

## Variable Island Sensitivity in Norwegian: Wh-Extraction and Topicalization

It has been reported (e.g. Maling & Zaenen, 1982) that unlike English speakers, speakers of Mainland Scandinavian languages accept filler-gap dependencies that span WH-islands, complex NPs (CNP), and relative clauses (RCs). Kush, Lohndal & Sprouse (2014, KLS) found that extraction of bare wh-words from a WH-island resulted in a weaker island effect in Norwegian and Swedish than in English, but no evidence to suggest that CNP or RC island effects were weaker or absent in the languages. In order to better understand possible cross-linguistic variation in filler-gap dependencies, we sought to determine whether island effects differ as a function of dependency type, since most naturalistic examples of CNP and RC island violations in the literature involve topicalization, rather than wh-movement (Engdahl, 1998).

We conducted three acceptability judgment experiments that tested five island types: WH, CNP, subject, adjunct, and RC islands. Following Sprouse, Wagers & Phillips (2012) both experiments used a factorial design to isolate grammatical island effects, which are defined as the super-additive interaction of two independent factors.

**Experiment 1** (N=64) tested the acceptability of *wh-movement* from each island. Items for each island were constructed according to a 2 x 2 design, crossing the factors STRUCTURE (NoIsland/Island) and DEPENDENCY LENGTH (Short/Long). A (translated) example item from the WH-island subexperiment is in (1). **Experiment 2** and **Experiment 3** (Ns=32) tested the acceptability of island-violating *topicalization* dependencies. The design crossed STRUCTURE (as above) and TOPICALIZATION (NoTopicalization/Topicalization), example in (2). In Experiment 2 test sentences were presented without context (as in Experiment 1). In Experiment 3 test sentences were preceded by a context-setting sentence that supported a contrastive reading of the moved phrase in the topicalized sentences. Participants gave ratings on a 7-pt scale, which were then z-transformed.

**Results.** We found consistent and significant super-additive interactions for all five island types in Experiments 1 and 2 (z-scored ratings,  $ps < .05$ ; LMEMs). In Experiment 3, significant interaction effects were found for only three islands: Subject, CNP, and RC. WH- and Adjunct Island effects were not significant. There was also considerable variation in *effect size* across islands and experiments. For example, Subject island effects were large in all three experiments (Difference-in-Difference Score = 1.22, 1.43, 1.66 respectively). Consistent with KLP (2014), WH-Island effects were markedly smaller (0.27, 0.55, 0.28). RC island effects were also smaller in Experiments 2 and 3 than in Experiment 1. Inspection of rating distributions revealed inconsistent judgments of certain island violations. Ratings of Wh-islands in all three were *bimodally* distributed: (a subset of) participants oscillate between accepting and rejecting test sentences. Similar bimodality was observed for RC Island and Adjunct judgments in Experiment 3. Ratings of subject island violations, in contrast, are unimodally distributed around  $z = -1$ , indicating uniform rejection. We suggest that bimodal judgments reflect the application of defeasible constraints (akin to *Weak Islands*) rather than rigid syntactic constraints. Topicalization may facilitate accommodation of the relevant reading of the filler required to overcome these constraints more easily than wh-movement.

### Experiment 1

- (1) a. Hvilken servitør \_\_ trodde at Knut ville bestille kaffe?  
Which waiter \_\_ thought that Knut would order coffee? (NOISLAND-SHORT)
- b. Hvilken kaffe trodde servitøren at Knut ville bestille \_\_\_\_?  
Which coffee thought waiter.def that Knut would order \_\_? (NOISLAND-LONG)
- c. Hvilken servitør \_\_ lurte på om at Knut ville bestille kaffe?  
Which waiter \_\_ wondered on whether Knut would order coffee? (ISL-SHORT)
- d. Hvilken kaffe lurte servitøren på om Knut ville bestille \_\_\_\_?  
Which coffee wondered waiter.def on whether Knut would order \_\_? (ISL-LONG)

### Experiment 2

- (2) a. Servitøren trodde at Knut ville bestille kaffee.  
Waiter.def thought that Knut would order coffee. (NOISLAND-SHORT)
- b. Den kaffen trodde servitøren at Knut ville bestille \_\_\_\_.  
That coffee thought waiter.def that Knut would order \_\_? (NOISLAND-LONG)
- c. Servitøren lurte på om at Knut ville bestille kaffee?  
Waiter.def wondered on whether Knut would order coffee? (ISL-SHORT)
- d. Den kaffen lurte servitøren på om Knut ville bestille \_\_\_\_?  
That coffee wondered waiter.def on whether Knut would order \_\_? (ISL-LONG)

### Example contexts for Experiment 3

- (3) a/b. Servitøren antok at Knut ville nekte å drikke tee, men ...  
Waiter.def assumed that Knut would refuse to drink tea, but...
- c/d. Servitøren visste at Knut ville foretrekke tee, men ...  
Waiter.def assumed that Knut would prefer tea, but...