Processing Strategies and Resumptive Pronouns in English

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Abstract

In a magnitude estimation task, 23 native speakers of English rated sentences with subj-gap and obj-gap indefinite relative clauses (RCs) formed from non-islands and islands, with and without a resumptive pronoun (RP). We found that while subject RPs, but not object RPs, improve acceptability in islands, resumptive RCs receive a uniformly low acceptability rating across clause types. The attested subject-object asymmetry thus is not a function of resumption itself but instead is due to the fact that subject empty gap RCs are much less acceptable than object empty gap RCs.

Background

- Theoretical and corpus work (Ross 1967, Kroch 1981, Prince 1990): RPs "amnesty" island violations.
- Experimental work on object resumption (Alexopoulou & Keller 2007, Heestand et al. 2011): RPs do not improve island violations.
- Experimental work on subject resumption (McDaniel & Cowart 1999): Subject, but not object, RPs are better than empty gaps in weak island RCs.
- Experimental work on subject/object resumption (Keffala & Goodall 2011): Definite RCs formed from simple clause, *that*-clause, *wh*-island and RC island show no difference in acceptability between subject and object resumption.

Research Questions

RPs are more common with indefinite RCs than definite RCs in corpus (Prince 1990, 1997, Ariel 1999).
1. Do RPs improve the acceptability of subj-gap indefinite RCs formed from strong islands as well as weak islands?
2. In island indefinite RCs, are subj-gap RPs more acceptable than obj-gap RPs?

The Experiment

Methods

- **Task:** Magnitude Estimation
  Participants rate the acceptability of each test sentence in proportion to the score assigned to the reference sentence.
- **Within-subjects design:** 2×2×2 (8 conditions)
  - Clause Type: relativization from non-island / island
  - Gap Type: empty / pronoun (RP)
  - Gap Position: subject / object
- **Participants:** 23 native English speakers living in Vancouver, Canada
- **Procedure:**
  - 6 practice trials
  - 96 test trials (12 per condition) + 72 fillers
  - Items rated in a uniquely generated random order using WebExp (Keller et al. 2009)

Materials

- All test items were transitives; RCs modified indefinite matrix objects.
  The manager fired a reporter [who the editor speculated why (he) defamed the senator].
- 4 test frames:
  1. The manager fired a reporter who _____.
  2. The chair met an undergraduate who _____.
  3. The detective interrogated a man who _____.
  4. The director hired an actor who _____.
- Each test frame instantiated as 24 test sentences (half with an RP, half without) with subj-gap or obj-gap RCs formed from different clause types:

Non-island clause types	Island clause types
simple	*wh*-complement (weak)
one-level embedded	adjunct (strong)
two-level embedded	noun complement (strong)

