Comprehending complex subject-verb dependencies: a matter of restriction costs?
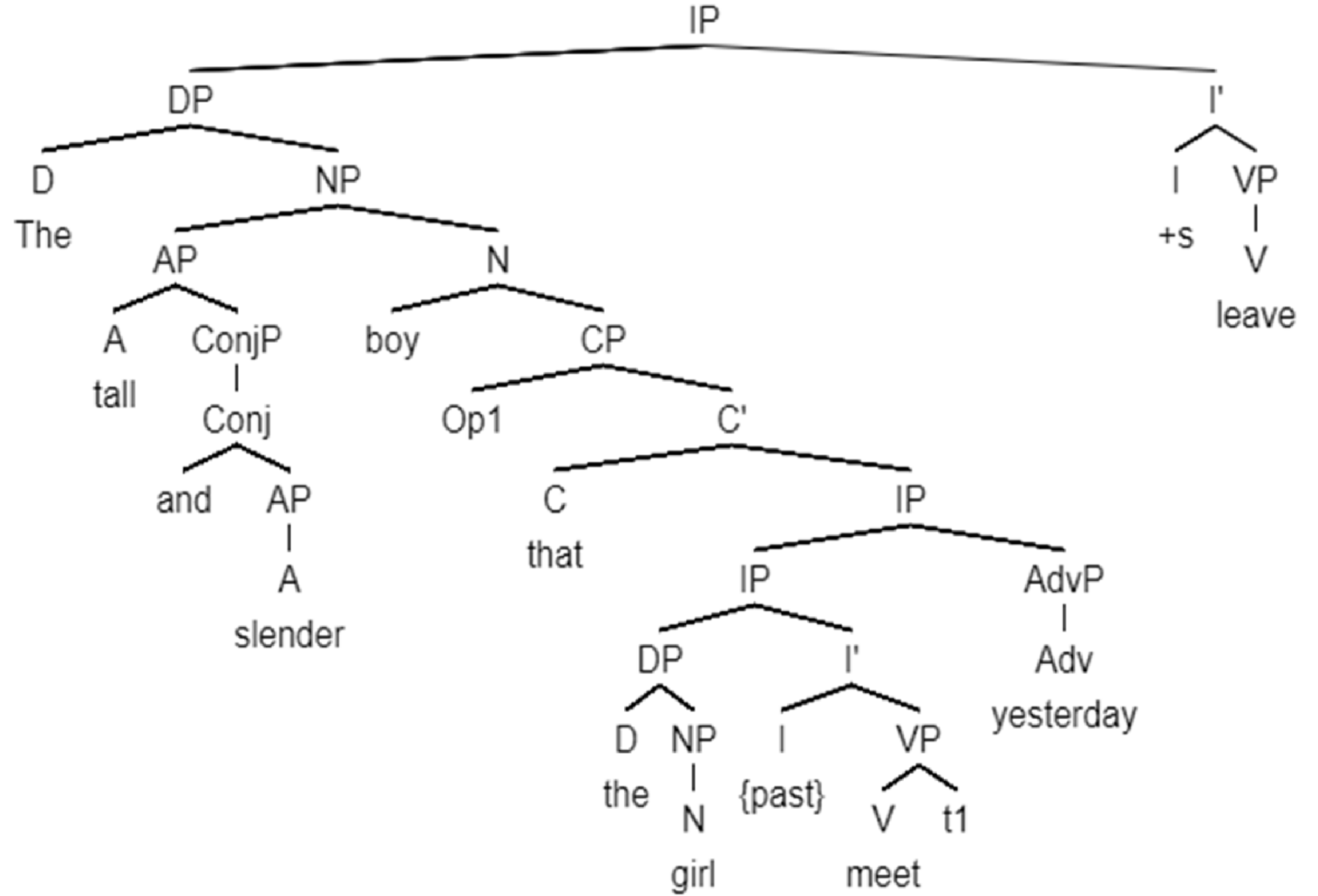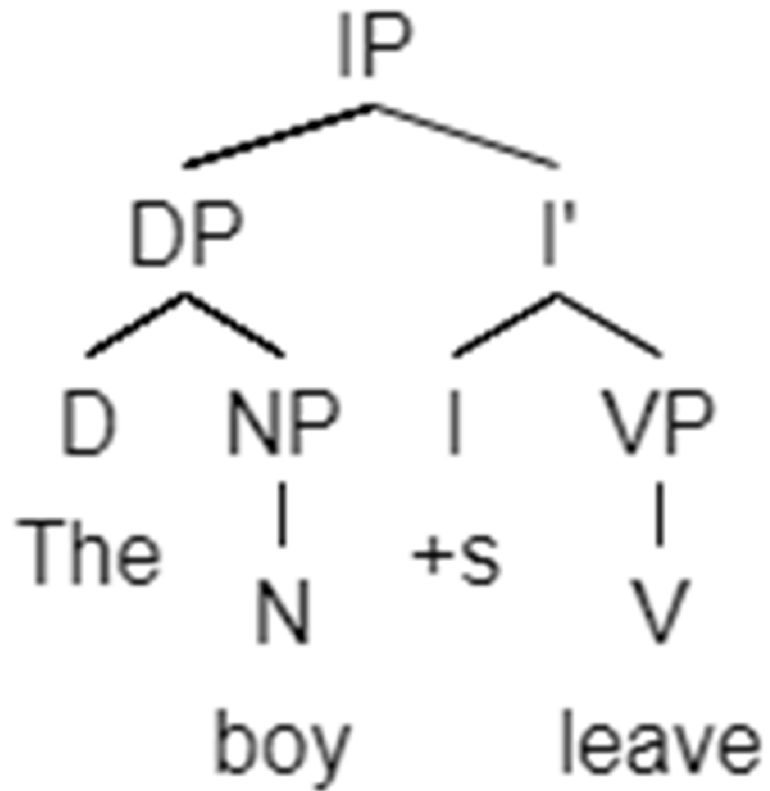
CATINCA BUCIULEAC, UCL

