

Resumptive pronouns hinder sentence comprehension in English

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BACKGROUND

What are resumptive pronouns?

- In relative clauses, arguments appear far away from their verb:

the forbidden fruit that Dan saw her pick
GAP

- Some languages (e.g., Arabic, Gbadi) can also form relative clauses with *resumptive pronouns* (RPs):

the forbidden fruit that Dan saw her pick it
RP

- In structures known as *islands*, gaps are unacceptable and not often produced.^[7]

*the forbidden fruit that Dan wondered if she picked

- Instead, English speakers produce resumptive pronouns in islands.^[4]

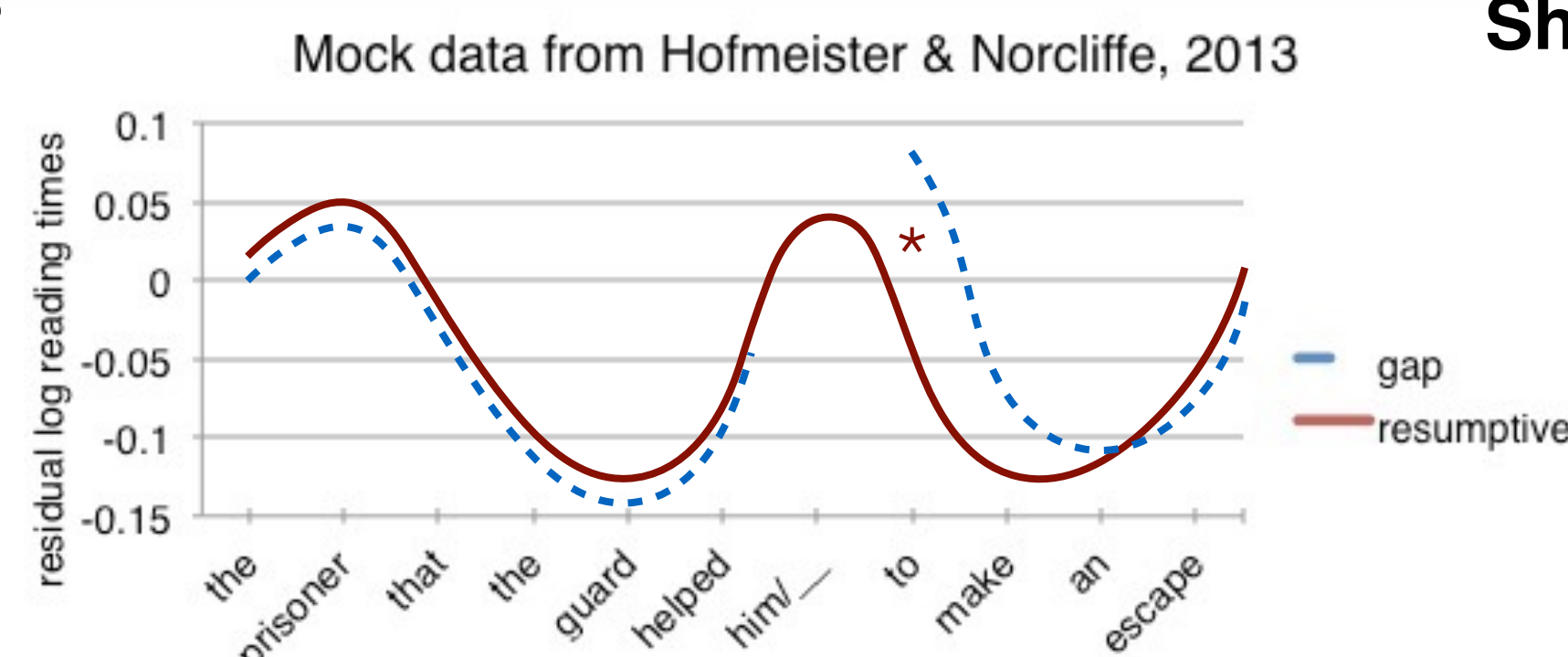
*the forbidden fruit that Dan wondered if she picked it

- But resumptive pronouns aren't acceptable either.^[1,2,4,5]

INTRODUCTION

Why do English speakers produce resumptive pronouns?

- Competing hypotheses:
 - comprehension facilitation (for the listener)^[3,6]
 - production facilitation (for the speaker)^[4]
- Hofmeister & Norcliffe (2013) argue for comprehension:
 - faster reading times following RPs vs. gaps



Shortcomings in previous research

- Comprehension question data not reported
- Stimuli provide pragmatic cues, so speakers can answer comprehension questions without parsing
- Comprehension was measured off-line
- Reading times cannot be interpreted without knowing the reader's parse
- Stimuli were non-islands (where RPs rarely occur)

PRESENT STUDY

Question: Do RPs serve to facilitate comprehension?

