LIN7209 – Syntax

Theory and Architecture

Adèle Hénot-Mortier (based on David's original materials)

23/09/2025

Queen Mary University of London

Logistics at a glance

- Adèle (she/her, a.mortier@qmul.ac.uk, ArtsOne 113).
- Tuesday 9-11, ArtsTwo 3.17.
- Course updated regularly on QMPlus.
- Office hours Monday and Friday 13-14 starting 29/09.

Readings

- The **background reading** is David's *Core Syntax*. I encourage you to read the relevant Chapter(s) (give in syllabus) prior to class.
- Each week has a **[main reading]** (see syllabus). We'll go through it in class and will serve as the backbone for the discussion. Try to read it both before and after class.
- **(Extra reading)** can be done whenever, but ideally should be done by the end of the class.
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- You'll have to write up a portion of the **data analysis** exercises we do in class in the form of a short linguistics paper (∼4000 words).
- Criteria for assessment:
  - **professional presentation** (examples, glosses, citation, bibliography etc.);
  - **clear argumentation** connecting data, analysis and theory.
- It is QMUL policy to penalize **late submissions** 5 marks per day. In addition, submissions received more than 7 days after the due date will receive a mark of 0.
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Introduction

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(2) Colorless green ideas sleep furiously.

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- How do we assign a meaning to these sequences of words?

- A "bruteforce" solution: syntax encodes pairs of form-meaning mappings.
- Immediate issue: that would require a lot of memory space, in fact an **infinite amount of space**, given that sentences can be arbitrarily long, so there's an infinite number of them.

(3) Jo told Ed that Al believes that … that Lu is sick.

A big picture question

- What should a theory of syntax look like then?
- Question *a priori* independent from a specific syntactic framework.
- At the most basic level, Syntax must involve a number of **primitives**, but also a number of **productive rules/principles**, allowing us to generate an infinite number of outputs with finite means (**generative** syntax).
- Core ingredients we will review today:
  - Constituent structure;
  - Argument structure;
  - Dependency.
- We'll also quickly review how generative syntax built on these ingredients and evolved into the so-called Minimalist framework.
- Before diving this, let's further define **what really falls into Syntax**.

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Syntax and processing

Agreement attraction

(4) $\overset{?}{*}$ The cat (subject) near the windows (attractor) **have** bitten the dog.

- Sometimes, non-subjects linearly intervene between the subject and the verb, and make us produce the "wrong" agreement. This is called **agreement attraction**.
- Should we consider (4) partially grammatical then?
- Not really: after careful consideration, most if not all speakers would agree that (4) deserves a *.
- Additionally, kids are exposed to such sentences but do not overproduce them.
- The *processing* of two linearly adjacent nominals can be confusing when determining agreement–this appears independent from Syntax.

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- In (5), we want to understand *The old man* as a noun phrase (≃*the man that is old*), rather than a noun phrase plus a verb (≃*the old people operate…*).
- This is because *old* is **more likely** to be used as an adjective as opposed to a noun, and *man*, as a noun as opposed to a verb. Consequently, the structure we first infer is different from the one that eventually makes sense.
- The continuation *while the young…* helps disambiguate in favor of the unlikely yet consistent interpretation.

Garden-pathing (II)

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- Should we consider (5) and (6) partially ungrammatical then?
- Not really: syntactically innocuous substitutions drastically improve these sentences!

(5′) The **elderly** man the boat.

(6′) The woman **given** the sandwich from the kitchen tripped.

Ungrammaticality vs. processing difficulties

- Agreement attraction and garden-path effects outline the fact that sentences can “feel” off due to processing difficulties, rooted in our idea of what’s likely (**statistics**).
- Usually, these difficulties are overcome after more careful consideration, or by changing some superficial aspects of the sentence to reduce ambiguities.
- A sentence like (7) cannot be “rescued” that way.

(7) * Herself likes Jo.

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Syntax and the Parser

- We need to distinguish the **syntactic module** from the processing module (the **parser**).
- The parser uses the rules provided by Syntax, but also extra heuristics (e.g. use the most likely rule at any given point) to make processing faster.
- Sentences can be ungrammatical but wrongly accepted/produced by the parser (**attraction**), or grammatical but rejected by the parser (**garden-pathing**).
- This relates to the standard difference between syntactic **competence** (our abstract, internal capacity to produce any sentence), and **performance** (what we actually produce, given our cognitive limitations).
- Let's now review a few core components of Syntax, starting with constituent structure.

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Constituency

Evidence 1: Basic word order

- In English, many sentences follow the SVO pattern.

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- Easily refuted: passives swap agent and patient, yet mean roughly the same thing as their active counterparts!

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- Syntax must encode something about how the different elements of a sentence **interact** beyond linear order.

Extension: verb-second

- Many Germanic languages but also Ingush (Northeast Caucasian) and O'odham (Uto-Aztecan) are verb-second (V2). From Yiddish (V2 in main and embedded clauses):

(9) Ikh **hob** gezen mitvokh, az ikh **vel** nit kenen kumen donershtik.
I have seen Wednesday that I will not can come Thursday
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(10) Mitvokh **hob** ikh gezen, az donershtik **vel** ikh nit kenen kumen.
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(12) a. The cat [that **is** lying on the mat] **has** bitten the dog.
b. * **Is** the cat [that lying on the mat] has bitten the dog?
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- Syntax must encode what it means to be the “main” auxiliary–some **hierarchy**.

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- Extra evidence that syntax must encode some hierarchy.

Encoding hierarchy via constituent structure

- A straightforward implementation of hierarchical relations between words is **constituent structure**.
- Word or groups of words are **bracketed** to form constituents. In our case, a well-formed bracketing is s.t.:
  - [*w*] with *w* a word is a well-formed constituent;
  - [*C*] is well formed iff *C* is a concatenation of one or more well-formed constituents.
- This is an inductive definition: it applies to arbitrarily long sentences.

(14) [[[The][[cat][[near][[the][windows]]]]][[has][[bitten][[the][dog]]]]]

- This gets heavy real quick so obvious/irrelevant brackets may be dropped.
- Brackets may be **labeled** (e.g. [$_{DP}$ the windows]), but some theories choose not to encode this as part of constituent structure, instead encoding this kind of information if the words.

