Announcements

- **Assignment #5** posted and is due on Friday April 17 by e-mail at 2pm.
- There will be only 7 assignments (not 8), but more points on each of the last three.
- Guidelines for the paper course requirement.
- Presentations progress?

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Things a syntax student should not do

**Argument structure matters!**

Where are we?

- RCD B11 duh!
- Very funny!
- The fundamental notion in syntax is hierarchical structure, which reflects constituency relations in a sentence.
- Our first attempt at a grammar of sentence structure led us to phrase structure rules. The ones on the next slide.

Phrase structure grammar: Take 1

63) a) CP → (C) TP
b) TP → [NP/CP] (T) VP
d) NP → (D) (AdjP+) N (PP+) (CP)
e) PP → P (NP)
f) AdjP → (AdvP) Adj
g) AdvP → (AdvP) Adv
h) XP → XP conj XP
i) X → X conj X
Phrase structure grammar: Take 2

• Due to conceptual and empirical problems (one-replacement and do-so-too structures), we had to revise our theory of phrase structure.
• The alternative: X-bar Theory.

Phrase structure grammar: Take 2

- NP → (D) N'
- N' → (AdjP) N' or N' (PP)
- VP → V'
- V' → (AdvP) V' or V' (AdvP) or V' (PP)
- AdjP → Adj'
- Adj' → (AdvP) Adj'
- Adj' → Adj (PP)
- PP → P'
- P' → (AdvP) P' or P' (PP)
- P' → P (NP)

Phrase structure grammar: Take 2

- While empirically far more adequate (e.g., it explained the one-replacement and the do-so-too facts), it still looked a bit redundant. Can we do better?
- Yes.
- Every phrase in natural language has the same internal structure, as on the next slide.

Phrase structure grammar: Take 3

- Why is that better?
- First, it captures cross-categorial similarities between NPs, VPs, PPs, AdjPs, and AdvPs. And today we will extend the same X-bar schema to functional categories such as D, T, and C.
- Second, it allows us to differentiate between constituents that look identical on the surface but are actually different in their syntactic behavior (e.g., complement PPs vs. adjunct PPs).

Complements vs. adjuncts

- a student [of syntax]
- a student [from Middlebury]

<table>
<thead>
<tr>
<th>Complements</th>
<th>Adjuncts</th>
</tr>
</thead>
<tbody>
<tr>
<td>only 1</td>
<td>multiple allowed</td>
</tr>
<tr>
<td>closest to head</td>
<td>may be separated from head</td>
</tr>
<tr>
<td>cannot be reordered</td>
<td>can be reordered</td>
</tr>
<tr>
<td>conjoin with complements</td>
<td>conjoin with adjuncts</td>
</tr>
<tr>
<td>*[one]+complement</td>
<td>*[one]+adjunct</td>
</tr>
</tbody>
</table>
I loved the policeman intensely with all my heart

- Only 1 complement
  - "I loved the policeman the fireman"
- Closeness to V and reordering
  - I loved the policeman with all my heart intensely
  - I loved the policeman intensively with all my heart
  - "I loved intensively the policeman with all my heart"
  - "I loved intensively with all my heart the policeman"
- Conjunction
  - I loved the policeman and the fireman
  - I loved the policeman intensely and with all my heart
  - "I loved the policeman and intensely"

Do so replacement

Susan loved the policemen intensely with all her heart but/and
  - Mary did so with her brain!
  - Mary did so mildly with her brain
  - "Mary did so the fireman"

Summary

- Specifier: sister to X', daughter of XP
- Adjunct: sister to X', daughter of X'
- Complement: sister to X, daughter of X'
- X-bar theory predicts differences in behavior between complements and adjuncts
  - only one complement, multiple adjuncts
  - complement must be closest to head
  - adjuncts can be reordered
  - conjunction
  - "One/did so + complement"

Extending X-bar Theory to functional categories

- Our theory of phrase structure is much better now than before, but we still have some issues to take care of before we announce victory.
- First, CP and TP seem to have optional heads, which is not a good asymmetry in the system.
- Second, D seems to be the only specifier we’ve come across, which is also not a great asymmetry to have in the system.

