Title

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Journal

Japanese/Korean Linguistics, 32(1)

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Publication Date

2026-07-31

DOI

10.5070/J7.67130

Resolving the Four-Way Ambiguity in Korean *What-so* Constructions*

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1 Introduction

This paper investigates Korean *what-so* constructions, in which the *wh*-expression *mwue-l* 'what-ACC' co-occurs with the degree expression *kulehkey* 'so', as illustrated in (1). Unlike other *wh*-questions in Korean, they give rise to a range of interpretations: the canonical *what*-question (1a), the *why*-question (1b), the *wh*-exclamative (1c), and the rhetorical question (1d).[1]

(1) Mimi-nun mwue-l kulehkey mahni mek-ess-e
Mimi-TOP what-ACC so much-CONN eat-PST-NEUT
a. 'What did Mimi eat so much of?'
b. 'Why did Mimi eat so much?'
c. 'How much Mimi ate!'
d. 'Mimi did not eat anything.'

[1] Here is the list of abbreviations: ACC (accusative), ADN (adnominal), CONN (connective), DECL (declarative), EXCL (exclamation), EXPL (explanatory), INTJ (interjection), NEUT (neutral), NOM (nominative), PASS (passive), POL (politeness), PRES (present), PROG (progressive), PST (past), QUE (question), TOP (topic).

* I am grateful to Professor Jiwon Yun for her valuable comments and discussion on this project. I would also like to thank the anonymous reviewers and the audience of JK32 for their helpful feedback. All remaining errors are my own.

Japanese/Korean Linguistics 32.
Edited by Youngdong Cho, Young-Hoon Kim, and John Whitman.

The high ambiguity arises from two factors: the ambiguous nature of *wh*-words in Korean, which can function either as a *wh*-pronoun (e.g., 'what') or an indefinite pronoun (e.g., 'something') (Kuroda 1965), and the distinct function of the accusative marker *-ul*, which adds an emphatic meaning to the sentence (Chae 2023). In addition, the contraction of the *wh*-word *mwues* 'what' and the accusative marker *-ul*, forming *mwue-l* 'what-ACC', contributes to the availability of noncanonical interpretations. Park and Kang (2020) reported that sentences containing *mwue-l* (*kulehkey*) are often used in Korean rhetorical *wh*-questions. Kim (2022) argued that the *mwue-l kulehkey* 'what-ACC so' combination gives rise to *why*-question and *wh*-exclamative readings in Korean. This raises the following question: how is a particular meaning derived from an ambiguous sentence with *wh*-words? This is often observed crosslinguistically, and such ambiguity is resolved by two types of cues: prosody and morphosyntax. Prosody serves as a salient disambiguation cue in many languages. For instance, in Cosenza Italian, prosodic information is essential for distinguishing between *wh*-questions and *wh*-exclamatives that are otherwise identical on the surface (Kellert et al. 2018). In English, prosodic cues can differentiate rhetorical questions from *wh*-questions (Dehé et al. 2022). Morphosyntactic strategies also contribute to disambiguation. In English, *wh*-interrogatives and *wh*-exclamatives are distinguished by subject-auxiliary inversion (Chernilovskaya 2010, Rett 2011), and German uses an optional rhetorical adjunct *schon* to differentiate between *wh*-questions and rhetorical questions (Biezma and Rawlins 2017).

Given that languages employ various ways to discern meaning from ambiguous sentences containing *wh*-words, it remains unclear how Korean resolves the ambiguity of the nonstandard readings in *wh*at-so constructions. It is well known that Korean uses prosodic cues to distinguish *wh*-questions from declaratives in which a *wh*-word receives an indefinite interpretation (Jun and Oh 1996, Yun 2013), due to the absence of overt syntactic markers (e.g., *wh*-movement in English *wh*-questions). However, relatively little is known about the prosodic and morphosyntactic properties of *wh*-constructions that yield nontypical interpretations in Korean. To fill the gap, the present study examines the morphosyntactic and prosodic features of Korean noncanonical *wh*-constructions and the disambiguation strategy they employ, using naturally occurring speech data.

The paper is organized as follows. Section 2 provides an overview of nonstandard interpretations of Korean *what-so* constructions. Section 3 presents the speech corpus study and its findings on morphosyntactic and prosodic cues. Section 4 discusses the implications of these findings, and Section 5 concludes the paper.