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Standard constituency tests

(15) [The cat near the window] has bitten the dog.

- Substitution: ***Sachou*** *has bitten the dog.*
- Clefting: ***It's*** *the cat near the window* ***that*** *has bitten the dog.*
- Question formation: ***Who*** *bit the dog? The cat near the window.*
- Coordination: ***Sachou and*** *the cat near the window have bitten the dog.*

(16) The cat near the window [has bitten the dog].

- Ellipsis: *The cat near the window has bitten the dog,* ***and Sachou too*** ⟨*has bitten the dog*⟩

A convenient and equivalent view: tree structure

- Constituents form trees. Trees can be defined inductively:
  - a single node is a tree (“terminal”/“leaf”)
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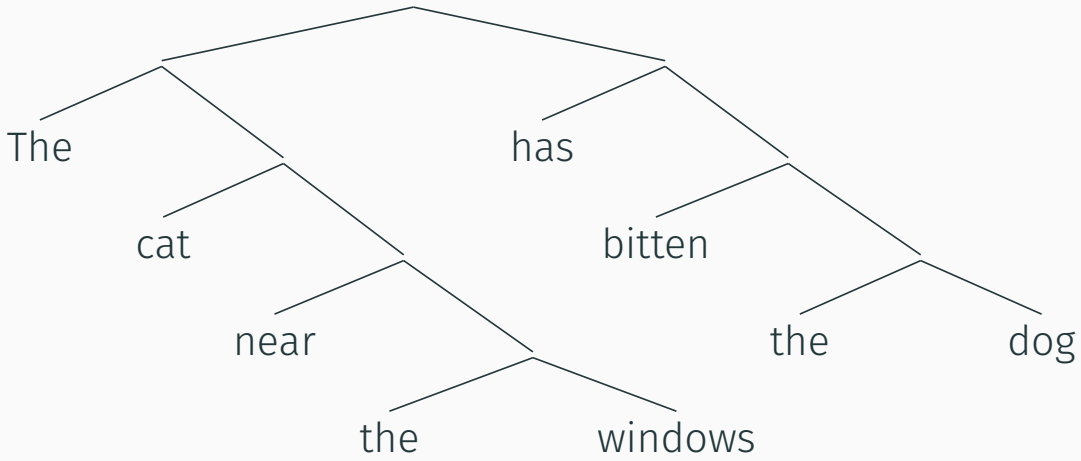

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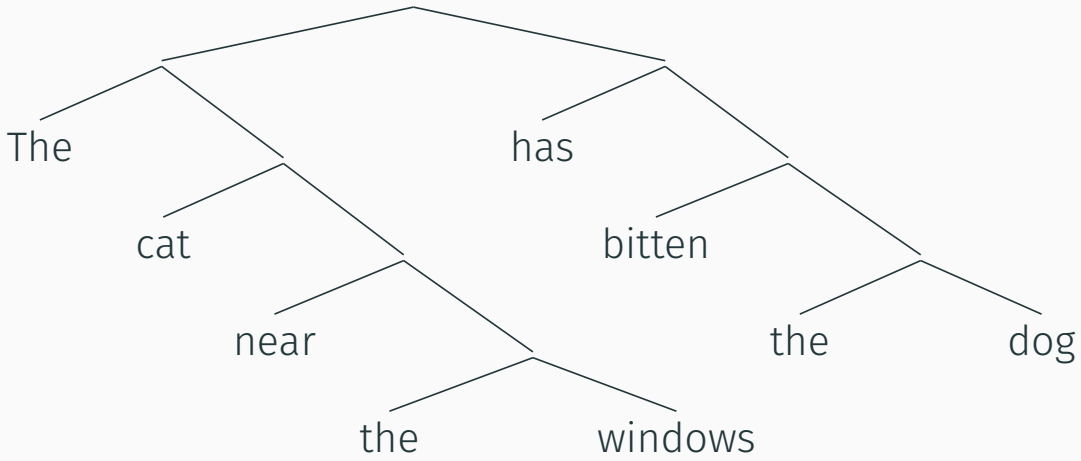

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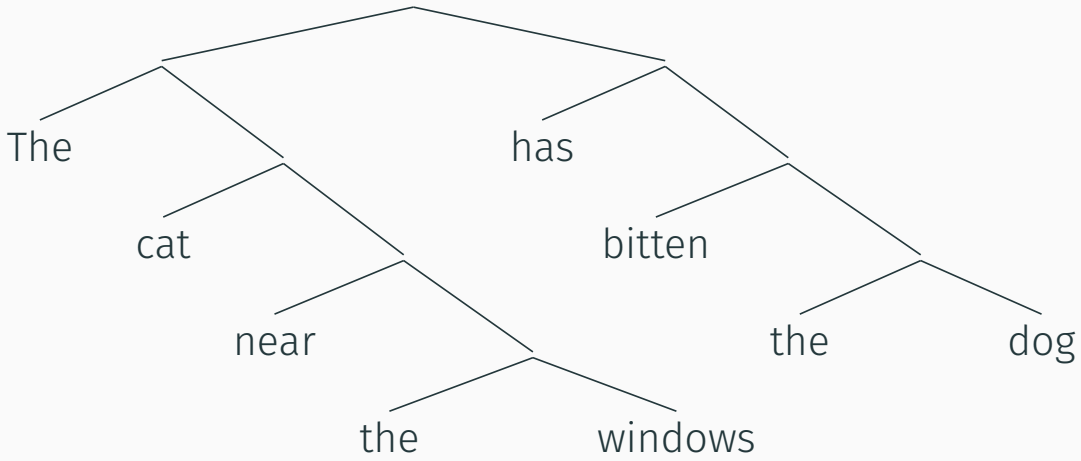

