



Prosodic Prominence and Intervention Effects: An Experimental Study



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Introduction: What is an intervention effect?

- Intervention effect refers to a degradation of perceived naturalness in sentences containing a **wh-in-situ** and a **focused element**.
 - * ?* **amwuto mwel** an mek-ess-ni?
anyone what-ACC NEG eat-PST-Q
'What did no one eat?' (Korean)
- Intervention effects are cross-linguistically well attested (Beck 2006).
 - * Wer hat **niemanden wo** angetroffen?
who has nobody-ACC where met
'Who didn't meet anybody where?' (German)
 - * **Lili-maatram eete** pustakam-aane waayikk-ate?
Lili-only which book-be read-NOM
'Which book did only Lili read?' (Malayalam)
- A key characteristic of intervention effect is that it is alleviated by fronting of the wh-phrase across the intervener (compare with *).
 - * **mwel amwuto** an mek-ess-ni?
what-ACC anyone NEG eat-PST-Q
'What did no one eat?'
- This has led researchers to conclude that intervention effect arises when an intervener c-commands an interrogative in-situ wh-phrase.
 - * [Q ... [intervener _{YP} ... **wh-phrase** ...]]

Previous Analyses

- Intervention effect has traditionally been analyzed as a violation of grammatical constraints on the well-formedness of wh-questions.
- Kim (2005) and Beck (2006) develop a Roothian account of intervention effects by appealing to the semantic notion of focus.
 - In a nutshell, intervention effects are ultimately reduced to failure in semantic composition.
- However, grammatical judgments on intervention effects are notoriously subtle, and variability among speakers is vast (Tomioka 2007).
- Tomioka (2007) and Hamlaoui (2010) instead propose a pragmatic account by appealing to the information-theoretic notion of focus.
 - Intervention effects are derived from less than perfect correspondence between syntactic structure and information structure.
- An immediate prediction of the pragmatic approach is that intervention effects will be subject to prosodic and contextual factors.
- Kitagawa et al. (2013) investigates the effect of prosody on intervention effects in Japanese. Experimental results showed that the addition of prosody improved the acceptability of IE-sentences.

Experiment Design

Audio Stimuli

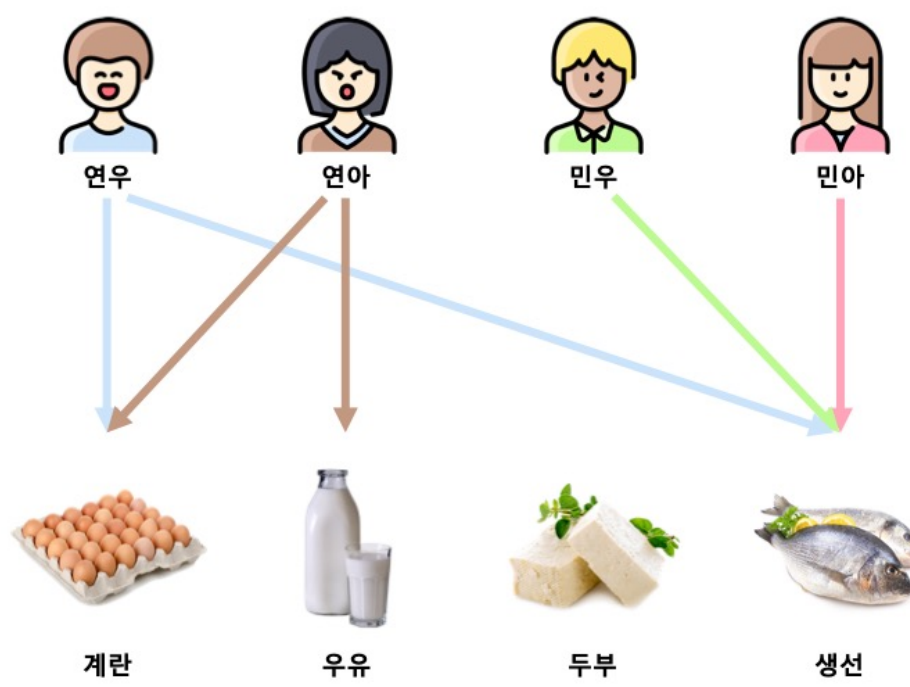
- Participants were given wh-questions with NPI interveners *amwuto* 'anyone' and *pakkey* 'else' and were asked to rate their naturalness.
- A confounding factor was found in the makeup of the stimuli. Korean wh-phrases are ambiguous between an interrogative and an indefinite reading, which is disambiguated by prosody (Yun 2019).
 - * amwuto mwel an mek-ess-ni?
anyone what-ACC NEG eat-PST-Q
Reading 1: 'What did no one eat?' (interrogative)
Reading 2: 'Did no one eat anything?' (indefinite)
- Yun (2019) shows that it is post-wh dephrasing that disambiguates, while wh-pitch increases the possibility of a wide scope reading.
- A male native speaker of Korean recorded the stimuli set under an indefinite reading, from which audio manipulation was conducted.

Wh-pitch	Sentence-final pitch	Note
low	high	Base Recording
high	high	
low	low	
high	low	Pitch contour of wh-questions

- I hypothesize that sentence-final pitch but not wh-pitch contributes to disambiguation. The latter instead contributes to focal prominence.
- Grammatical and ungrammatical fillers were also included to measure participants' baseline judgments.

