

Storage and Computation in Syntax: Evidence from relative clause priming

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July 21, 2011

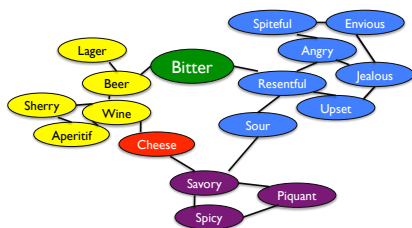
Research question

- **What is the nature of syntactic representations?**
 - **What is stored vs. what is computed on-the-fly?**
 - Syntactic priming: A way to investigate this question
- Experiment: Two web-based studies (replicating previous findings from lab studies)

The lexicon

Definition of *lexicon*: "the vocabulary of a language, an individual speaker or group of speakers, or a subject"

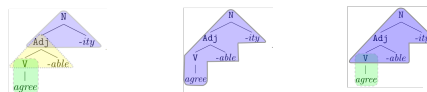
Words



The lexicon

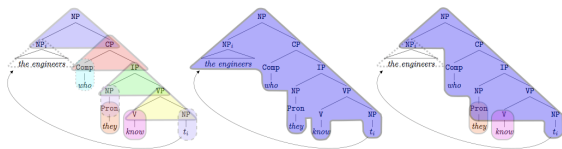
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Morphology



The lexicon

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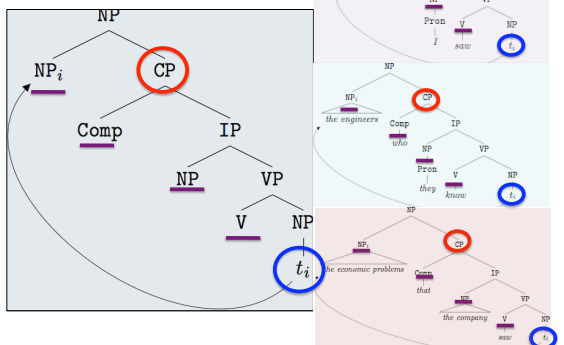


Syntax?

Research Question

- Which syntactic representations can be stored in long-term memory?
- Test case: object-extracted relative clauses (ORCs)

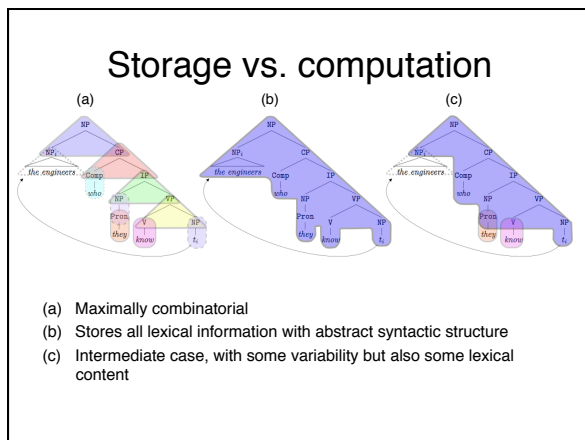
ORCs



Object relative clauses

Exhibit large production frequency differences dependent upon

- The type of noun in the embedded subject position
Embedded pronouns > embedded definite NPs (Roland et al., 2007)
- The type of relative pronoun (e.g. *that* vs. *who*)
That > *who*