2 Noncanonical Interpretations of *What-so* Constructions

2.1 *Wh*-Exclamatives

Wh-exclamatives are formed differently from *wh*-questions in many languages. For instance, in German *wh*-exclamatives, the verb *hat* appears at the end of the sentence to make a structural difference with *wh*-questions. Japanese forms *wh*-exclamatives with the exclamatory *wh*-word *nan-te* and the exclamatory sentence-final particle *-nodeshoo*. However, Korean lacks such a morphosyntactic distinction between *wh*-exclamatives and *wh*-questions. In fact, Korean has traditionally been described as a language without *wh*-exclamatives, forming regular exclamatives instead with sentence-final particles such as *-kwun(a)* (No 1997), as in (2).

(2) Sara-nun chayk-ul manh-i ilk-ess-**kwuna**

Sara-TOP book-ACC many read-PST-EXCL
'Sarah read so many books!'

However, several studies revealed that exclamatives can be accompanied by various sentence-final particles such as the declarative ending *-ta*, and the explanatory ending *-ketun* (Hong 2017, Jo 2019), as seen in (3). To compensate for the absence of a morphosyntactic distinction for exclamatives, Korean uses various intonational contours. Several studies have found that Korean exclamatives are often accompanied by dynamic pitch fluctuation and lengthening of the Intonational Phrase (IP) boundary tone (Hong 2017, Jo 2019). For example, the sentences in (3) would be a plain declarative sentence when it is uttered with a falling pitch at the end of the sentence. The exclamative readings in (3) would be realized with greater fluctuation in the entire IP contour and final syllable lengthening at the end of the IP.

(3) a. Wancen sinkiha-**ta**
totally amazing-DECL
'So amazing!'
b. Ne ttaymwuney nay-ka kosayng com ha-yss-**ketun**
you because of I-NOM hardship a little do-PST-EXPL
'I had a really hard time because of you!'

2.2 *Why*-Questions

Another possible interpretation of *what-so* constructions is the *why*-question reading, which is commonly observed across languages. For instance, German *was* 'what' can be interpreted as *warum* 'why'. Japanese also exhibits the same pattern: *nani* 'what' can be used in *why*-question contexts. A similar pattern is observed in Korean, where a *why*-question reading can arise from *mwues* 'what'. This interpretation is confirmed by its substitutability with *way* 'why' (Kim 2022), as in (4).

(4) Mimi-nun {mwue-l/way} kulehkey manh-i mek-ess-ni
Mimi-TOP {what-ACC/why} so many-CONN eat-PST-QUE
'Why did Mimi eat so much?'

Thus, the grammatical status of *mwues* 'what' differs from that of the *wh*-word in canonical *wh*-questions, since *way* 'why' is a base-generated *wh*-adjunct (Ko 2005). In (5a), *sakwa-lul* 'apple-ACC' is the argument, but not the *wh*-word *mwue-l* 'what-ACC'. This syntactic configuration permits only the *why*-question reading rather than the canonical *what*-question interpretation shown in (5b).

(5) Mimi-nun {mwue-l/way} kulehkey sakwa-lul manh-i mek-ess-ni
Mimi-TOP {what-ACC/why} so apple- ACC many-CONN eat-PST-QUE
a. 'Why did Mimi eat so many apples?'
b. *'What did Mimi eat so many apples?'

Given that Korean *wh*-questions exhibit a rising pattern at the end of the IP (Jun and Oh 1996), the following hypothesis can be proposed: the *why*-question reading in *what-so* constructions may display a slight rising IP boundary. A sentence with a *why*-question reading may show a contour similar to that of a *wh*-question, as both serve the function of requesting information by using

mwues 'what.' Although the two readings may share the same phonological contour, their difference may be reflected phonetically in order to maximize the contrast between the two *wh*-readings (*what*- and *why*-questions).

2.3 Rhetorical Questions

Rhetorical questions are interrogatives that, on the surface, appear identical to regular *wh*-questions. However, they differ in that rhetorical questions carry the illocutionary force of a negated assertion (Han 2002). Although Dehé et al. (2022) show that English has distinctive prosodic cues for distinguishing rhetorical questions from *wh*-questions, the ambiguity can still depend on context. In the same vein, the sentence in (6) can be interpreted either as a canonical *what*-question or a rhetorical question, depending on the surrounding context zor the sentence prosody. Ahn and Kang (2020) examined the prosodic features of Korean rhetorical *wh*-questions in a contextually guided reading task and identified a falling contour at the end of the sentence, along with lengthening of the sentence-final syllable. This suggests that distinct prosodic realizations of the same sentence can correspond to different interpretations.