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- Having trees makes available hierarchical relations:
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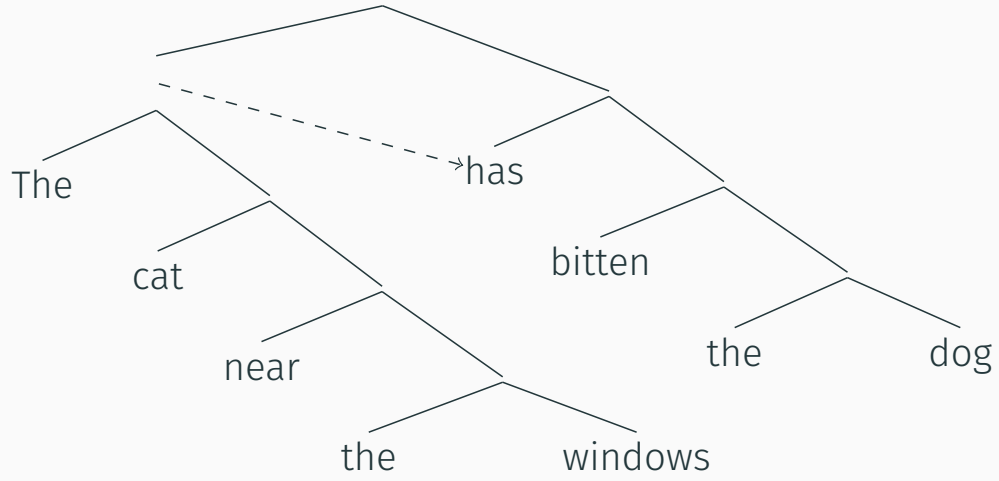

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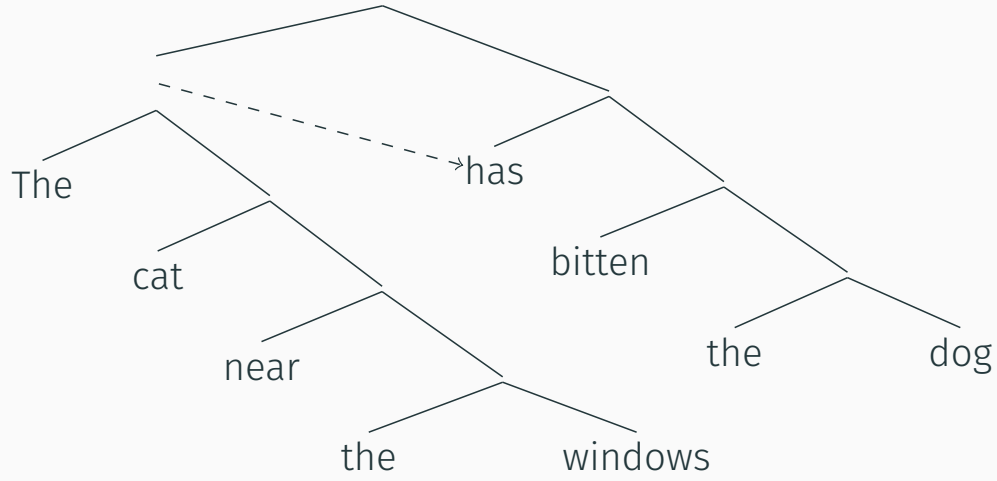

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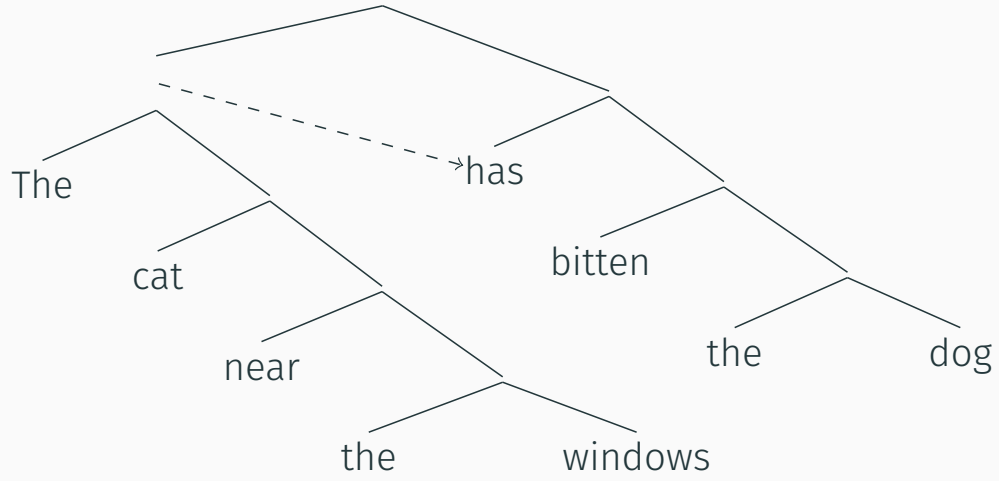

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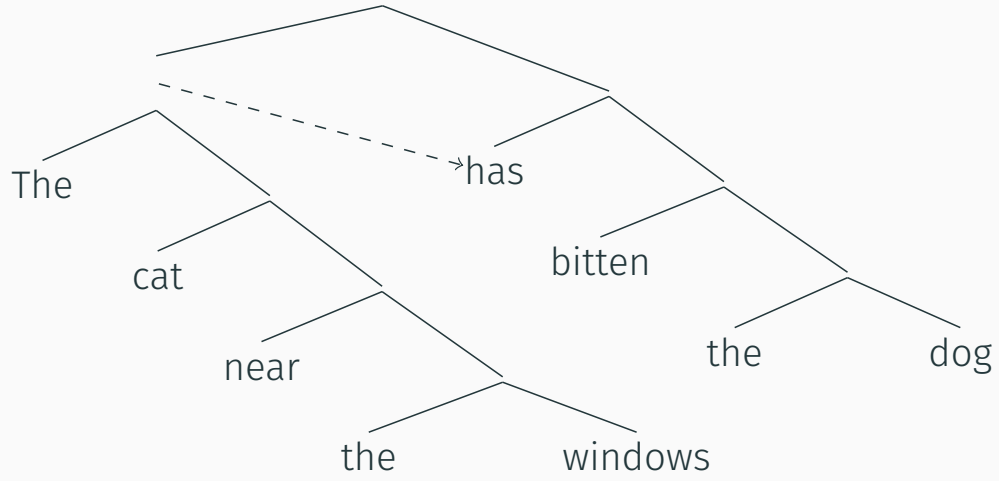

