Informativity and Acceptability of Complex Subject Islands

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Introduction

- Complex subject NPs (1) are considered strong syntactic islands which cannot host a gap (Ross 1967, Chomsky 1973).

(1) *What did [that sandy read __] surprise Kim?

- Evidence that reducing processing complexity improves the acceptability of sentences with an island constraint violation (Hofmeister 2007, 2009, Hofmeister & Sag 2010).
- Some Islands more transparent to the processor than others. (Wagers 2008, 2009)
- Suggestions that acceptability of complex subject island violations are variable (Kluender 2005).
- Are Subject Islands ameliorated by reducing processing complexity?

Filler Informativity

- Found to facilitate processing of filler gap dependencies (Hofmeister, 2008).
- Expression *x* is more informative than expression *y* if the lexical and syntactic information encoded by *y* is a proper subset of the information encoded by *x*.
- (*student from Kentucky* > *student* > *human*)
- (*Which student from Kentucky* > *which student* > *who*)

References

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Method

- 7 point Likert scale acceptability judgments over Amazon Mechanical Turk.
- Each subject rated 12 target sentences and 8 filler sentences.
- Each experiment contained 2 conditions (gap location)
- 3 levels of increasing filler complexity: Low (Exp. 1) Medium: (Exp. 2) High (Exp. 3)

Experiment 1

- Extractions with Low Informativity Filler

Subject Extraction Condition:
[Who] would [my deceiving __] bother Sarah?

Object Extraction Condition:
[Who] would [my deceiving Sarah] bother __?

Results:

- Low acceptability of extractions from Subjects (Mean=2.43,SD=1.73) compared to Objects (Mean=3.60,SD=2.11,p<.05).

Experiment 2

- Extractions with Medium Informativity Fillers

Subject Extraction Condition:
[Which commissioner] would [my appointing __] bother Joe?

Object Extraction Condition:
[Which commissioner] would [my appointing Joe] bother __?

Results:

- Decreased acceptability difference between Subject (Mean=2.61,SD=1.72) and Object (Mean=3.04,SD=1.90,p<.05) extractions.

Experiment 3

- Extractions with High Informativity Fillers

Subject Extraction Condition:
[Which perpetrator with a motive] would [my arresting __] bother Susan?

Object Extraction Condition:
[Which perpetrator with a motive] would [my arresting Susan] bother __?

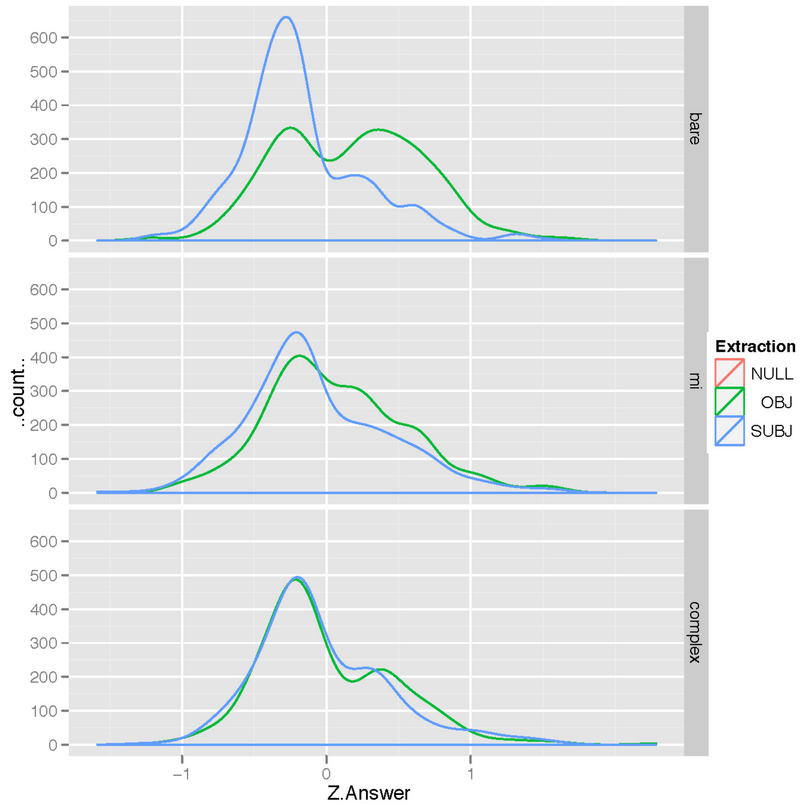
Results:

- No acceptability difference between Subject (Mean=2.67,SD=1.65) and Object extractions (Mean=2.81,SD=1.80, p = .20)

Results Summary

Informativity	Subject	Object	Diff
Low	2.43	3.60	1.17
Medium	2.61	3.04	0.43
High	2.67	2.81	0.14

(Table 1)



(Figure 1)

Conclusions

- Steady decrease in acceptability difference as filler informativity increases (Table 1).
- The presence of a complex subject and a filler-gap dependency significantly reduces acceptability regardless of gap location.
- The strong interaction with known processing factors suggests a processing based account.

Mixed Effects Model

Informativity	Object	Subject	Std
Low	0.010	-0.215	.14
Medium	0.011	-0.024	.14
High	-0.024	0.052	.14

(Table 2)

Z.Answer ~ Extraction + Type + Extraction:Type + (1 + Extraction|Exp) + (1+ Extraction|Base) + (1|MD5) + (0+Extraction|MD5)

Obs: 4408, Groups: MD5: 347,, Base, 12, Exp, 5
AIC = 5868.2, DIC = 5765.9 deviance = 5800.00