Investigating syntactic representations

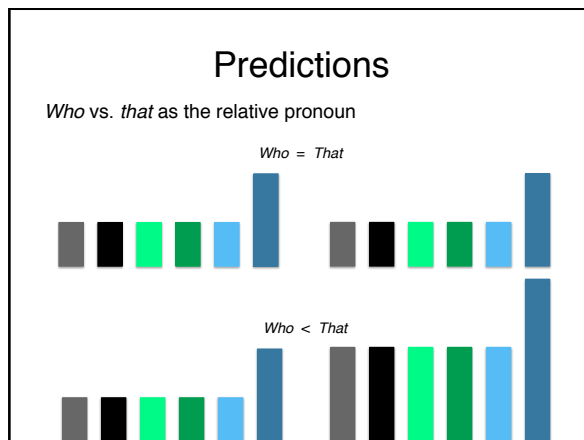
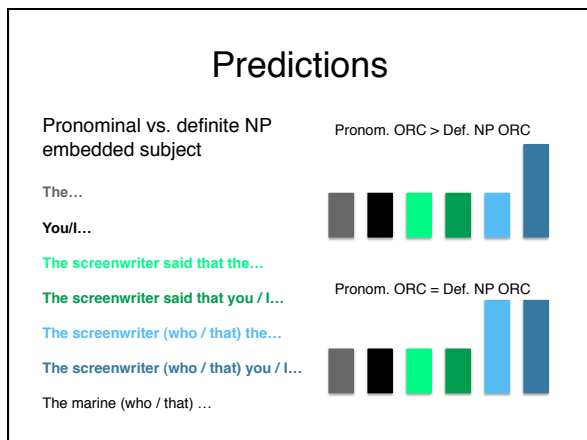
- **Syntactic priming:** Speakers are more likely to produce a given syntactic structure if they have just produced that same syntactic structure.
- Bock, 1986: Showed this was the case for short syntactic variants (Give the ball to the girl vs. Give the girl the ball)
- Scheepers, 2003: Showed this for larger, more abstract chunks of syntax.
- Current work: look at frequent vs. infrequent types of ORCs to investigate whether common lexical items may be stored directly with abstract structures.
- Two comparisons:
 - the relative pronoun (*who* < *that*)
 - the type of embedded NP (definite NPs < **personal pronouns**) (*you* and *I*)

Experiment

- Two-part experiment:
 - Part 1 (*who* as the relative pronoun): 111 participants
 - Part 2 (*that* as the relative pronoun): 109 participants
- Experiment run on Amazon.com's Mechanical Turk
- Sentence completion task; prime-target pairs interleaved with fillers

Experiment

Prime types:	
Definite-NP baseline	The...
Pronominal baseline	You/I...
Definite-NP complement clause	The screenwriter said that the...
Pronominal complement clause	The screenwriter said that you / I...
Definite NP ORC	The screenwriter (who / that) the...
Pronominal ORC	The screenwriter (who / that) you / I...
Targets (choice of RC type):	The marine (who / that) ...



Method

Sentence completion task

The cat didn't like.....

The entrance to the lab was.....

The nurse assisted the child because.....

The supplier knew that.....

The screenwriter who the.....

The marine who.....

The coach talked to the player because.....

The spy thought that.....

The shopper enraged the saleswoman because.....

The mosquito.....

The bread in the supermarket.....

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Sample completions

Def. NP Baseline: The... donor saved the dying child's life.

Target: The manicurist who... did my nails was talkative.

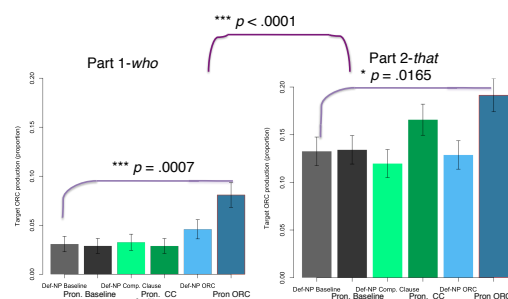
Pronom. ORC: The valet who you... gave your car to was very helpful.

Target: The servant who... cleaned the house was very nice.

Def. NP ORC: The guru who the... actress relied on was a fraud.

Target: The hostage who... had been released went home to his family.

Results



Results: Summary

Do we see priming of ORCs?	✓
Do we see more priming for pronominal ORCs than definite-NP ORCs?	✓
Do we see more priming for that vs. who as the relative pronoun?	✓
Do we see increased production of ORCs to other complicated structures w/ pronouns?	✗

Summary

- First evidence for priming of object relative clauses, which are complex and abstract syntactic structures
- The priming is sensitive to type of NP in embedded subject position and the relative pronoun used
- **First evidence that *specific lexical items* (e.g. *that* or *you*) are stored together with abstract structure**