Complexity and distance

Current accounts

DEPENDENCY LOCALITY THEORY	CUE-BASED RETRIEVAL
➢Two main components: ▪Storage costs ▪Integration costs	➢Similarity-based interference in retrieval (Gordon, 2001) ▪Syntactic (Grillo, 2009) ▪Semantic (Van Dyke and McElree, 2007)

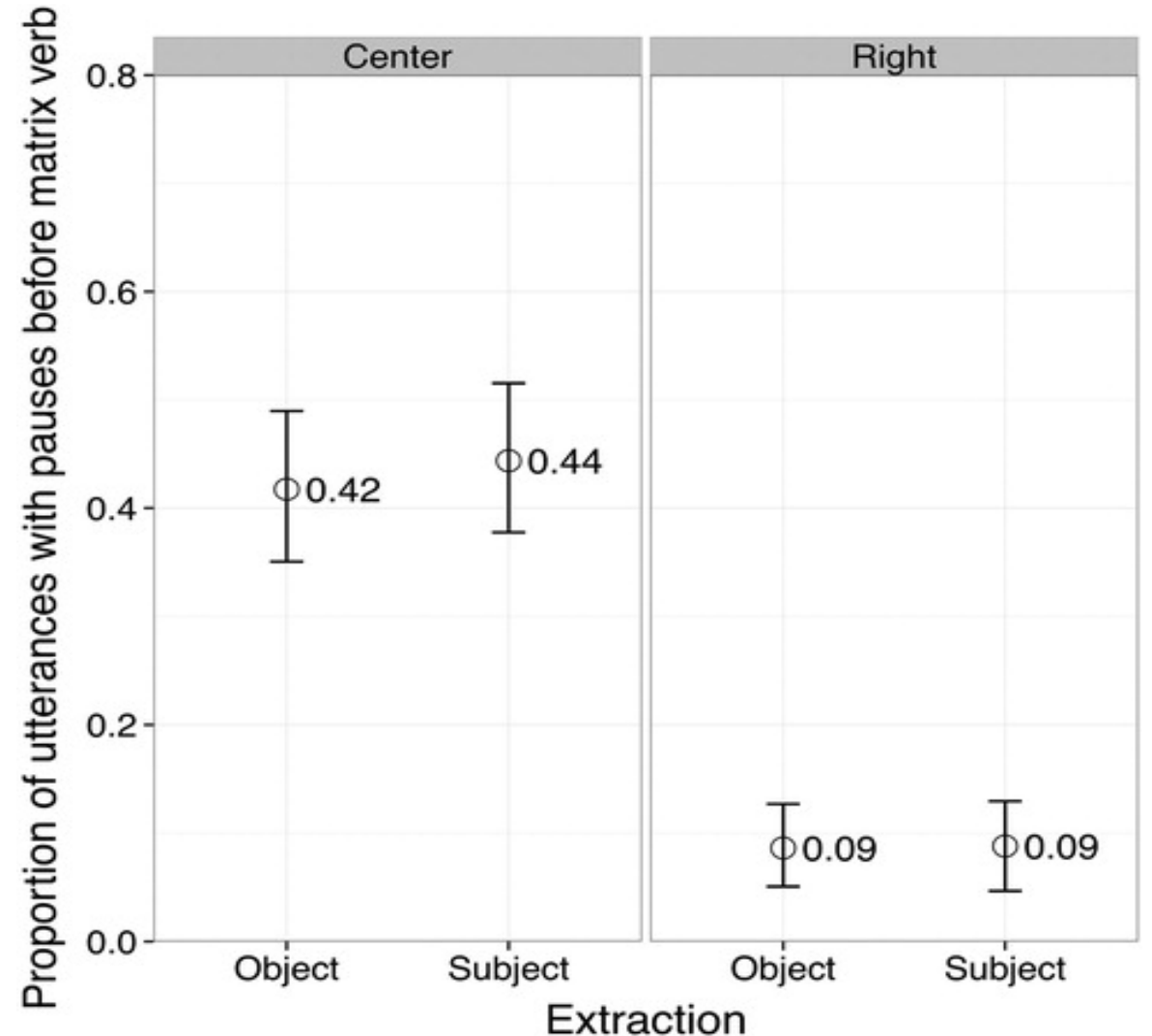**The reporter** [who _ attacked the senator on Tuesday] ignored the president

_____

The president ignored **the reporter** [who the senator attacked _ on Tuesday]

_____

The president ignored **the reporter** [who _ attacked the senator on Tuesday]

_____

The reporter [who the senator attacked _ on Tuesday] ignored the president

_____

Santi et al, 2018

➢**Comprehension and production in relative clause processing**

➢Manipulated embedding and extraction

➢Comprehension: self-paced reading experiment
  ➢longer times at main verb, no interaction

➢**Production: planned production**
  ➢**Increase in pauses *right before verb***
  ➢**Constituent restriction**

Linking production and comprehension

➤ Comprehension: main verb the first point where the parser realises previous constituent completed

➤ Prosodic breaks in production: Interpretive Domain Hypothesis (Schafer, 1997)