Findings

Mean scores per condition

Mean scores per clause type
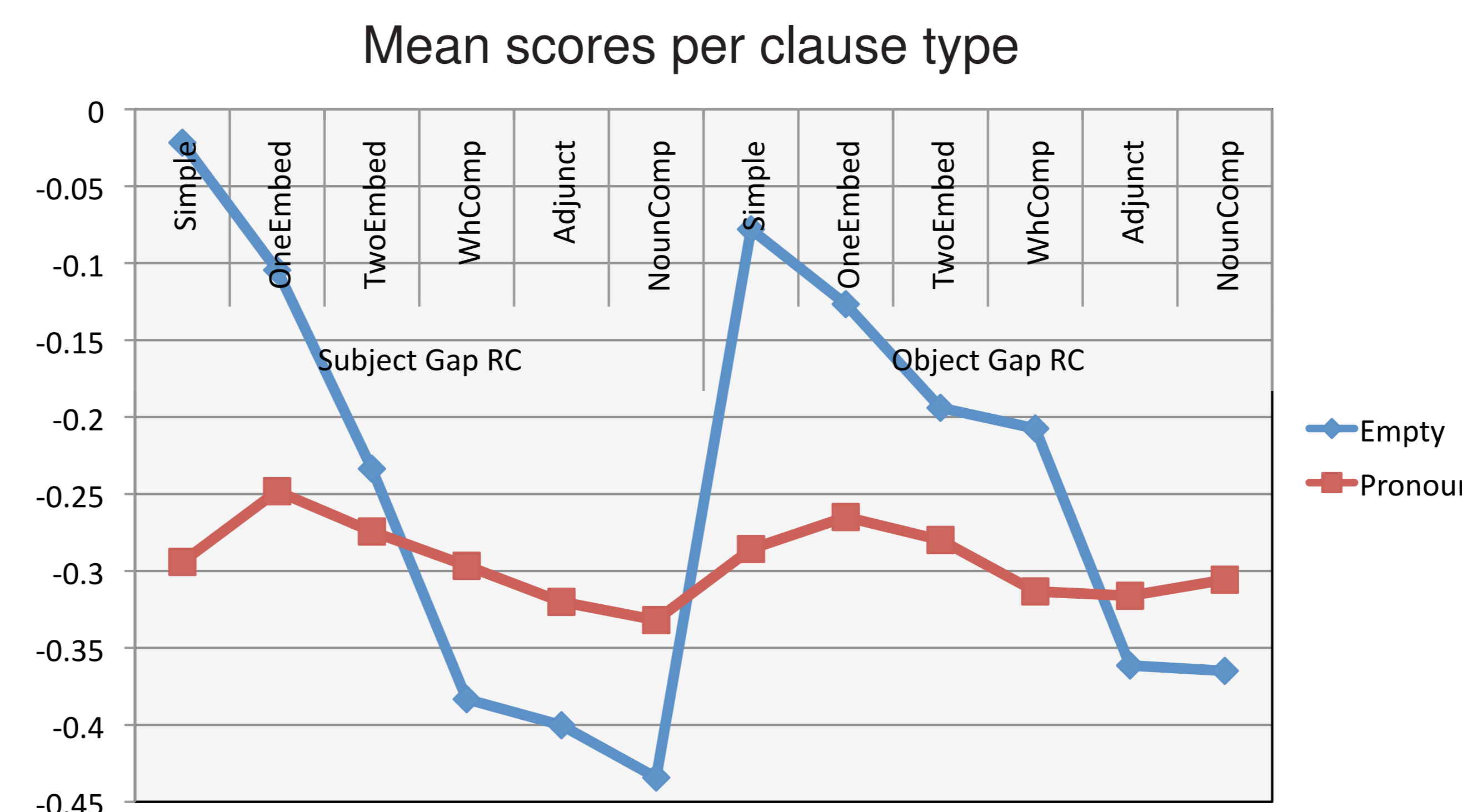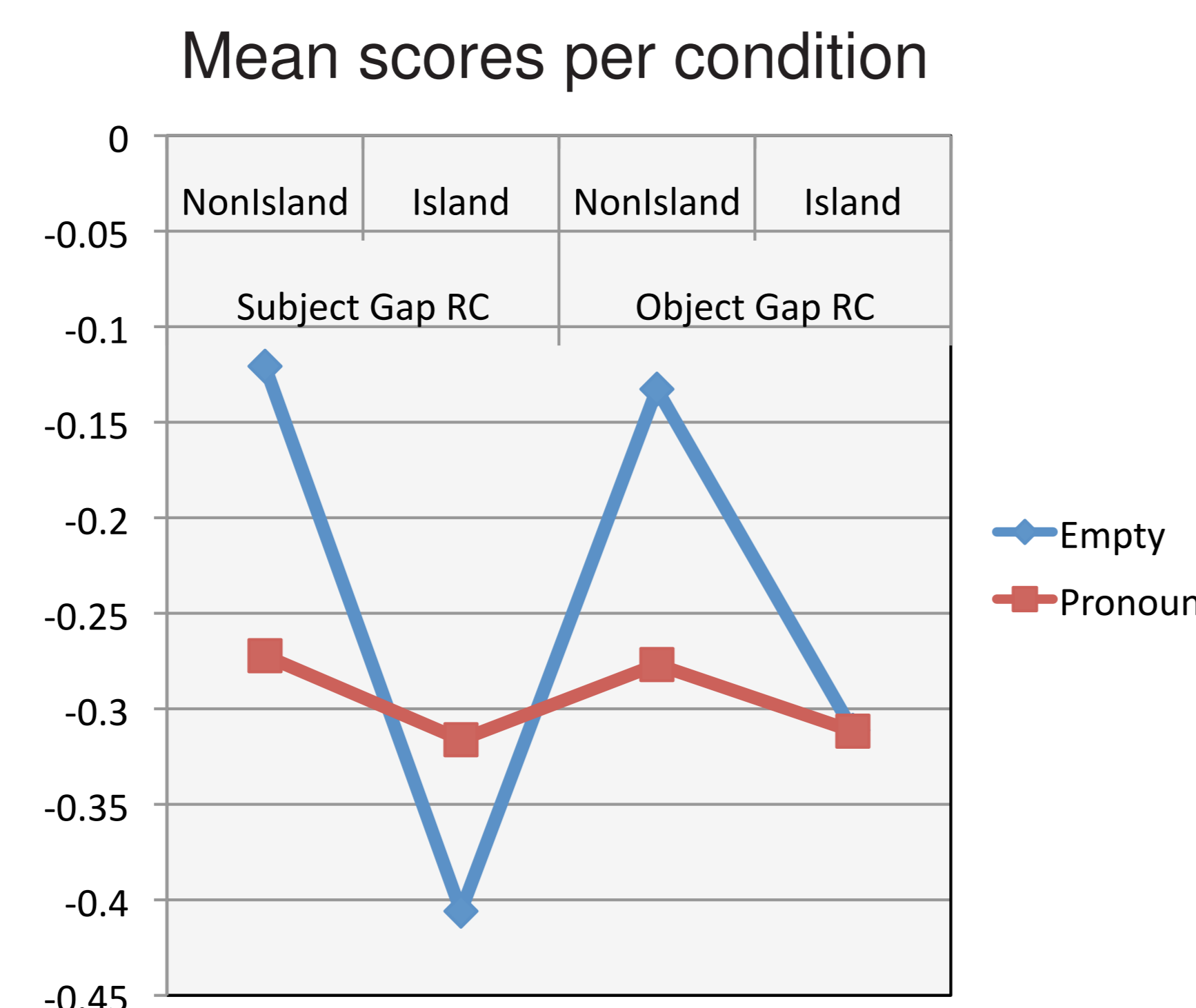
Repeated measures ANOVA