D just doesn’t fit

- Specifier Rule: XP → (YP) X’

  - D is clearly a head not a phrase. So, it cannot be a specifier if our specifier rule is correct.

  - Well, if it looks like a head, then it’s a head.
  - From NP to DP.
The DP hypothesis

Abney (1987)

Evidence for DP: English ’s Genitives

- The man’s hat
- The morpheme ’s is not a suffix:
  - [The man standing over there]’s hat
  - [The dancer from New York]’s shoes
- ’s attaches to phrases.

Evidence for DP: English ’s Genitives

- ’s is in complementary distribution with determiners:
  - [The man standing over there]’s coat
  - *The man standing over there’s the coat
- Complementary distribution typically means: two items are examples of the same thing!
- Conclusion: ’s is a D.

Evidence for DP: English ’s Genitives

What about NPs without determiners

- What about proper nouns such as: —John
- These are also DPs, headed by a null D. Notice that in other languages proper nouns can have overt determiners (e.g., Greek).
- Having a null D also helps explain why such nouns are definite in meaning.
Two more categories to take care of

- TP → NP (T) VP
- CP → (C) TP
- What are the problems here?
- For one thing, the heads T and C are marked as optional, which is problematic.
- Also, the rule for TP is tertiary. Binary branching seems to work for all categories, so we should expect it to apply to TP as well.

TP

- It is easy to change the TP rule to the X'-schema:
  - TP → NP T'
  - T' → T VP

What’s in T?

- We know ‘will’ is in T in John will dance. But what is in T in John danced?

  - Modals and tense markers are both in T. Evidence: They are in complementary distribution:
    - I will dance. I can dance.
    - I danced. I danced.
    - *I will danced. *I can danced.
    - But: I have danced. (wait for Chapter 9)

How about CP?

- In the X'-schema, the CP rule would look like this:
  - CP → (YP) C'
  - C' → C TP
• So far, we talked about C in embedded clauses only:
  John said \[CP \text{ that } \ldots\]
  Mary was wondering \[CP \text{ if } \ldots\]
• But is there a reason to assume there is a C in main clauses as well?
• Yes. Some languages mark the type of a sentence using specific morphemes.

Classical Arabic emphatic statements
   • \(\text{?inna Zayd-an } \text{ haDara}\)
   \(\text{Zayd-nom arrived}\)
   ‘Zayd arrived.’

Irish questions
   • \(\text{Ar fhag Seán Q } \text{ leave John}\)
   ‘Did John leave?’

English questions: Will you see Mary?
   \(\text{Evidence for } [+Q] \text{ Cs in English}\)
   • Interrogative complementizes such as if/whether are in complementary distribution with inverted auxiliaries:
   \(\text{I don’t know if John will see Mary.}\)
   \(\text{*I don’t know if will John see Mary.}\)
   Also, semantically, we need a C in every clause because C marks the so-called illocutionary force of a sentence: Is it a statement, a question, or command?
Evidence for a null C in non-questions

- Reminder: You can only coordinate constituents of the same category.
- Now, consider:
  You can lead a horse to water but can you make him drink?

Specifiers of CP

- Is the specifier of CP needed in sentence structure at all?
- Definitely. We’ll talk about this in detail in Chapter 12, but for now, it may help to state that this is the position that wh-words such as who, what, why, etc., occupy in English questions.

Specifiers

- Specifiers:
  - Possessors are specifiers of DPs.
  - Subjects are specifiers of TPs.
  - Wh-words are specifiers of CPs.
Elegant and empirically superior

- Our theory of phrase structure is much nicer and completer now than before.
- The X'-schema applies to all categories in syntax: NP, VP, AdjP, AdvP, PP, DP, TP, and CP.
- Not only is this theory more conceptually appealing and elegant; it is empirically superior. This is a dream come true 😊 (well at least until the next counterexample forces us to improve our theory even further).

Next class agenda

- Introducing Theta Theory. Start reading chapter 8.

Acknowledgement

- I borrowed freely from Andrew Carnie’s slides.