that.)

Y: jocime ne-ka jəŋhwa-lul tʰon an pwa-sə moli-nunte recently I-Nom movie-Acc totally Neg watch-because not.know-but
‘I haven’t watched many movies lately, but’

jose ki kamtok jəŋhwa an manti-na?
recently that director movie Neg make-Q
‘as for the movie director, doesn’t he make movies anymore?’

M: ʌ, jocime-n canhja hwalon an hanin kas katʰ-tala.
yes these.days-Top totally activity Neg do fact seem.like
‘Yeah, it seems like he isn’t making movies these days.’

b. Negative bias condition

(Context) Minsu and Yeonghi are talking about a movie director they like. They both love movies, but Yoenghi doesn’t know whether the director has made a movie recently. Therefore, she asked Minsu:

Y: jocime ne-ka jəŋhwa-lul cal mos pwaʰ*-nunte recently I-Nom movie-Acc often cannot watch-but

ki kamtok cʰwesincak com allacula.
that director recet.movie just inform.me
‘I haven’t watched many movies lately. What has he done recently?’

M: 10-njən can ke macimak i-n-te
10 years before thing last be-but
‘Well, his last movie was made 10 years ago …’

Y: ki kamtok jose jəŋhwa an manti-na?
that director recently movie Neg make-Q
‘So he hasn’t done anything recently?’

M: ʌ, jocime-n canhja hwalon an hanin kas katʰ-tala.
yes these.days-Top totally activity Neg do fact seem.like
‘Yeah, it seems like he isn’t making movies these days.’
c. Positive bias condition

(Context) One day, Minsu and Yeonghi were talking about a movie director they like. They heard that the director was making a new movie:

Y: kɨɨkamtok pals* 80-i namessulkante sosik tiless-ce?
    that director already 80-Nom over-guess news heard-right?
    cikim-to se jənəwə an manti-na?
    now-even new movie Neg make-Q

‘I think he’s already over 80, but you heard the news, huh? **He’s making a new movie, right?** (lit. Isn’t he making a new movie?)’

M: ə, kile, se jənəwə wancən kitetwen-ta
    yes right new movie completely look.forward-Decl
    ‘Right, I’m so much looking forward to it!’

2.2. Recording

One female and one male speaker of South Kyeongsang Korean participated in the recording. Both speakers were born and raised in the South Kyeongsang area. They were in their mid-thirties at the time of the recording. The recording was made using a Marantz portable recorder (PMD 661) and a microphone SHURE SM10A-CN in a quiet office. They were instructed to read the situations written in Korean orthography carefully, and to exchange the given conversation at a comfortable speed. As shown in (5) and (6), the female speaker uttered the target question, and the male speaker answered the question. A total of two repetitions were elicited.

2.3. Stimuli

A comprehension test and a naturalness rating test were conducted using the subset of the utterances obtained in the recording session. In selecting stimuli for the comprehension test, priority was given to utterances naturally articulated at a comfortable rate of speech and intensity. For the six stimuli created (3 bias conditions for the adjective and the verb set), the male speaker’s answer for the target question was eliminated, as the task in the comprehension test was to identify the most appropriate answer for each question.

For a naturalness rating test, a negative question was cross-spliced into the conversations of the three different bias conditions: Neutral, Negative, and Positive. As two possible prosodic patterns were observed, both phonetic realizations of a negative question were included, resulting in a total of twelve combinations (2 sets × 3 bias conditions × 2 prosodic patterns).

2.4. Participants and procedure

A total of fifteen native speakers of South Kyeongsang Korean took part in the tests. They
ranged from 23 to 59 years of age at the time of the tests (average: 30.5). They were all born and raised in the South Kyeongsang region. None of them had a history of hearing disorders.

Both tests were conducted using Praat 6.0.05 in a quiet office at Changwon National University. Participants were seated in front of a computer screen where the situation and response choices of each stimulus were presented. The stimuli were provided in a random order.