(6) Nay-ka mwue-l kulehkhey calmosha-yss-e
I-NOM what-ACC so do wrong-PST-NEUT
'I didn't do anything so wrong.' (Lit. 'What did I do so wrong?')

In sum, Korean *what-so* constructions give rise to a range of noncanonical interpretations—including *wh*-exclamative, *why*-question, and rhetorical question readings—despite the absence of overt morphosyntactic cues for each reading. Instead, Korean relies mostly on prosody to differentiate these meanings. Exclamative interpretations arise not from specific sentence-final particles but from distinct intonational features, such as greater pitch fluctuation and IP-final lengthening. *Why*-question readings emerge when *mwues* 'what' behaves as a *wh*-adjunct, with a prosodic contour similar to that of *wh*-questions. A different phonetic realization is expected to reflect the structural contrast between *what*- and *why*-questions. Rhetorical question readings are distinguished primarily by prosodic cues, including a final falling contour and sentence-final lengthening. Yet the Korean case raises a broader question: if nonstandard *wh*-constructions in many languages are shaped by morphosyntactic factors, how do such factors interact with prosody in Korean *what-so* constructions? This gap motivates a closer examination of how prosody and morphosyntax work together to produce the range of interpretations in Korean *what-so* constructions.

3 Corpus Analysis

3.1 Data and Method

Observing constructions in natural speech contexts is crucial to capturing the nature of the noncanonical *wh*-questions in Korean. To fulfill this, a spontaneous speech corpus from YouGlish was analyzed, as it provides naturally occurring examples with prosodic information in a communicative context. A total of 57 relevant target sentences were selected and then categorized based on the post-target context: (a) *what*-question, if a simple constituent answer followed, (b) *why*-question, if a reason was given, (c) *wh*-exclamative, if the sentence was followed by a different topic or no response, and (d) rhetorical question, if the sentence implied a negated

assertion. The audio files were annotated in Praat, and prosodic features were analyzed according to K-ToBI (Jun 2000). The analysis focused on the right edge of the AP (Accentual Phrase) and IP, marked as H (High) or L (Low), with an AP boundary marker 'Ta' and an IP boundary marker 'T%', where T refers to either an H or L tone.

3.2 Findings

Figure 1 shows the overall distribution of interpretations in the speech corpus data based on the given context: *why*-questions were the most salient reading (34 instances), followed by *what*-questions (11), *wh*-exclamatives (7), and rhetorical questions (5). The constructions were more likely to result in a nontypical interpretation, as *why*-question readings were most frequent. However, the canonical *what*-question reading occurred more often than the other noncanonical *wh*-readings (*wh*-exclamative and rhetorical question). In what follows, the analysis first addresses morphosyntactic cues, then turns to prosodic cues, and examines how each type of cue plays a distinct role in interpretive disambiguation.

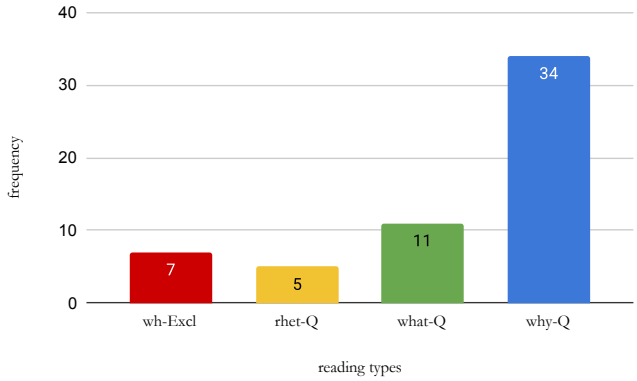

Figure 1: Distribution of the interpretations from the corpus data.

3.2.1 Morphosyntactic Cues

As shown in Table 1, subject realization patterns vary across readings. For information-seeking interpretations, both nominative and topic-marked subjects are attested, and the absence of a *what*-question reading with a nominative subject is treated as an accidental gap due to the small number of data points. In contrast, the two non-information-seeking readings appear to exhibit more categorical behavior: *wh*-exclamative readings had no overt subject, whereas rhetorical readings include an overt subject with the nominative marker. This may be due to a conflict between the topic marker and the function of the rhetorical question. While topic markers typically introduce or shift to a new topic, rhetorical questions rely on the existing context, often serving confirmatory or backchanneling functions. The function mismatch between the topic marker and the rhetorical question results in no instance of a rhetorical question with a topic marker. In (7), there is a clear difference between the sentence with a nominative-marked subject and the one with a topic-marked subject. The subject with a topic marker contributes to a genuine *what*-question, preventing a nontypical reading. This interpretive split suggests that subject realization and case marking are conditioned by interpretive type.