- To isolate the contribution of RPs vs. gaps, we:
 - avoid giving pragmatic cues by using animal characters
 - collect fine-grained comprehension data
 - interpret reading times with respect to reader's interpretation
- To improve validity, we:
 - included islands in our stimuli

Stimulus design: 2 x 3

- 2 levels of **STRATEGY**: resumptive pronoun, gap
- 3 levels of **ISLANDHOOD**: non-, Wh-, adjunct

Stimuli

NON-ISLAND	It is Miss Dino that Miss Rabbit said that Mr. Piggy tickled (her) with a feather.
WH-ISLAND	It is Miss Dino that Miss Rabbit wondered whether Mr. Piggy tickled (her) with a feather.
ADJUNCT ISLAND	It is Miss Dino that Miss Rabbit slept while Mr. Piggy tickled (her) with a feather.

EXPERIMENT 1: One-shot pilot

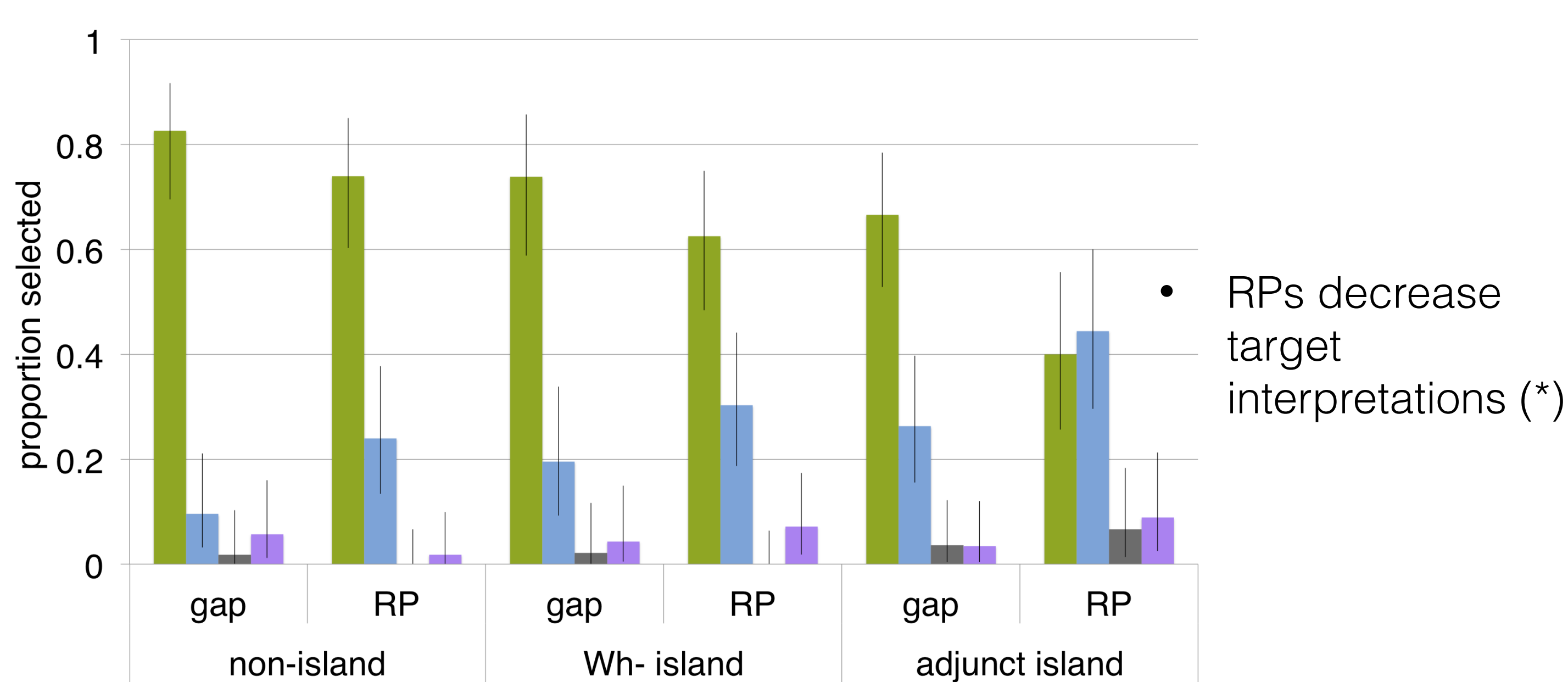
Method

- N=300 Mechanical Turkers saw 1 sentence
- All stimuli in this experiment came from one item set
- Ss clicked on one of 4 images depicting possible interpretations:

