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### **Informativity and Acceptability of Complex Subject Islands**

**Claims:** Complex subject (CS) NPs have been considered strong syntactic islands which cannot host a gap (Ross 1967, Chomsky 1973). Though, current theories posit a categorical prohibition on gaps within certain syntactic islands using structural constraints in the competence grammar, we find systematic gradience in the acceptability of gaps located within CSs. There is increasing empirical evidence that reducing processing complexity improves the acceptability of sentences with an island constraint violation (Hofmeister 2007, 2009, Philips 2008, Wagers & Philips 2009, Hofmeister & Sag 2010). This study suggests a nuanced view of island constraints that challenges the binary grammaticality judgments underlying theories of island constraints and argues for a partially processing based account.

**Informativity:** An expression  $x$  is more informative than an expression  $y$  if the lexical and syntactic information encoded by  $y$  is a proper subset of the information encoded by  $x$ . The more complex the NP, the more informative it is, defining a hierarchy of NP complexity that we exploit in the following 3 experiments (*student from Kentucky* > *student* > *human*). A bare *wh*-phrase (*who*) contains only the information that it stands for something human, while *which student* adds information that the thing is also a student. Adding the intersective modifier *from Kentucky* to form *which student from Kentucky*, increases informativity further.

**Experiments:** We conducted a series of acceptability judgment experiments that systematically manipulated the accessibility of subject NPs within the CSs. Participants rated sentence acceptability on a scale of 1 (Completely Unacceptable) to 7 (Completely Acceptable). Experiment 1 establishes a baseline and compares the acceptability of sentences containing bare *wh*-filler extractions (1a) from complex subjects with minimally different sentences containing extractions from matrix direct objects (1b). Experiment 2 increases filler informativity by using *wh*-fillers with nominal complements (2a) while Experiment 3 increases filler informativity further by adding prepositional phrases (3a).

**Discussion:** Experiment 1 demonstrated that low filler informativity leads to low acceptability of extractions from CSs (1a) (Mean=2.43,SD=1.73) compared to extractions from matrix direct objects (1b) (Mean=3.60,SD=2.11, $p<.05$ ). Experiment 2 demonstrated that increasing filler informativity decreases the difference in acceptability between extractions from CSs (2a) (Mean=2.61,SD=1.72) and matrix direct objects (2b) (Mean=3.04,SD=1.90, $p<.05$ ). Experiment 3 showed that increasing the informativity of the filler by adding a prepositional phrase can completely mitigate the difference in acceptability ratings between extractions from CSs (3a) (Mean=2.67,SD=1.65) and matrix direct objects (3b) (Mean=2.81,SD=1.80, $p=.20$ ). If the parser were truly sensitive to a grammatical prohibition on extractions from CSs, no manipulation of processing factors should remove the difference between the two extraction conditions. To the contrary, Experiment 1, 2 and 3 reveal a steady decrease in the difference between the two conditions as the informativity of the filler increases (Table 1).

The presence of both a CS and a filler-gap dependency significantly reduces acceptability regardless of whether the gap is located within the syntactic island or not. We confirm that when the gap is located within the CS acceptability is further reduced and demonstrate how to systematically mitigate this difference by manipulating the informativity of the filler. The graded nature of the acceptability results suggests that these phenomena cannot be accounted for only as a categorical prohibition on syntactic configurations in the competence grammar. The strong interaction with known processing factors suggests a processing account. While such an account must acknowledge the decreased acceptability associated with island constraint violations it must also take into account other factors such as filler informativity that can have a larger impact on sentence acceptability.

- (1a) [Who] would [my deceiving \_\_\_] bother Sarah?  
 (1b) [Who] would [my deceiving Sarah] bother \_\_\_?  
 (2a) [Which commissioner] would [my appointing \_\_\_] bother Joe?  
 (2b) [Which commissioner] would [my appointing Joe] bother \_\_\_?  
 (3a) [Which perpetrator with a motive] would [my arresting \_\_\_] bother Susan?  
 (3b) [Which perpetrator with a motive] would [my arresting Susan] bother \_\_\_?

Table 1

Informativity	Subject
Low	2.43
Medium	2.61
High	2.67

### References

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