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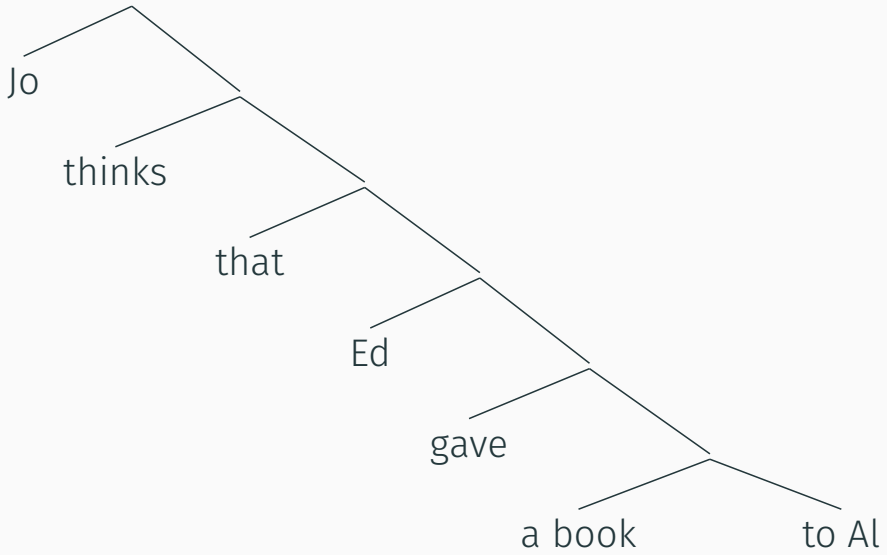
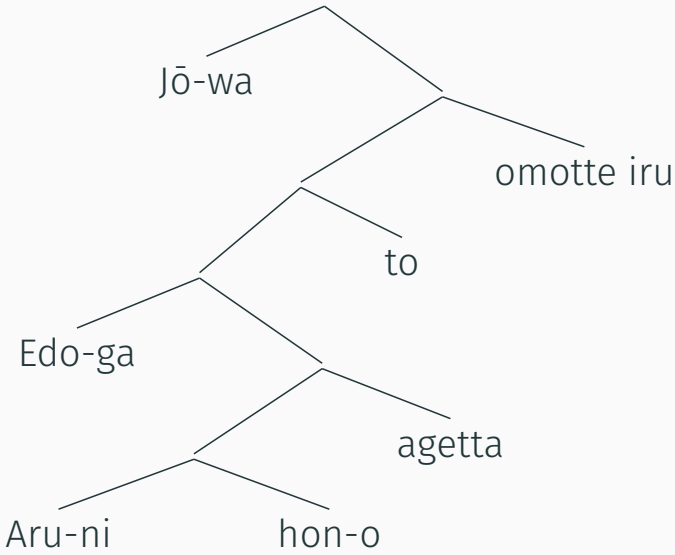
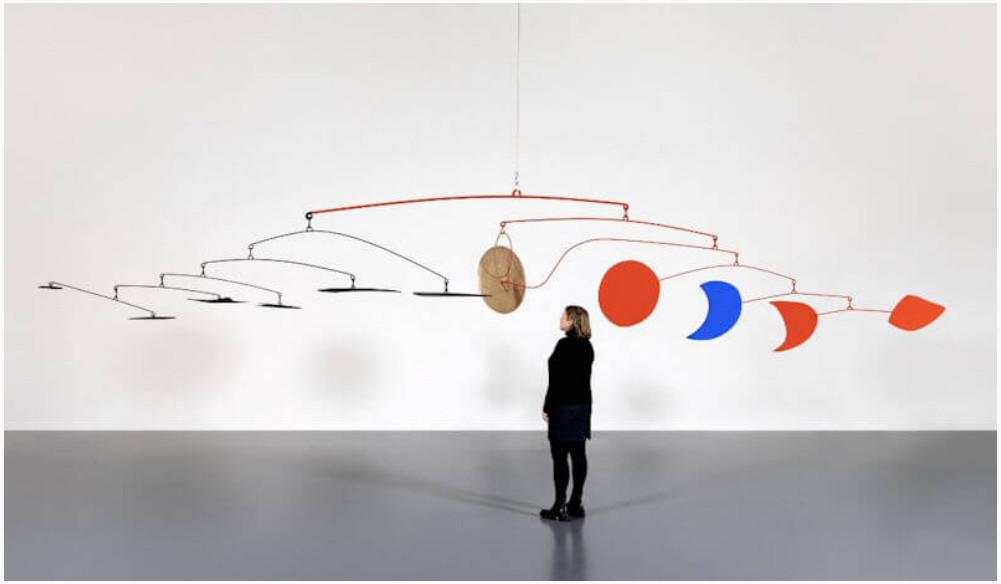




Advantages of an unordered tree structure

- Sentences must be produced sequentially (**linearization**), but their **trees don't come with an inherent notion of ordering between sister nodes**. Being the left/right node on paper does not mean being left/right in the sentence.



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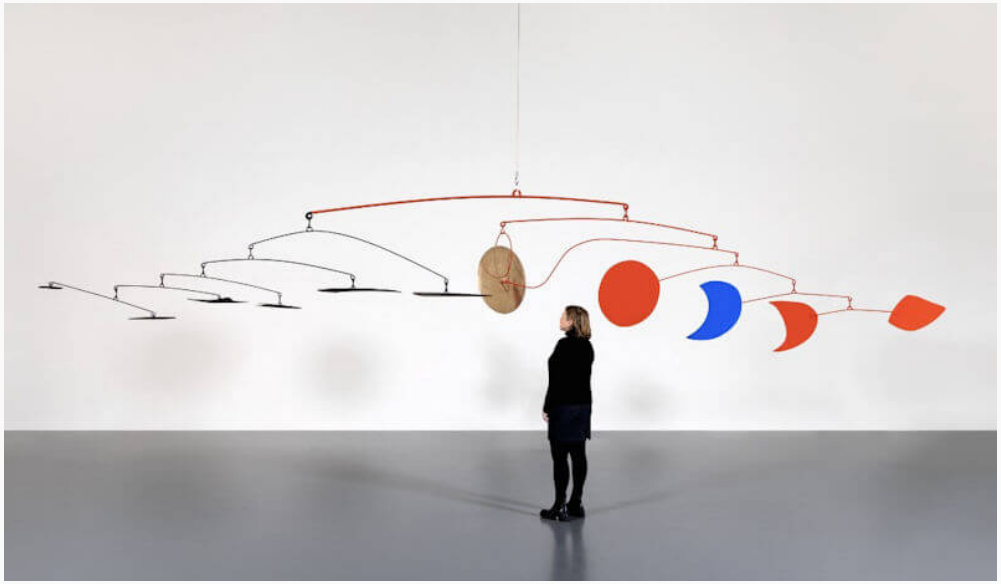

