

February 3, 2004

Chapter 3.2–3.6

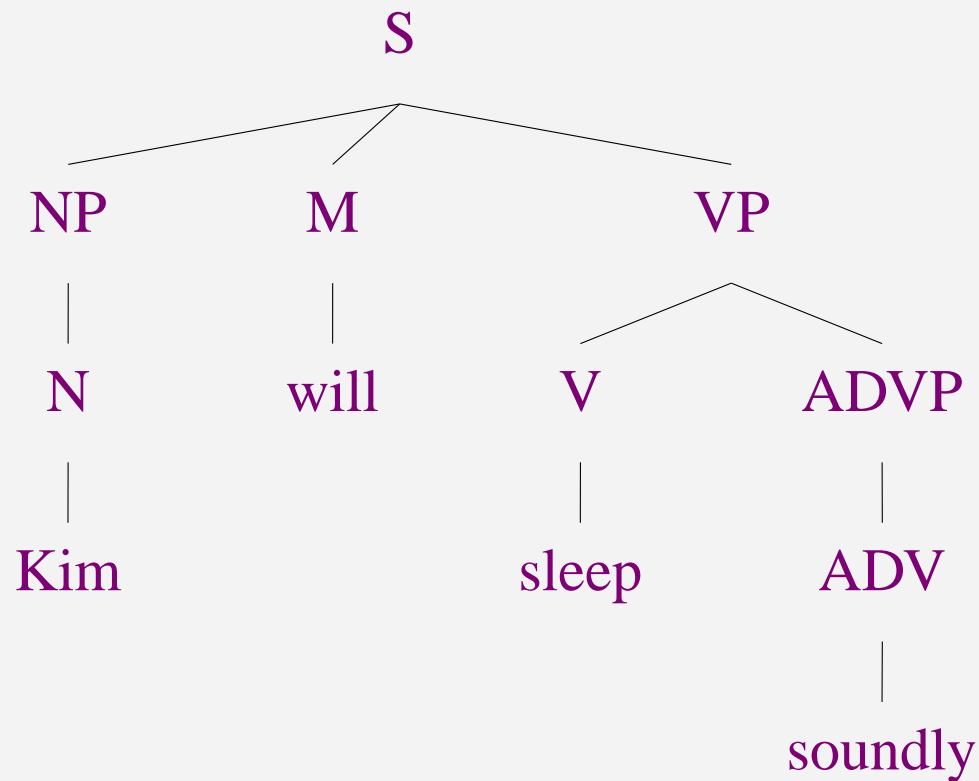
*Constraints on P-markers,
Generating P-markers*

Overview

- Some words on the conference
- Review
- ‘No crossing branches’
- Phrase structure rules
- Recursion
- Some further categories
- Next time: An eye-tracking experiment