  ➤ Computing of constituent closure as source of difficulty

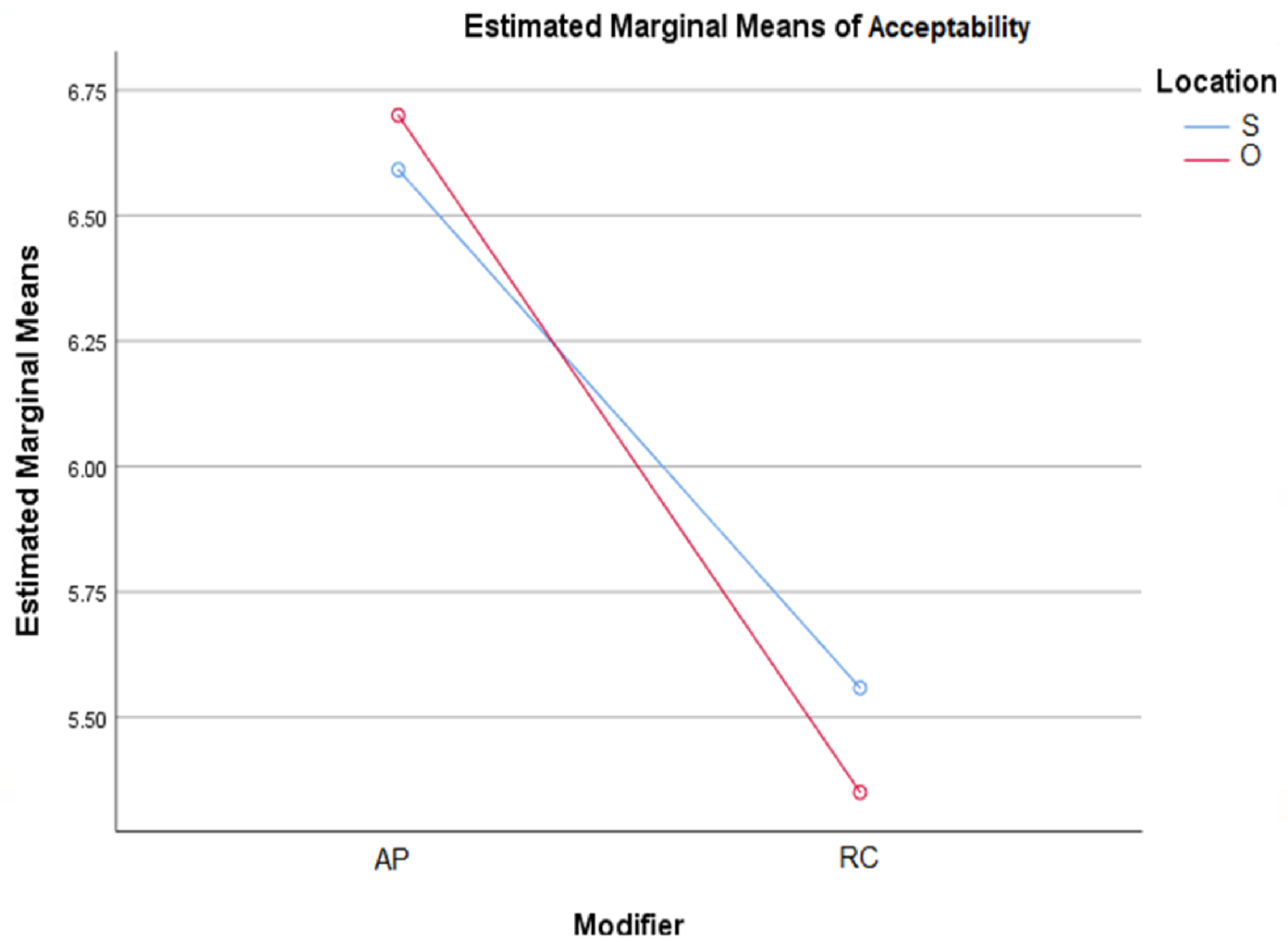