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Argument structure

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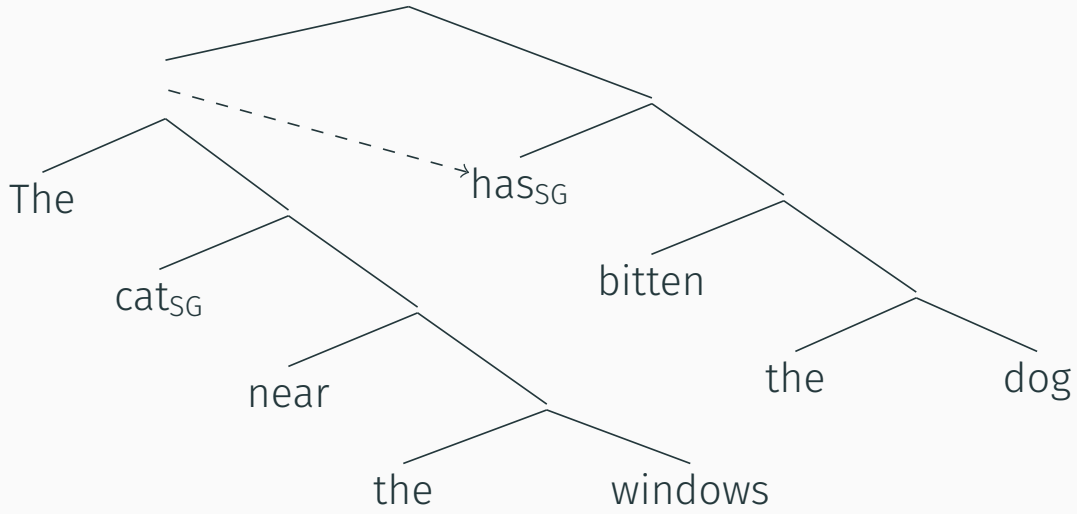

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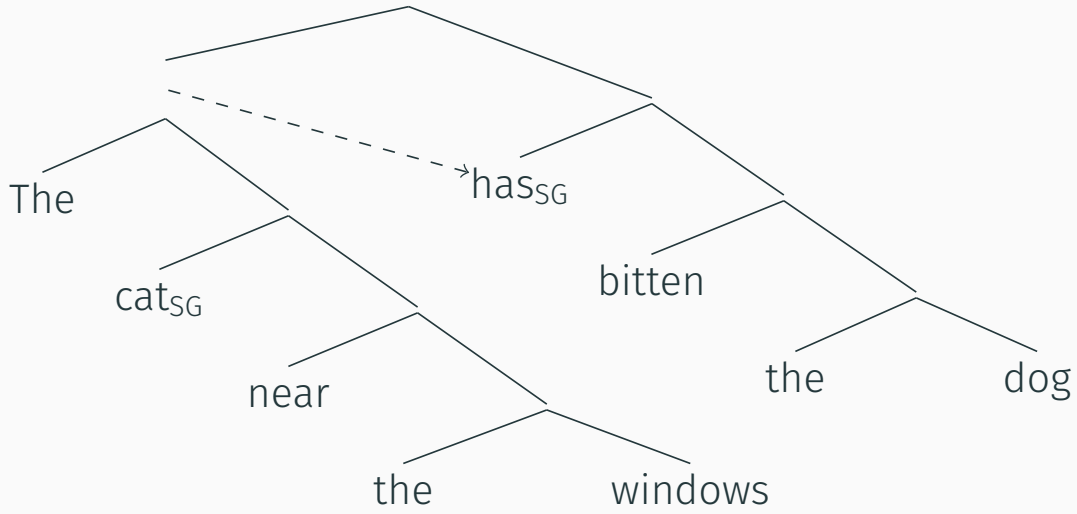

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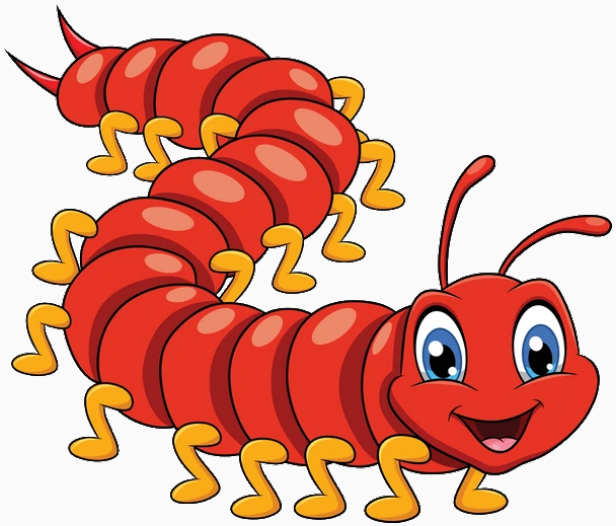

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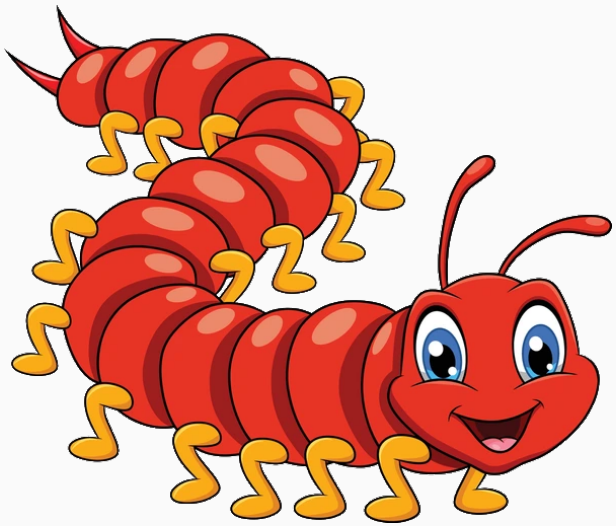