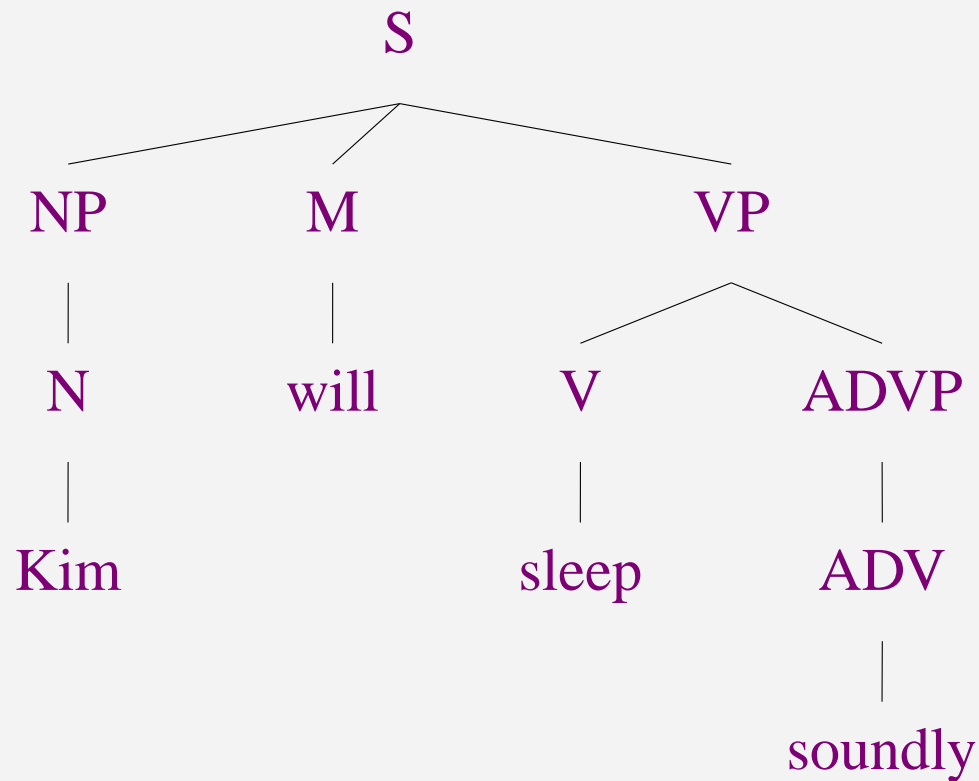
Review: Precedence

- Which nodes precede VP? Immediately precede?
- Why is precedence relevant?



Review: Dominance

- Which nodes dominate V? Immediately dominate?
- Why is dominance relevant?

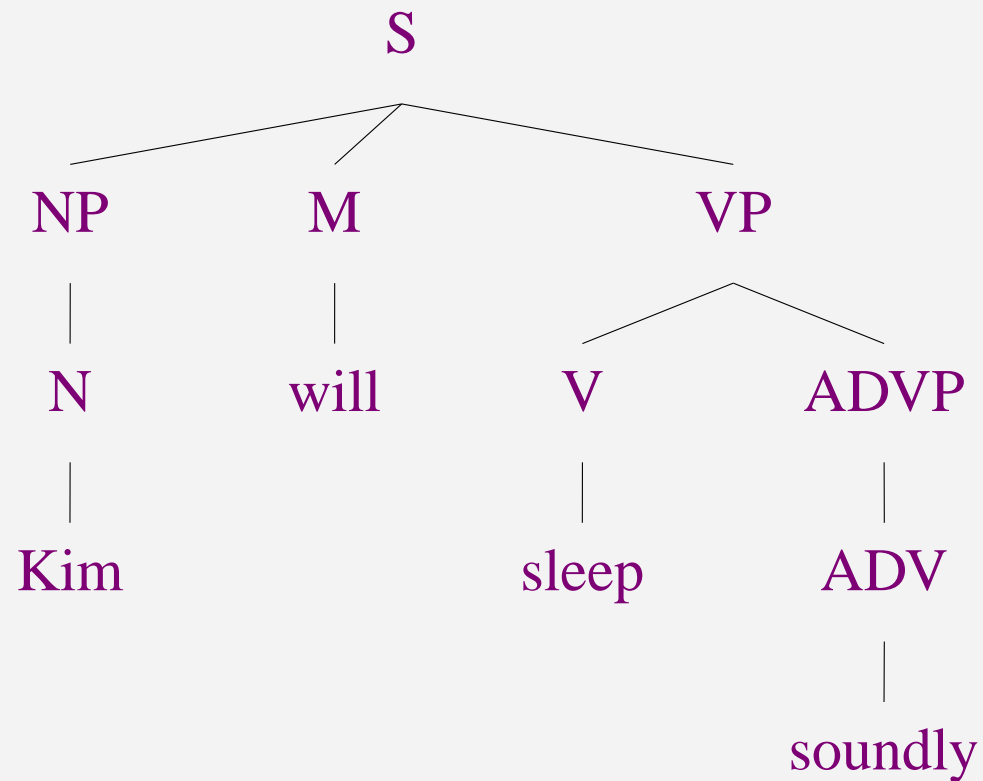


Review: Kinship

- How do we define *sister* nodes?
- How do we define *mother/daughter* nodes?
- How do we define *granddaughter, niece* etc?