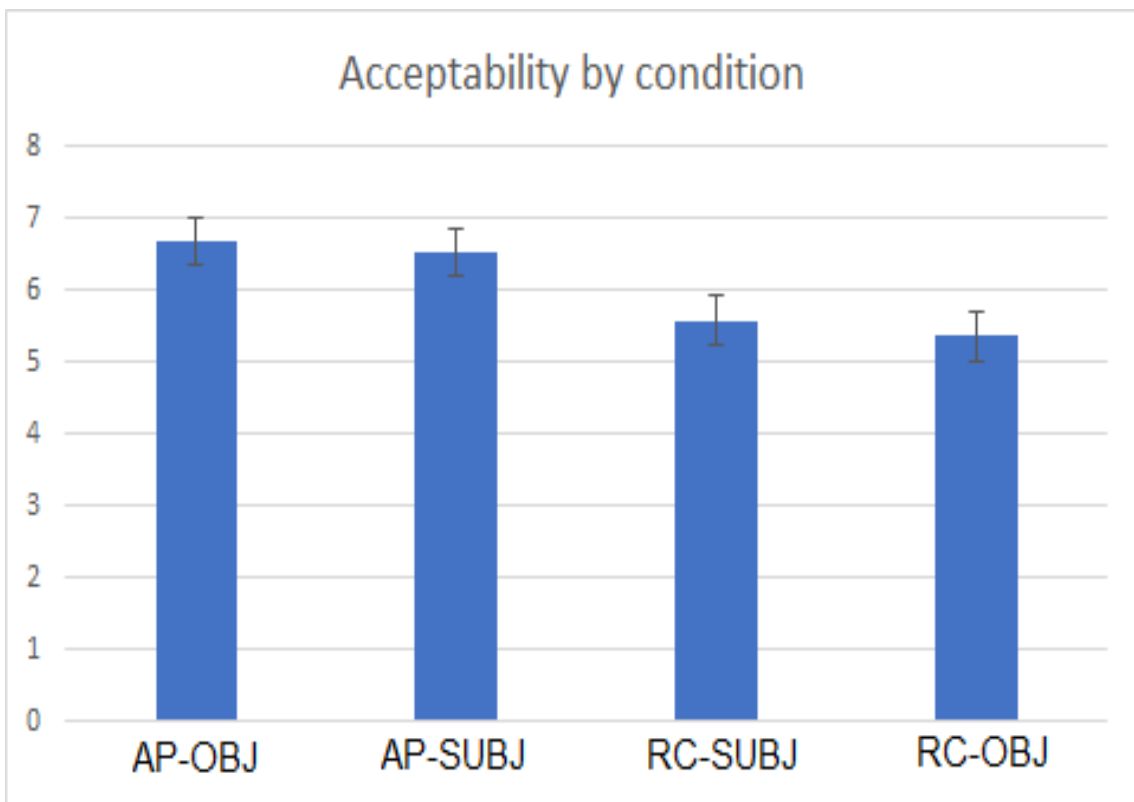➤ Silent prosody (Fodor's IPH, 2002)