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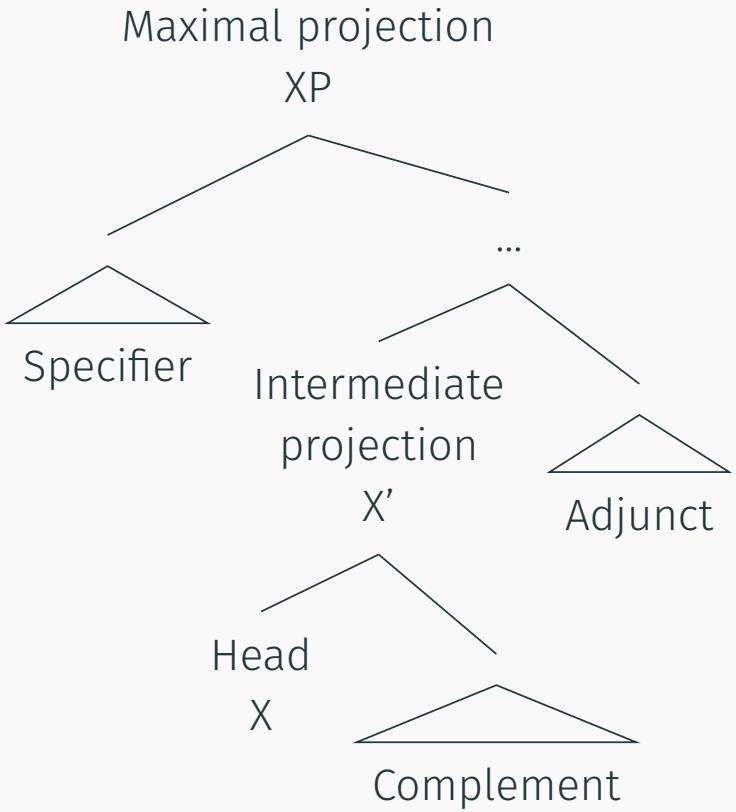

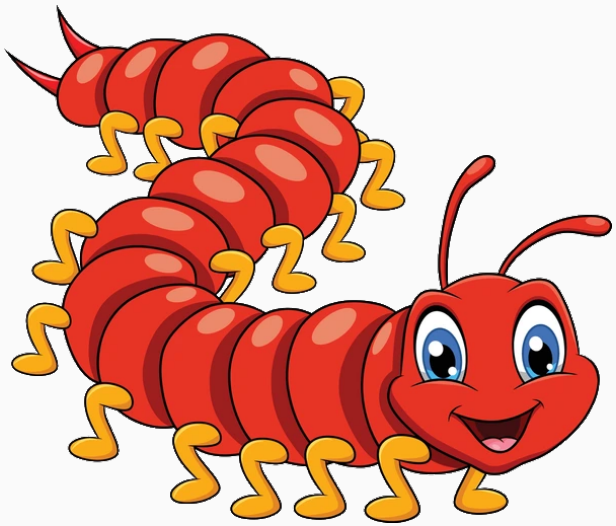

The head of a sentence

- Constituents inherit the behavior of their head–what about entire sentences then? Are they like subjects? VPs?

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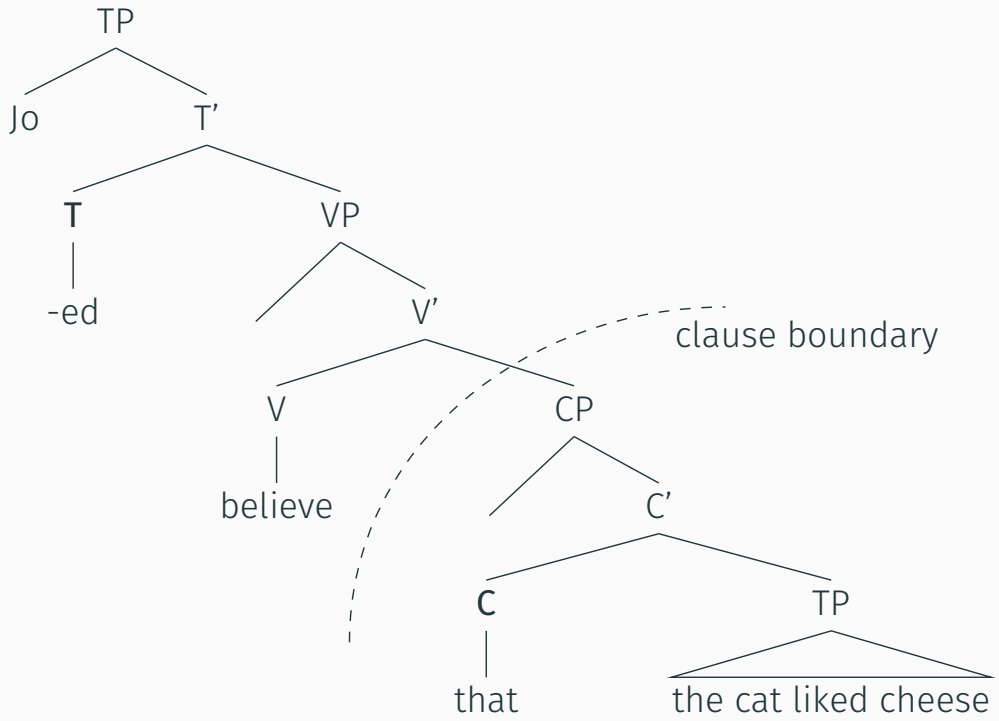