- Interaction of Gap Type and Clause Type:
  $F(1,22)=18.43$, $p<0.001$
  Regardless of Gap Position,
  empty > pronoun gaps (in non-island RCs)
- Interaction of Gap Position and Clause Type:
  $F(1,22)=9.31$, $p=0.006$
  Regardless of Gap Type,
  object gap > subject gap (in island RCs)
- Int. of Gap Position, Gap Type, Clause Type:
  $F(1,22)=18.75$, $p<0.001$
  For empty gaps,
  obj-gap island RCs > subj-gap island RCs

Pairwise comparisons

- Subj-Emp-Island and Subj-Pro-Island: $p=.02$
  Obj-Emp-Island and Obj-Pro-Island: *Not significant*
  RPs improve the acceptability of strong and weak island RCs with subject, but not with object gaps.
- Subj-Pro-Island and Obj-Pro-Island: *Not significant*
  All pairs of pronoun conditions: *Not significant*
  Acceptability of resumptive RCs is uniformly low across conditions.
- All pairs of pronoun conditions across clause types: *Not significant*
  Acceptability of resumptive RCs is uniformly low across clause types.

Discussion

Answering the research questions
- RPs improve the acceptability of subj-gap indefinite RCs formed from weak or strong islands.
  ⇒ Due to decreased acceptability of empty subj-gap RCs
- The acceptability of resumptive indefinite RCs is uniformly low across both gap positions and across all structures tested.
  ⇒ RPs do not repair island violations.

Uniformly low rating of resumptive RCs
- Grammar of English makes available a movement and an anaphoric dependency strategy (Sells 1984, Prince 1990, Ferreira and Swets 2005, Alexopoulou & Keller 2007).
- Hearers initially employ the movement strategy when presented with an RC.
- An unexpected RP results in a uniform penalty across the board.
- Processing resumptive RCs requires strategy shift akin to a garden-path effect.

Conclusion and Future Work

- We replicated the main findings in a 7-point scale experiment.
- In the process of conducting a similar experiment with auditory stimuli to test if resumption is a speech phenomenon
- In the process of designing a self-paced reading study to test the strategy shift hypothesis

Selected References

Alexopoulou & Keller (2007). Locality, cyclicity, and resumption. *Language* 83. **Ferreira & Swets (2005)**. The production and comprehension of resumptive pronouns in relative clause "island" contexts. *Twenty-first century psycholinguistics*, Lawrence Erlbaum. **Heestand et al. (2011)**. Resumption still does not rescue islands. *LI* 42. **Keffala & Goodall (2011)**. Do resumptive pronouns ever rescue illicit gaps in English? CUNY 2011. **Keller et al. (2009)**. Timing accuracy of web experiments: A case study using the WebExp software package. *Behavior Research Methods* 41. **Kroch (1981)**. On the role of resumptive pronouns in amnestying island constraint violations. *CLS* 17. **McDaniel & Cowart (1999)**. Experimental evidence for a minimalist account of English resumptive pronouns. *Cognition* 70.