Current study

➤ Manipulating linear distance through modifier type

➤ Pilot acceptability study
  ▪ 32 items + 64 fillers
  ▪ 1-7 scale rating + yes/no comprehension questions

➤ 15 final Participants (SONA, Gorilla)

Modifier Location	AP	RC
Subject	The beautiful and kind girl helped the boy.	The girl that my sister met at work helped the boy.
Object	The girl helped the beautiful and kind boy.	The girl helped the boy that my sister met at work.

Predictions

➢**Interaction of greatest importance:**

➢Memory-based accounts: interaction present, with RC-modified subjects most difficult

➢Effect of location:

➢Restriction-based accounts: no effect of location, as restriction would be computed regardless

Results

Discussion

While current results tentative:

➢ **Interaction not significant: incompatible with memory-based accounts, unlike with restriction accounts**

➢ No effect of location: compatible with restriction accounts, replicates Santi et al (2018)

➢ **Potential comprehension-production similarities in S-V**

➢ Effect of modifier not surprising
   ▪ Offline measure

Future research

➢ Current study:
- Pilot, preliminary measure
- Offline
- Does not identify exact source of difficulty

➢ Suggestion: self-paced reading experiment
- Examining times at main verb: do both modifiers cause longer reading times?
- Online measure: further, more solid evidence

Conclusions

➢Current comprehension findings compatible with Santi et al (2018) production data

➢Memory-based accounts less suited for S-V

➢Future research needed for more detailed explanations and accounts