An Experimental Investigation of Island Effects in Korean

The etiology of island phenomena continues to be a central concern in linguistic theory, and *wh*-in-situ languages have an important role to play. Whether island effects exist or not in these languages can potentially tell us a lot about the nature of islands, but unfortunately, the facts are still not completely clear. Some have argued for the presence of island effects (e.g. Lee 1982, Han 1992, Hong 2004 for Korean; Nishigauchi 1990, Watanabe 1992 for Japanese), while others have argued against it (e.g. Suh 1987, Choi 2006, Hwang 2007 for Korean; Ishihara 2002, Sprouse et al. 2011, for Japanese).

This situation points to the need for carefully designed, formal acceptability experiments to determine exactly what the facts are. This approach has been very successfully applied to *wh*-movement languages (e.g. Sprouse & Hornstein 2013), but languages like Korean raise difficult methodological concerns, given that the relevant sentences are always well-formed as strings and that *wh*-words also allow for a non-*wh* existential reading, which could very plausibly cloud judgments. In the present study, we thus aim to answer two questions:

> (i) Can island effects be probed experimentally in Korean?
> (ii) If so, do island effects exist in Korean?

We will claim that we can give a positive answer to both questions.

Method/Materials: We present 4 experiments designed to test for the existence of *wh*-island (*whether* island) and adjunct island effects with in-situ argument *wh*-phrases in Korean, using both canonically ordered and scrambled sentences. Subjects were presented with a context, a question, and an answer, and were then asked to rate the acceptability of the answer as a very first response to the question, given the context, using a 7-point scale. The stimuli in each experiment follow a 2x2x2 design: Location of *wh*-word (in matrix vs. embedded clause), Embedded clause type (non-island vs. island) and Answer type (appropriate for direct *wh*-question vs. yes/no question). See Table I for a sample of this design, from Experiment 1.

Location of *wh*-	Emb. clause	Ans	Context: Situation: At the White House People: Hillary, John, Obama, and Mary
Matrix	- island / + island	*Wh*	Q: **Nwukwu**-ka [Obama-ka Mary-lul manna-ss-ta**ko/nunci**] tul-ess-ni? who/ind-Nom -Nom -Acc meet-Past-Dec-that/whether hear-Past-Q 'Who/Someone heard that/whether Obama met Mary?' A: Hillary-ka 'Hillary'
Matrix	- island / + island	Y/N	Q: Same as above. A: Ney, tul-ess-eyo 'Yes, heard'
Emb.	- island / + island	*Wh*	Q: Mary-nun [Obama-ka **nwukwu**-ul manna-ss-ta**ko/nunci**] tul-ess-ni? -Top -Nom who/ind –Acc meet-Past-Dec-that/whether hear-Past-Q 'Who did Mary hear that/whether Obama met?' 'Did Mary hear that/who Obama met someone/___?' A. Hillary-lul 'Hillary'
Emb.	- island / + island	Y/N	Q: Same as above. A: Ney, tul-ess-eyo 'Yes, heard'

**Table I: Sample stimuli for Experiment 1.**

The questions in the stimuli are systematically ambiguous, since *wh*-words may be interpreted as true *wh* or as existentials (e.g. Hong 2004). The answers, however, encourage one reading or the other. In addition, the presence of a context makes the *wh*-reading pragmatically plausible, even when this would violate an island. In order to probe a wider range of cases where potential island

violations might be acceptable, embedded clauses were tested both in their canonical position and in a scrambled position. See Table II for a summary of the four experiments.

Experiment 1	*wh*-islands, canonical order (as in Table I)
Experiment 2	adjunct islands, canonical order (same as Table I but *nunci* replaced by –*ttay* 'when')
Experiment 3	*wh*-islands, scrambled order (same as Table I but embedded clause is fronted)
Experiment 4	adjunct islands, scrambled order (same as Experiment 2 but embedded clause is fronted)

Table II: Summary of stimuli in each experiment

40 sets of stimuli were created for each experiment and distributed in 8 lists using a Latin Square design. Subjects saw 5 tokens of each condition, and there was a 1.5:1 filler:experimental ratio. 48 Korean native speakers participated in Exp. 1 and 2, and a separate group of 48 participated in Exp. 3 and 4.
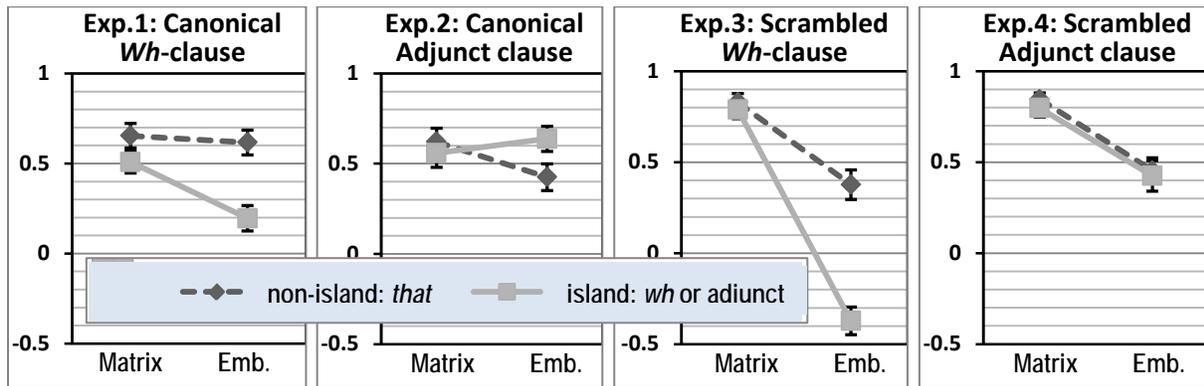
Figures 1-4: Z-score results for *wh*-answers in Experiments 1-4

Results: Results for the cases with a "*wh*-answer" (i.e. where the answer is appropriate only for a direct *wh*-question interpretation) are in Fig. 1-4. We find a significant interaction between Location of *wh*-word (matrix or embedded clause) and Embedded clause type (non-island or island) in Exp. 1 ($F(1,47)=9.28$, $p=.003$) and Exp. 3 ($F(1,47)=37.770$, p <.0001), but not 2 or 4. In both 1 and 3, the condition in which the *wh*-word is within the embedded *wh*-clause is significantly worse than when it is within a matrix clause or the embedded *that*-clause. We are thus seeing an island effect with *wh*-clauses (1 and 3), but not with adjunct clauses (2 and 4). This effect is crucially not seen in the cases with "yes/no answers" (results not given here due to lack of space).

Conclusions: The two questions mentioned in the introduction can now be answered positively:
(i) We are able to profitably explore the possible existence of island effects in Korean experimentally. We did this by measuring the acceptability not of the *wh*-question itself (which would not yield useful results in Korean), but of the answer to the question, given a particular context. This resulted in an interesting and reasonable pattern of results, suggesting that the method is valid.
(ii) There is a robust island effect with *wh*-clauses in Korean, though not with adjunct clauses. This result makes sense, given the emerging consensus about the processing of *wh*-in-situ questions in Japanese/Korean in which the *wh*-word triggers an active rightward search for a scope/question marker (e.g. Miyamoto & Takahashi 2002). The presence of such a marker in C of the embedded clause strongly discourages matrix scope of an embedded *wh*-word, thus yielding the *wh*-island effect, but the lack of this marker in *that*- or adjunct clauses means that no island effect will obtain in those cases (see also Sprouse, Fukuda, Ono and Kluender 2011).