Specifically, for the comprehension test, participants were instructed to read the situations given on a computer screen carefully. Then, they were informed that they would hear a short conversation which always ends with a female speaker’s question. The task was to choose the most appropriate answer for the female speaker’s question in the situation given. They were asked to click on one of four boxes containing the four choices below.

(7) a. ʌ, mukʌp-ta  
    ‘Yes, it’s heavy.’  
  b. ʌ, an mukʌp-ta  
    ‘Yes, it isn’t heavy.’  
  c. ani, mukʌp-ta  
    ‘No, it’s heavy.’  
  d. ani, an mukʌp-ta  
    ‘No, it isn’t heavy.’

If a negative question “Isn’t it heavy?” is interpreted as carrying negative bias, then the answer in (7b) “Yes, it isn’t heavy” would be the most appropriate in Korean. On the other hand, the best answer for the same question bearing positive bias is “Yes, it is heavy” in (7a). In the Neutral condition, either “Yes, it isn’t heavy” or “No, it is heavy” may be chosen depending on the information given in the parentheses in (5) and (6). It should be noted that the answer in (7d) “No, it isn’t heavy” is not expected to be the best answer for any of the conditions in Korean.

Turning to the naturalness rating test, participants were told that they would hear the entire conversation including the male speaker’s answer this time. They were asked to rate the naturalness of the prosodic pattern of the female speaker’s question along a scale of 1 (highly unnatural)–5 (highly natural).

3. RESULTS

3.1. Comprehension of speaker’s epistemic bias

Table 1 shows the percentages of correct responses depending on the bias type carried by the stimuli, averaged for all participants. The percentages when the Single Phrasing pattern is given are remarkably high, suggesting the correlation between the prosodic pattern and Neutral/Negative bias conditions. It seems that the relatively low percentage in the Neutral condition of the V set, 80%, could be attributed to the fact that some participants failed to capture the cue written in parentheses in (5a) and (6a).

In stark contrast to these results participants showed quite poor accuracy in interpreting the positive bias when the Double Phrasing pattern was present. Although both the adjective and verb predicates exhibit accuracy above the chance level (25%), these results still cast doubt on a strong correlation between bias and prosody in negative questions.
Perceived naturalness

Figure 4 provides the average rating scores of both prosodic patterns in each bias condition. NT, NG, and PS represent Neutral, Negative, and Positive bias, respectively. Overall, perceived naturalness of prosody seems to be highly dependent on bias conditions. In the adjective predicate case, the Single Phrasing pattern (dark colored bars) is judged remarkably more natural than the Double Phrasing pattern (striped bars) in the Neutral and Negative bias condition.

On the other hand, the Double phrasing pattern in the positive bias condition is judged as slightly more natural than in the other bias conditions inside of the adjective predicate case. Still both prosodic patterns receive nearly equivalent scores in the positive condition. It is possible that there may have been some cases where the Single pattern was used even when positive bias is conveyed.

Turning to the verb predicate case, the Single Phrasing pattern in the neutral/negative conditions was judged as highly natural. In these conditions, appreciable differences are observed in perceived naturalness between the prosodic patterns, implying the Single pattern is correlated with the neutral/negative bias. In the positive bias condition, on the other hand, the Double Phrasing pattern was perceived as considerably more natural than the Single Phrasing pattern. Yet, the Double Phrasing pattern in the verb predicate condition yielded nearly equal ratings across the bias conditions, suggesting that this prosodic pattern itself might tend to be judged as unnatural regardless of the accompanying bias.

