

ON THE PROCESSING OF FILLER-GAP DEPENDENCIES IN ENGLISH BY KOREAN L2 LEARNERS – AN EYE-TRACKING STUDY

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The shallow structure hypothesis (Clahsen & Felser, 2006) argues that L2 learner's processing mechanism is less sensitive to detailed structural cues than that of natives, while limitation-based accounts (McDonald, 2006; Hopp, 2014) suggest that cognitive resources can modulate the L2 speaker's processing. This study investigates whether L2 learners' sensitivity to abstract syntactic cues during real-time processing is modulated by their working memory or their processing mechanism by itself.

We hypothesized if L2 learners' reduced sensitivity to abstract syntactic cue is attributed to cognitive limitations, higher working memory capacity (WMC) would lead to greater sensitivity to the cue. Twenty-five adult Korean learners of English read sentences including intermediate gap structures (Table 1), following the experimental paradigm of Marinis et al. (2005). All participants have learned English in the classroom setting and never lived abroad or for less than a year, and their proficiency was at or above the upper intermediate level. WMC was assessed using an English version of reading span task. Their eye movement while they read experimental materials was recorded with SMI RED500 (250Hz) and two critical regions were analyzed, where 1) an intermediate gap is placed or equivalent position in control conditions (*that/about*) and 2) the filler-gap integration takes place (*had p.p.*). Sensitivity to the intermediate gap was expected to be shown as longer RTs at the intermediate gap region and shorter RTs at the filler-gap integration region, similar to the patterns observed in native speakers in previous studies. Four reading time measures (*first-pass reading time, go-past time, second-pass reading time, and total reading time*) were analyzed for each region by LMER using R.

The results showed no evidence of a facilitatory effect from the intermediate gap in any reading time measures at both regions, regardless of participants' WMC. Although there was a significant three-way interaction only in the go-past time measure ($estimate=-0.647$, $S.E.=0.299$, $t-value=-2.166$), the effect was irrelevant to the intermediate gap facilitation. In conclusion, the data in this experiment suggest that, at least for the intermediate gap structure, higher memory resources does not increase sensitivity. The absence of a facilitatory effect in this study provides supportive evidence for the shallow structure hypothesis that L2 learners are less sensitive to detailed syntactic structural building, by their mechanism rather than their limited mental resources.

Table 1. Example sentences for each condition (*Critical regions were underlined)

Conditions	Example
Extraction-VP (intermediate gap)	The nurse who the doctor argued <u>that</u> the rude patient <u>had angered</u> was refusing to work late.
Extraction-NP	The nurse who the doctor's argument <u>about</u> the rude patient <u>had angered</u> was refusing to work late.
Nonextraction-VP	The nurse said the doctor argued <u>that</u> the rude patient <u>had angered</u> the staff at the hospital.
Nonextraction-NP	The nurse said the doctor's argument <u>about</u> the rude patient <u>had angered</u> the staff at the hospital.

Reference

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