Furthermore, as shown in Table 2, sentences with an additional accusative-marked object were more likely to yield noncanonical readings, such as *wh*-exclamative and *why*-question readings. In (8), each sentence contains two accusative-marked elements: the *wh*-word *mwue-l* 'what- ACC' and an independently realized accusative-marked object. Since the latter already serves as the object of the predicate, the *wh*-word cannot be analyzed as the canonical object argument. This suggests that the *wh*-word in the sentence with an additional accusative-marked object has a different grammatical status compared to the one in canonical *what*-question readings.

Types	SUBJECT			Total
	absence	NOM	TOP	
WH-EXCL	7	0	0	7
RHET-Q	0	5	0	5
WHAT-Q	7	0	4	11
WHY-Q	30	1	3	34
Total	44	6	7	57

Table 1: Sentence types by subject case markers

Types	ADDITIONAL OBJECT		Total
	NO	YES	
WH-EXCL	5	2	7
RHET-Q	5	0	5
WHAT-Q	11	0	11
WHY-Q	30	4	34
Total	51	6	57

Table 2: Sentence types by an additional object

(7) {*Na-**nun**/Nay-**ka**} mwue-l kulehkey calmosha-yss-ni
{*I-TOP/I-NOM} what-ACC so do wrong-PST-QUE
'I didn't do anything wrong.' (Lit. 'What did I do so wrong?')

(8) a. **Mwue-l** kulehkey musikhakey **patak-ul** ssu-nya
What-ACC so ignorantly floor-ACC sweep-QUE
'How ignorantly you sweep the floor.'
b. Honca **mwue-l** kulehkey masiss-nun **ke-l** mek-nya
alone what-ACC so delicious-ADN thing-ACC eat-QUE
'Why are you eating something so delicious all by yourself?'

3.2.2 Prosodic Cues

As shown in Table 3, the majority of the data exhibited a rising contour at the IP boundary, particularly LH%, which aligns with the canonical *wh*-interrogative prosody observed in Korean (Yun 2023). However, no prosodic marker was exclusive to any single reading. Instead, the results suggest a broad tendency: *wh*-question readings (*what*- and *why*-questions) tend to pattern with rising contours, as shown in Figure 2, whereas non-*wh*-question readings (*wh*-exclamatives, rhetorical questions) more often pattern with falling contours, as shown in Figure 3. This pattern is consistent with the predictions laid out in the previous section, where both *wh*-exclamative and rhetorical question readings were expected to be associated with a falling IP-boundary contour and *wh*-question readings with a rising contour.

Types	Rising			Falling		Total
	H%	LH%	HLH%	L%	HL%	
WH-EXCL	1	1	2	2	4	10
RHET-Q	0	0	1	2	2	5
WHAT-Q	1	7	1	2	0	11
WHY-Q	2	21	0	4	4	34
Total	4	29	4	10	10	57

Table 3. IP-boundary tones by different readings

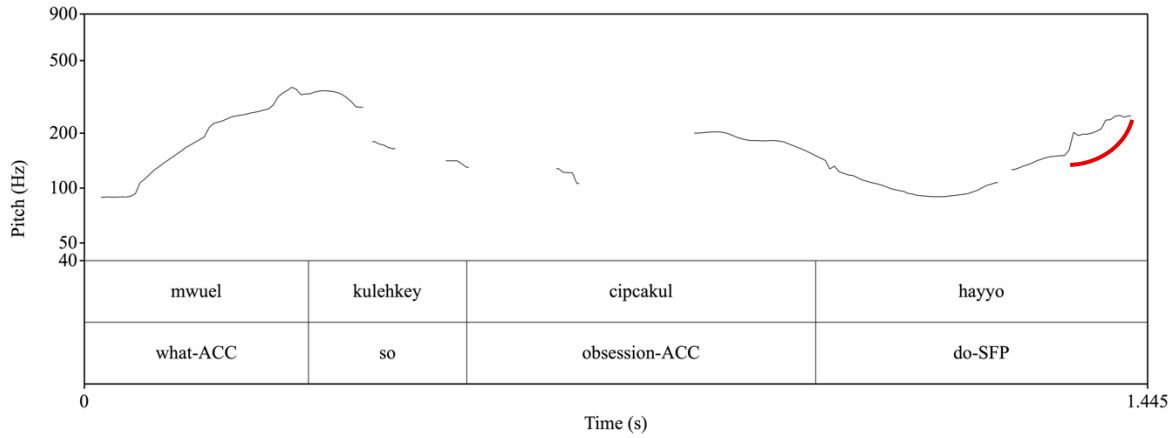

Figure 2: *Why*-question reading with LH%: 'Why are you so obsessed?'