3.2. Perceived naturalness

Table 1. Percentages of correct responses depending on the epistemic bias and prosodic patterns

<table>
<thead>
<tr>
<th>Bias</th>
<th>Neutral</th>
<th>Negative</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prosody</td>
<td>Single</td>
<td>Double</td>
<td>Single</td>
</tr>
<tr>
<td>Adj</td>
<td>87% (13/15)</td>
<td>100% (15/15)</td>
<td>53% (8/15)</td>
</tr>
<tr>
<td>V</td>
<td>80% (12/15)</td>
<td>87% (13/15)</td>
<td>67% (10/15)</td>
</tr>
</tbody>
</table>

Figure 4. Mean naturalness ratings depending on the bias conditions: Adjective predicate (left) and Verb predicate (right)

4. DISCUSSION AND CONCLUSIONS

This study investigated the correlation between prosodic patterns and a speaker’s epistemic bias carried by negative questions in South Kyeongsang Korean. Empirical data were provided focusing on listeners’ comprehension of bias and perceived naturalness
of a prosodic pattern in the given bias condition. Specifically, a comprehension task was designed to test whether the distinct prosodic patterns are exploited by listeners to comprehend the epistemic bias and to respond appropriately to negative questions. While the results support the hypothesis, the relatively low percentages of correct responses involving the Double Phrasing patterns require further discussion. In the naturalness rating task, different combinations between a bias condition and a prosodic pattern were assessed for naturalness. The perceived naturalness data revealed that speakers of South Kyeongsang Korean are sensitive to the prosodic patterns accompanied by negative questions, and the “matched pairs” between bias and prosody were judged as more natural than mismatched pairs, corroborating the finding of the comprehension test. Nevertheless, the question of why the Double Phrasing pattern received overall fairly low scores still needs to be addressed.

There are two likely factors contributing to the poor performance involving the Double Phrasing pattern. The first factor, which I suggest is primarily responsible for these results, is a change-in-progress in this variety of Korean. That is, the Double Phrasing pattern is disappearing and the Single Phrasing pattern is spreading to replace it. In fact, after completing the two tasks, younger speakers commented that the Double Phrasing pattern does not sound natural to them. Further study will be necessary to explore this possibility.

Another factor is the availability of other types of bias—in this particular case, desiderative bias. That is, the speaker wants the negative answer to be true. Recall that the accuracy of responses in the positive bias condition with the adjective predicate was only 53%, and that the Double Phrasing pattern was not judged as more natural than the Single pattern in the same condition. Considering the situation, it is conceivable that the bias introduced by the context “they heard their son moaning while carrying the bag” was not associated with the positive epistemic bias that the bag is (too) heavy for the child. Rather, participants could have given priority to the male speaker’s desire that the bag should not be heavy for his child.

Comparing the bias-prosody correlation of negative questions in Japanese and South Kyeongsang Korean, an empirical question arises as to why the prosodic implementation of a positively biased negative question in South Kyeongsang Korean consists of two prosodic phrases, while it is a single phrase in Japanese. Recall that both the AD and the DD patterns are single minor phrases in Tokyo Japanese in that maximally one pitch accent is assigned to those phrases. One reason can be attributed to the exceptional prosodic marking of negation scope in South Kyeongsang Korean—the high plateau pattern. Thus, a neutral/negatively biased negative question is required to form a single prosodic phrase

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5) One of the reviewers pointed out that this prosodic pattern might be associated with a “rhetorical” function. Although I believe that a rhetorical question may be implemented with this pattern, the negative question in this case seems to convey a positive bias rather than a rhetorical function, in that it does expect a positive answer.

6) For instance, a negative interrogative “Don’t you like it?” conveys the speaker’s desiderative attitude toward the positive answer (Huddleston and Pullum 2002).
in South Kyeongsang Korean. On the other hand, the negative morpheme -nai in Japanese which bears an accent is realized in falling tone unless it carries positive bias.

Taken together, the results reported in the current study confirm that prosodic patterns are quite highly correlated with speaker bias in negative questions in South Kyeongsang Korean. However, there remains much to be examined about the interface between prosody and speaker bias. More participants and stimuli should be tested for statistical analyses, considering this study’s small sample size. Also, investigating the effect of age is crucial to investigating the potential effect of a change-in-progress.

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