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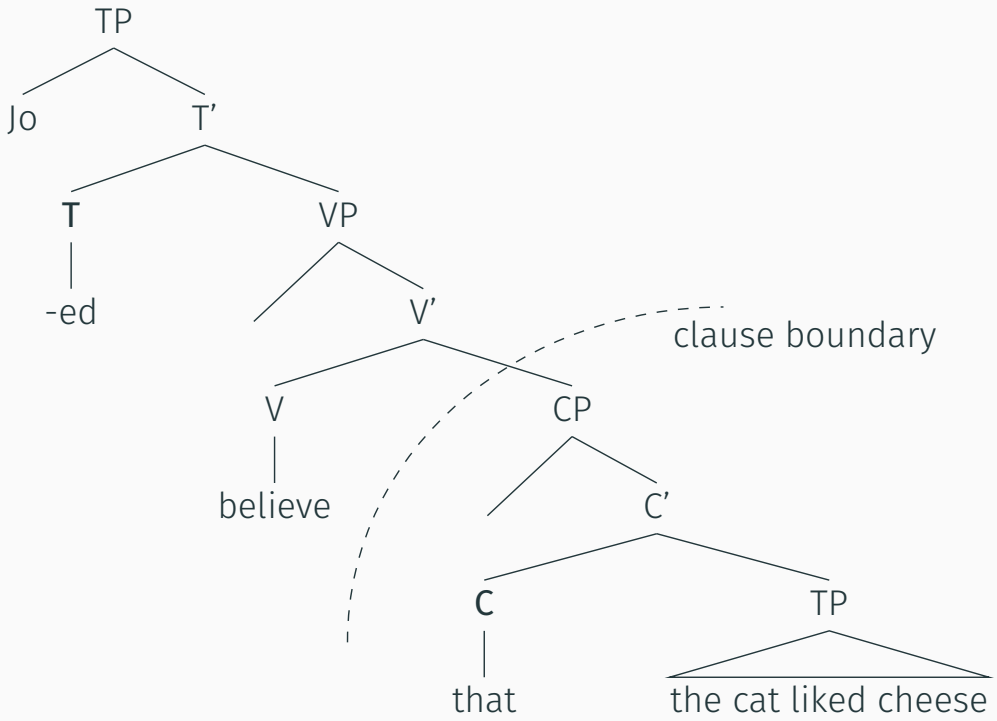

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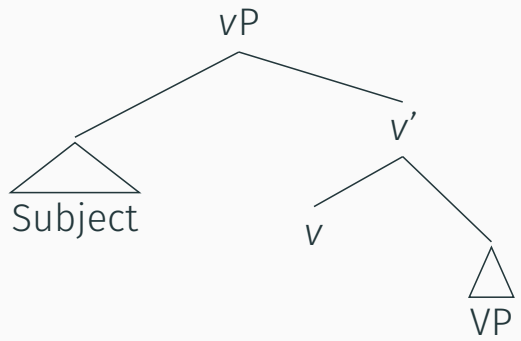

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The cat is fallen.
'The cat fell'. Intransitive **unaccusative**

b. Le $\text{chat}_{\text{AGENT}}$ **a** grogné.
The cat has growled.
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Dependencies

The unaccusative/unergative distinction

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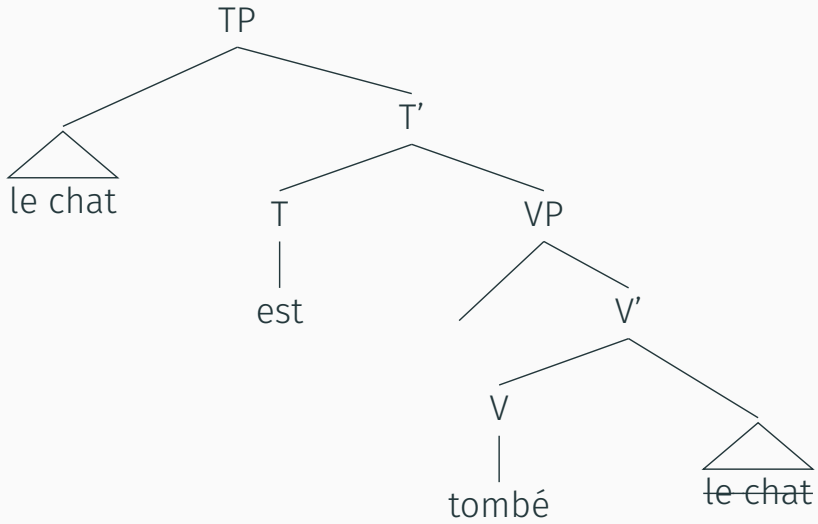

Subcategorization

(24) a. * Jo hit

b. Jo hit { the ball / *the concept to time }.

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b. Jo wonders { *that / whether } Sachou likes cheese.

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Bound readings / coreference

(26) Every kitten wanted its food. $\forall x : \mathit{kitten}(x).\ \mathit{want}(x, \mathit{food}(x))$

(27) Jo told Lu to love herself.
$\rightsquigarrow$ Jo told Lu to love Lu.
$\rightsquigarrow$ *Jo told Lu to love Jo.

- Possessive/reflexive pronouns **corefer** with specific elements:
  - variable introduced by a quantified expression (e.g. *every kitten*);
  - referent introduced by a referring expression (e.g. *Lu*).
- The possibility of a dependency is structurally determined by C-Command, and in the case of English reflexives, restricted to a local domain (here, excluding *Jo*).
- (Variable) binding is thus another kind of **positional dependency** that Syntax must encode.

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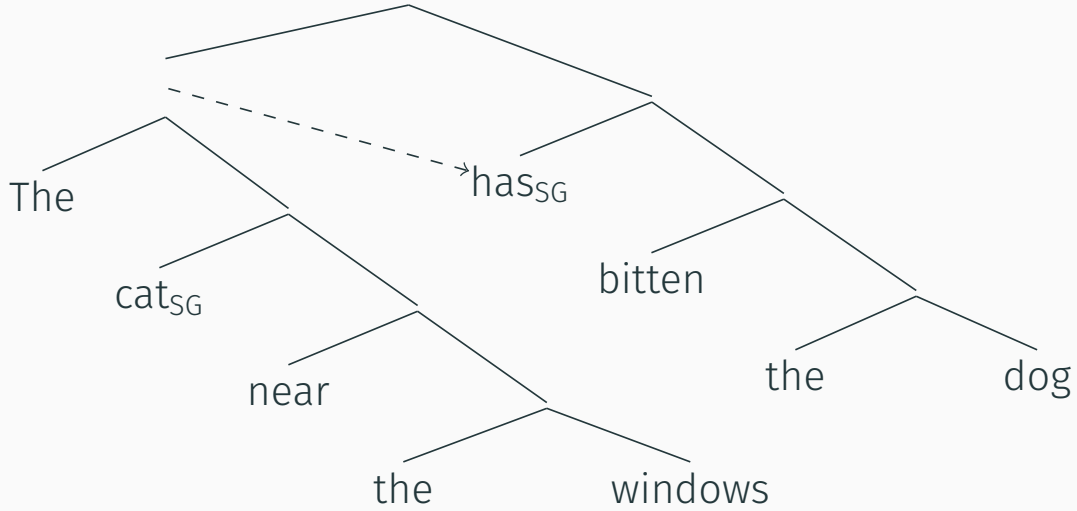