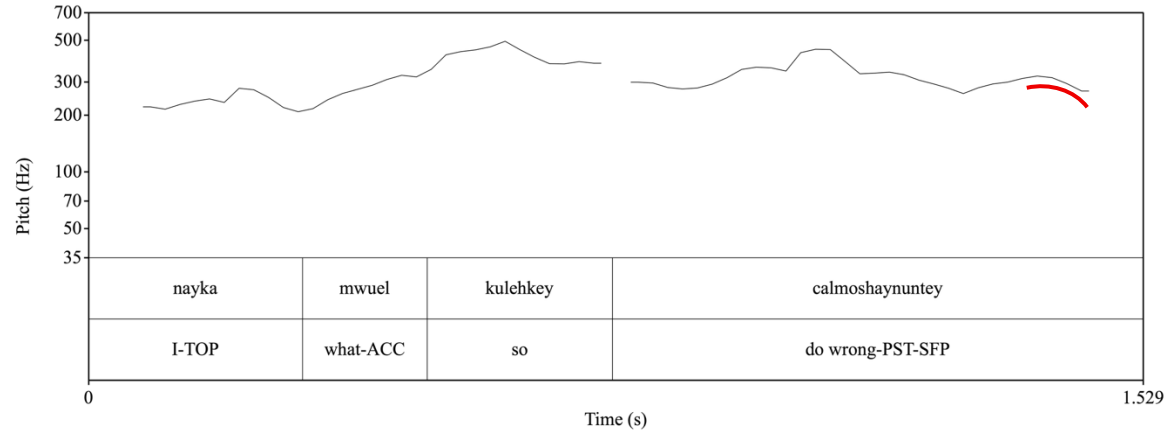

Figure 3: Rhetorical question reading with HL%: 'I didn't do anything wrong.'

Additionally, phonetic tonal distinctions were observed in the target AP (*mwue-l kulehkey* 'what-ACC so') boundaries. As shown in Table 4, the *what*-question reading displayed a slight rise at the end of the AP, while the other readings showed a falling AP boundary tone. Interestingly, their phonetic realizations differed in two *wh*-readings. While the *why*-question reading showed a falling contour, as in Figure 4, the *what*-question readings showed a rise at the end of the AP, as

shown in Figure 5. The AP boundary tones seem to vary in a way that maximizes the prosodic differences between the two *wh*-readings. Since both *what*- and *why*-questions share the same IP-boundary tone (LH%), AP boundary tones may play a crucial role in meaning disambiguation.

Types	AP boundary		Total
	Rise	Fall	
WH-EXCL	1	6	7
RHET-Q	0	5	5
WHAT-Q	8	3	11
WHY-Q	14	20	34
Total	20	37	57

Table 4. The target AP-boundary tones

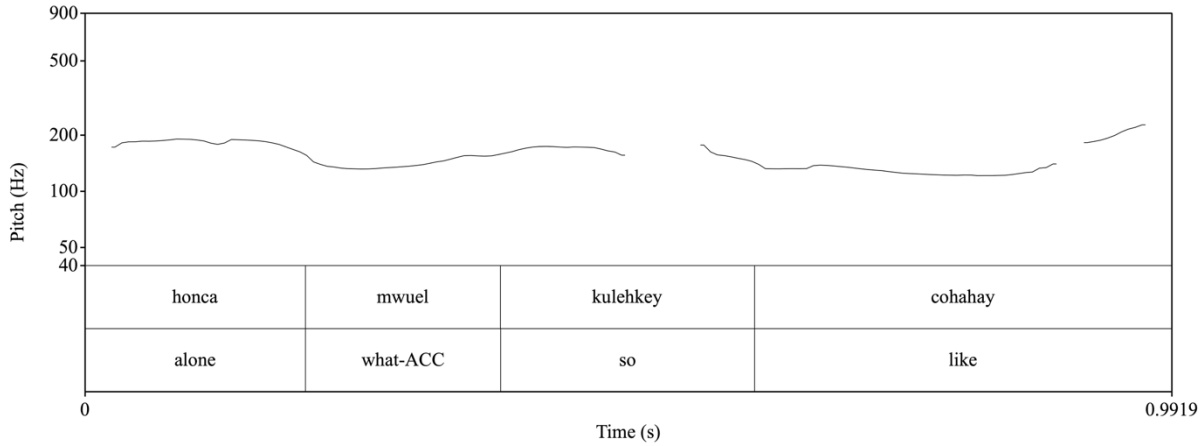

Figure 4: *Why*-question reading with a falling contour at the AP-final: 'Why are you enjoying it so much on your own?'