Review: C-command

- Which nodes c-command ADV?
- Why is c-command relevant?



No crossing branches

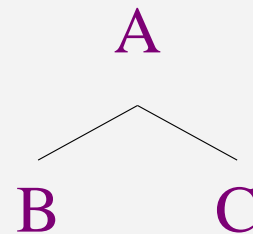
- ‘If one node X precedes another node Y , then X and all descendants of X must precede Y and all descendants of Y . (A is a *descendant* of B iff A is dominated by B.)’
(p.121)
- Equivalently: Phrase structure trees are directed acyclic graphs, with a linear ordering defined on all sister nodes. The words of a sentence represented by a tree must appear in the order defined by that linear ordering.
- How does this simplify the task of the language learner?
- Why might one be tempted to posit crossing branches?

Phrase structure rules (1/3)

- An *explanatorily adequate* grammar:
 - licenses some strings but not others
 - assigns a structure to every string it licenses
- In this model (and many others) structures are licensed by phrase structure rules.

Phrase structure rules (2/3)

- Form: $A \rightarrow B C$
- Licenses subtrees of this form:



- Specify both immediate dominance and immediate precedence.
- Can be read as: An A can consist of a B followed by a C.
- Or: A B followed by a C can constitute an A.
- (B and C may then consist of various things.)
- Why use ‘can’ instead of ‘must’ in those readings?

Phrase structure rules (3/3)

- Abbreviations:

- Optional elements in parentheses:

$NP \rightarrow (D) N$

- Alternative elements grouped by curly braces:

$VP \rightarrow V \left\{ \begin{array}{l} PP \\ NP \end{array} \right.$

Creativity of language

- Phrase structure rules define abstract structures for sentences.
- Those abstract structures can correspond to many sentences, depending on which lexical items fill in the leaves of the tree.
- This captures some of the creativity of language.
- Examples?
- What's missing?

Recursion

- Recursive rules capture the fact that any given sentence can be arbitrarily long.
- Individual rules can be recursive: $A \rightarrow A B$
- Groups of rules can be recursive:
 $A \rightarrow B C$
 $B \rightarrow D E$
 $D \rightarrow A F$
- What are some examples of recursion in English?
- What kind of rules should we capture them with?

Relationship to processing

- What do people do in their heads when they create a sentence to say?
- Phrase structure rules can be applied ‘top-down’ (starting from S, say) or ‘bottom-up’ (starting from the leaves).
- This doesn’t mean the model claims that’s what people are doing while speaking or listening.
- A generative grammar is best seen as a declarative statement of what’s admissible in the language.
- How exactly that knowledge is deployed is a question for a theory of performance.

Some further categories

- Particle: He put his hat *on*.
- Subordinating conjunction: The wind blew *until* he put his hat on.
- Are particles and subordinating conjunctions adverbs?

Particles and sub. conjs. as prepositions (1/2)

- I haven't seen him [*since the party*]/[*since the party began*]/[*since*].
- I'd never met her [*before the party*]/[*before you held your party*]/[*before*].
- You can have some chocolate [*after your dinner*]/[*after you've eaten your dinner*]/[*after*].
- cf: I know [*the answer*]/[*you are innocent*]/ ϕ .

Particles and sub. conjs. as prepositions (2/2)

- He's been difficult *ever* since (the party (began)).
- He'd been feeling unwell *a couple of weeks* before (his collapse/he collapsed).
- There was a drugs raid *immediately* after (the party (began)).

Subcategorization of prepositions

- S/NP complement only:

He waited until her departure/until she left/*until.

- NP complement only:

He left during the party/*during the party was still going on/*during.

- S complement only:

He collapsed while the party was in full swing/*while the party/*while.

- NB: Not unlike verbs.

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