Multiple choice options for comprehension questions:

TARGET	Mr. Piggy tickled Miss Dino with a feather.	
LOCAL	Mr. Piggy tickled Miss Rabbit with a feather.	
DANGLE	Mr. Piggy tickled Miss Duckie with a feather.	
INSANE	Miss Rabbit tickled Miss Dino with a feather.	

Results



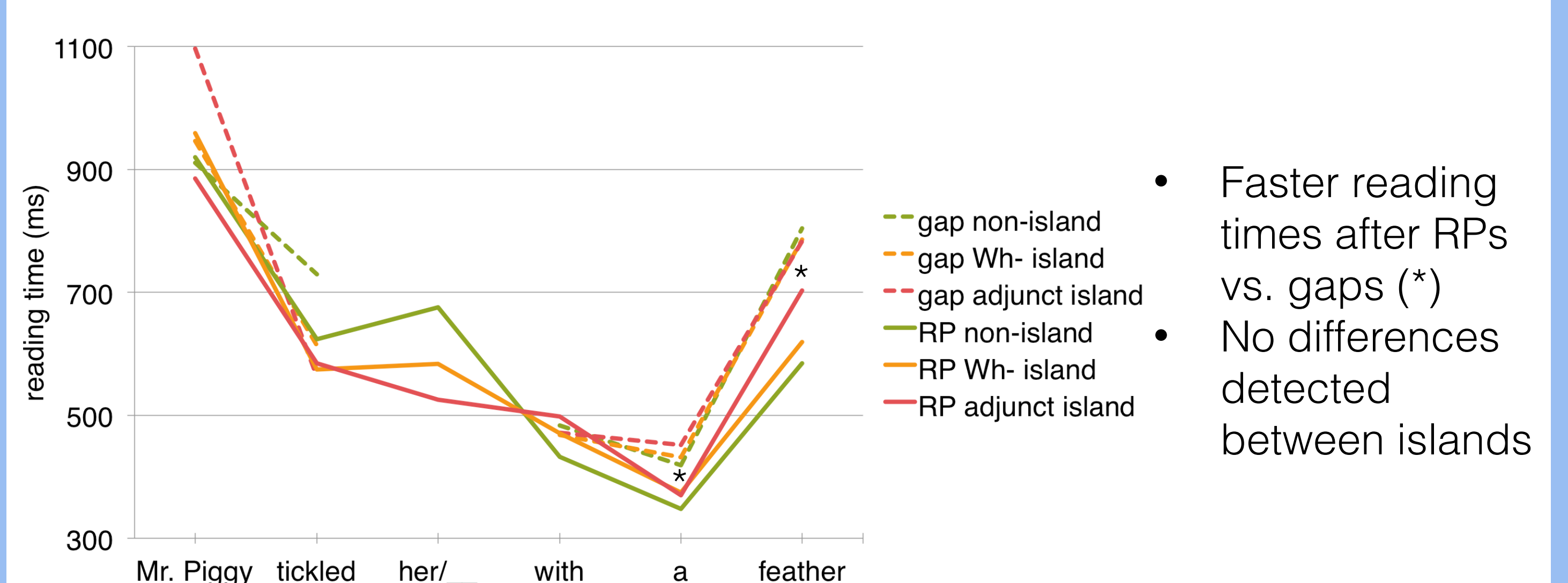
- RPs decrease target interpretations (*)