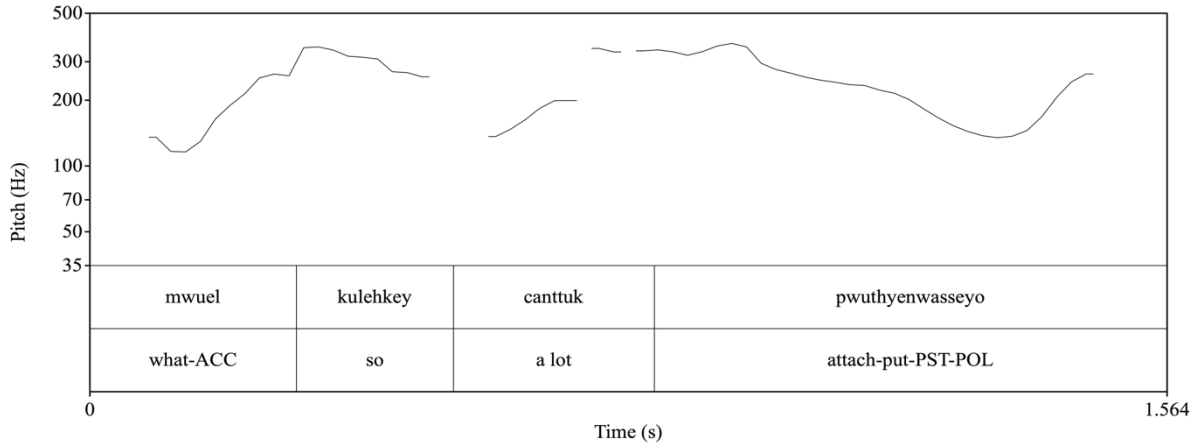

Figure 5: *What*-question reading with a rising contour at the AP-final: 'What did you stick so many things on it?'

4 Discussion

Crosslinguistic observations have shown that morphosyntactic and prosodic cues contribute to the interpretation of *wh*-sentences. Previous studies argue that prosodic cues are grounded in syntactic structure and often reinforce morphosyntactic disambiguation (Fromont et al. 2017, Baek and Yun 2018). In other words, prosodic patterns can signal morphosyntactic properties that might otherwise be ambiguous, guiding the listener toward the intended interpretation. However, this study suggests that prosody can serve as the primary cue in contexts where morphosyntactic information is unavailable. This indicates that the two types of cues differ in their availability. Prosodic cues are part of the speech signal and are therefore always accessible for the listener to interpret the sentence based on the prosody, whereas morphosyntactic cues are optionally available depending on the form of the sentence. As a result, prosody plays a critical role in disambiguation when other linguistic cues are not available to provide sufficient information.

In addition, differences in target AP boundary tones were found across *wh*-question readings. This finding highlights the role of prosody in determining the interpretive and pragmatic properties of interrogative constructions (Jun 2000). The AP-level prosodic differences can be better understood in relation to the emphatic function of the Korean accusative marker *-ul* (Chae 2023). The use of the accusative marker on the *wh*-word introduces an emphatic force that strengthens the intended meaning. Thus, prosody not only contributes to structural disambiguation but also encodes pragmatic information conveyed by *wh*-interrogatives.

5 Conclusion

This study examined disambiguation strategies for Korean *what-so* constructions. In particular, the study showed that the disambiguation cues are available in both morphosyntax and prosody. With respect to morphosyntactic cues, topic-marked subjects were incompatible with rhetorical question readings, while an additional accusative case-marked object favored noncanonical *wh*-readings. Prosodic cues were also identified: *wh*-question readings showed rising IP boundary tones, whereas non-*wh*-question readings showed a falling contour at the end of the sentence. At the AP level, the distinction between *why*- and *what*-question readings relied on the target AP boundary contours. To develop a more comprehensive understanding of the constructions, future research should extend the analysis beyond *mwues* 'what' to other *wh*-words that also permit noncanonical *wh*-readings. Furthermore, perception and production experiments are needed to investigate these disambiguation cues in a controlled setting, and I leave such investigations to future work.

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