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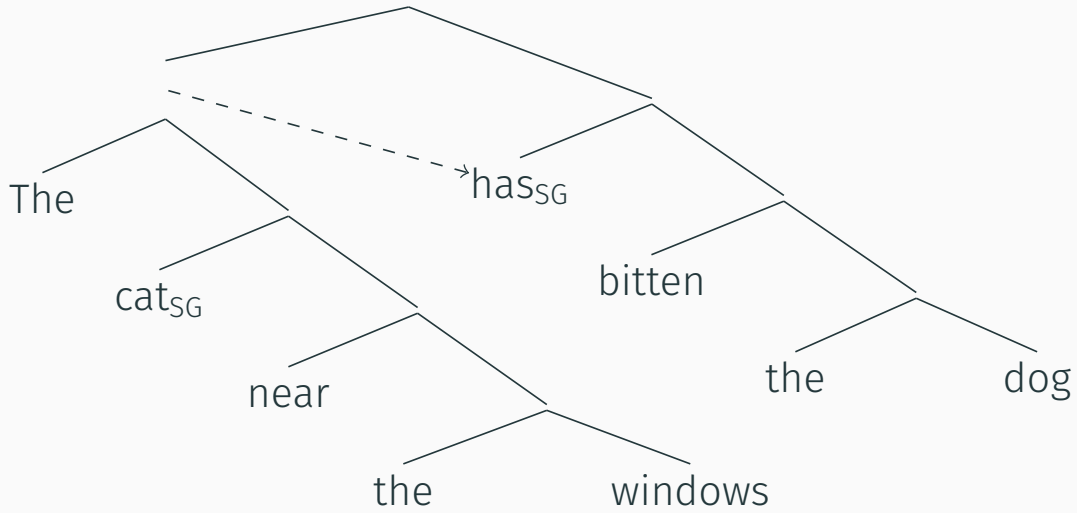

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- Morphology maps abstract features to overt realizations.

Beyond subject-verb agreement

- Some languages like Tsez (Nakh-Daghestanian) will primarily agree with their object.
- Some languages will agree with any argument, as soon as one of them bears the critical feature (omnivorous agreement).

(29) a. nits-ikákomimm-ok-innaan-**a**
1-love$_{TA}$-INV-1EXC-**SG**
'**She** loves us (exclusive).'

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- Another kind of formal dependency is **case**, e.g. nominative vs. accusative.

(30) a. She$_{\text{Nom}}$ saw him$_{\text{Acc}}$.

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- Basque, Georgian, Mayan, Tibetan, Sumerian, some Indo-European and many Indo-Aryan languages display **absolutive-ergative case systems**, in which the subject of an intransitive and the object of a transitive are marked with the absolutive, while the subject of transitives are ergative.

Formalizing the core concepts

Three big historical landmarks

- Phrase structure rules
- Transformational grammar
- Minimalism

Phrase structure rules

- **Production rules** of the form "mother node → children nodes" specifying how to build syntax trees.

S	→	NP	VP
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- Transformational grammar: the above nominalizations are derived from sentences *via* specific **transformation rules**.
- Because *shoot* is transitive, (32a) can be derived from either *The hunters shoot …* or from *… shoot the hunters*, capturing the ambiguity.
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Transformations (II)

- Transformations affect structure but not meaning. Meaning is determined at the level of "**deep structure**".
- Applications: active-passive alternation, *tough*-constructions, raising constructions...dependencies in general.

(8) The cat (AGENT) bit the dog (PATIENT).

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(33) a. It's tough to please Jo.

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- Core components of Syntax enabled by one operation: **Merge**.
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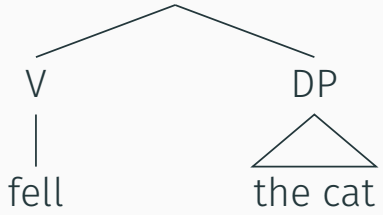

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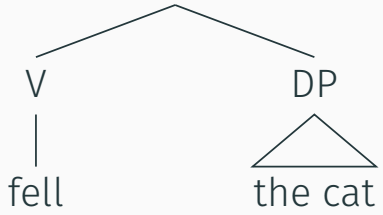

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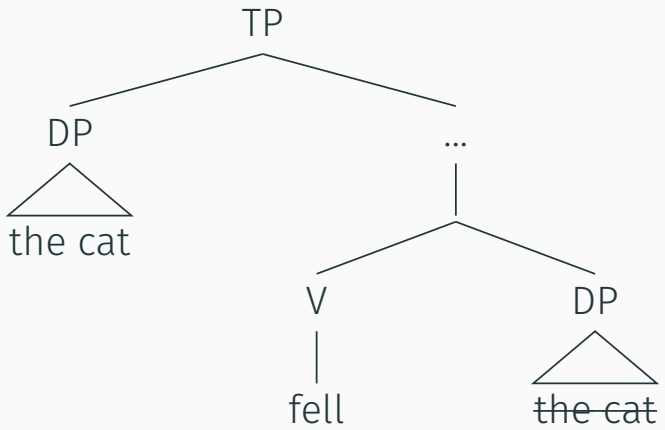

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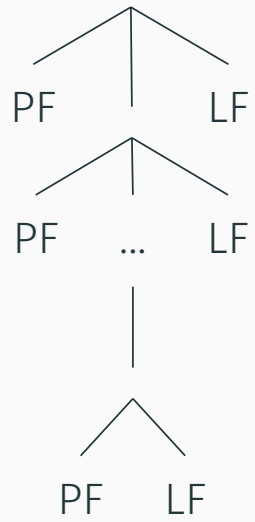

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