EXPERIMENT 2: Self-paced reading

Method

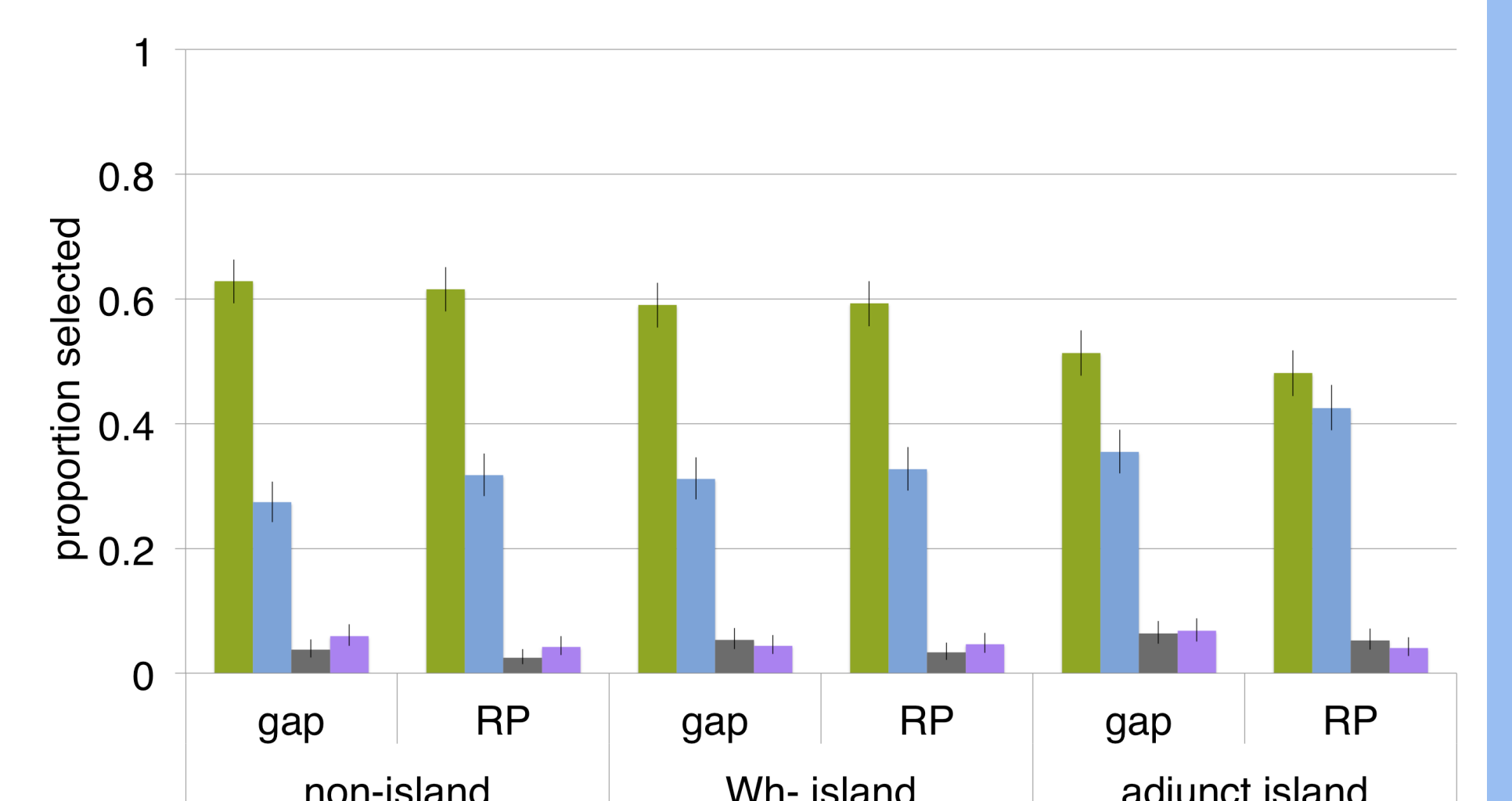
- N=96 Mechanical Turkers, 48 experimental items, 60 fillers
- Self-paced reading paradigm
- Multiple choice comprehension questions (sentences, not images)
- Fillers were designed to prevent heuristic strategies for parsing/ answering comprehension questions

Results



- Faster reading times after RPs vs. gaps (*)
- No differences detected between islands

- RPs increase local interpretations (*)
- Islands decrease target interpretations (*)



DISCUSSION

Resumptive pronouns hinder comprehension

- Like Hofmeister & Norcliffe (2013), we observed faster reading times after RPs vs. gaps...
 - ...but this does not reflect facilitation given that RPs result in more non-target interpretations.

- RPs encourage locally coherent—but globally infelicitous—dependencies.
- True even in island domains, where they are commonly heard & produced.
- Resumptive pronouns are not used to facilitate parsing.
- These findings are consistent with a production account of English resumption.^[4]

REFERENCES

- [1] Alexopoulou & Keller, 2007 [2] Keffala & Goodall, 2012
 [3] Hofmeister & Norcliffe, 2013 [4] Morgan & Wagers, submitted
 [5] Polinsky et al., 2012 [6] Prince, 1980 [7] Ross, 1967

ACKNOWLEDGMENTS

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