Procedure

- Participants listened to an audio recording of a question (ambiguous b/w wh and polar) and rated its naturalness in a 7-point Likert scale.
- They were then asked to respond to the question with regard to the image presented on screen, which displayed four individuals, four items, and randomly assigned relationship between them.
- A sample image used in the experiment is shown on the right. Given * as an audio stimuli, the correct answer under a wh-question interpretation would be "tofu". Under a polar question interpretation, the correct answer would be "Yes".
- Target stimuli and fillers were presented in random order.

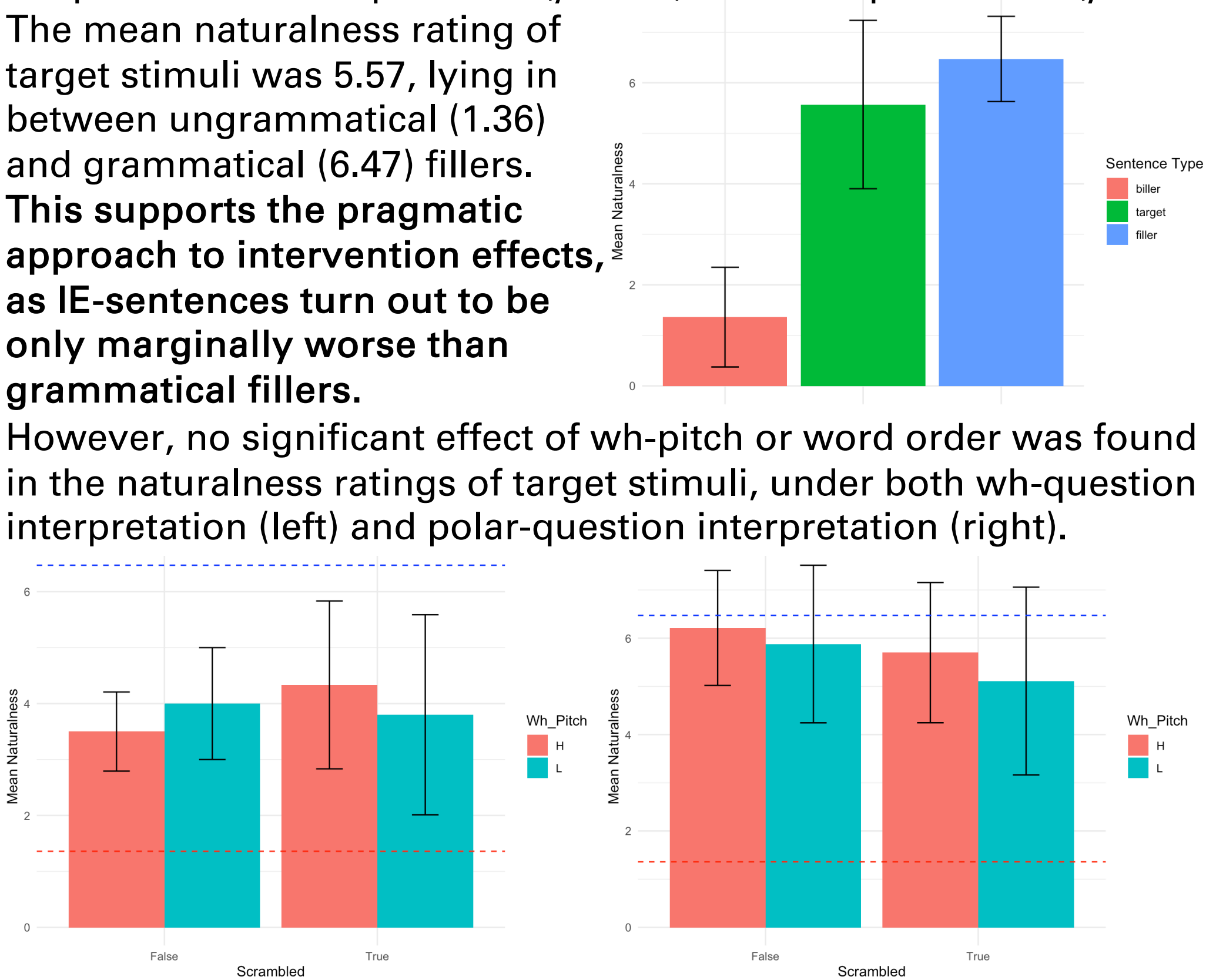


Participants

- 9 native speakers of Korean were recruited (5 male, 4 female).

Results & Analysis

- Corroborating previous findings, sentence-final pitch but not wh-pitch contributed to the disambiguation of wh-phrases. A logistic mixed effects model confirmed that sentence-final pitch is a significant predictor of interpretation ($p < .05$) while wh-pitch is not ($p = .517$).
- The mean naturalness rating of target stimuli was 5.57, lying in between ungrammatical (1.36) and grammatical (6.47) fillers.
- This supports the pragmatic approach to intervention effects, as IE-sentences turn out to be only marginally worse than grammatical fillers.**
- However, no significant effect of wh-pitch or word order was found in the naturalness ratings of target stimuli, under both wh-question interpretation (left) and polar-question interpretation (right).



- The somewhat inconclusive result may be attributed to the limited scope of the experiment or potential flaws in the experiment design.
- Nevertheless, the result is in line with Kitagawa et al. (2013) in that it suggests that intervention effects be studied from a new perspective.

Acknowledgment & Links

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[Stimuli]

[Experiment]



References

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