

HG4041 Theories of Grammar

Non-referential NPs, Expletives, and Extraposition

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Lecture 9

Location: LHN-TR+36

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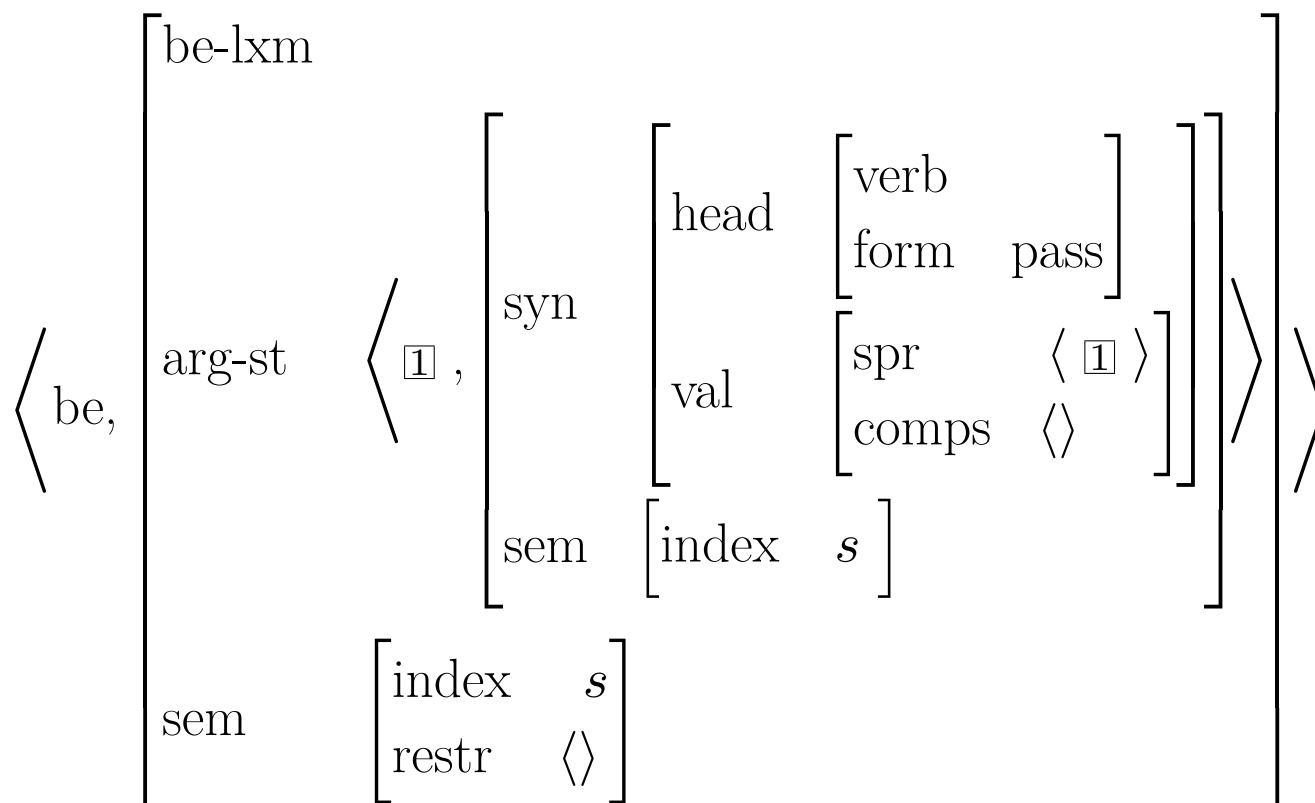
Overview

- Existentials (There is an X, ...)
- Extraposition (It worries me that X, ...)
- Idioms (X takes advantage of Y, ...)

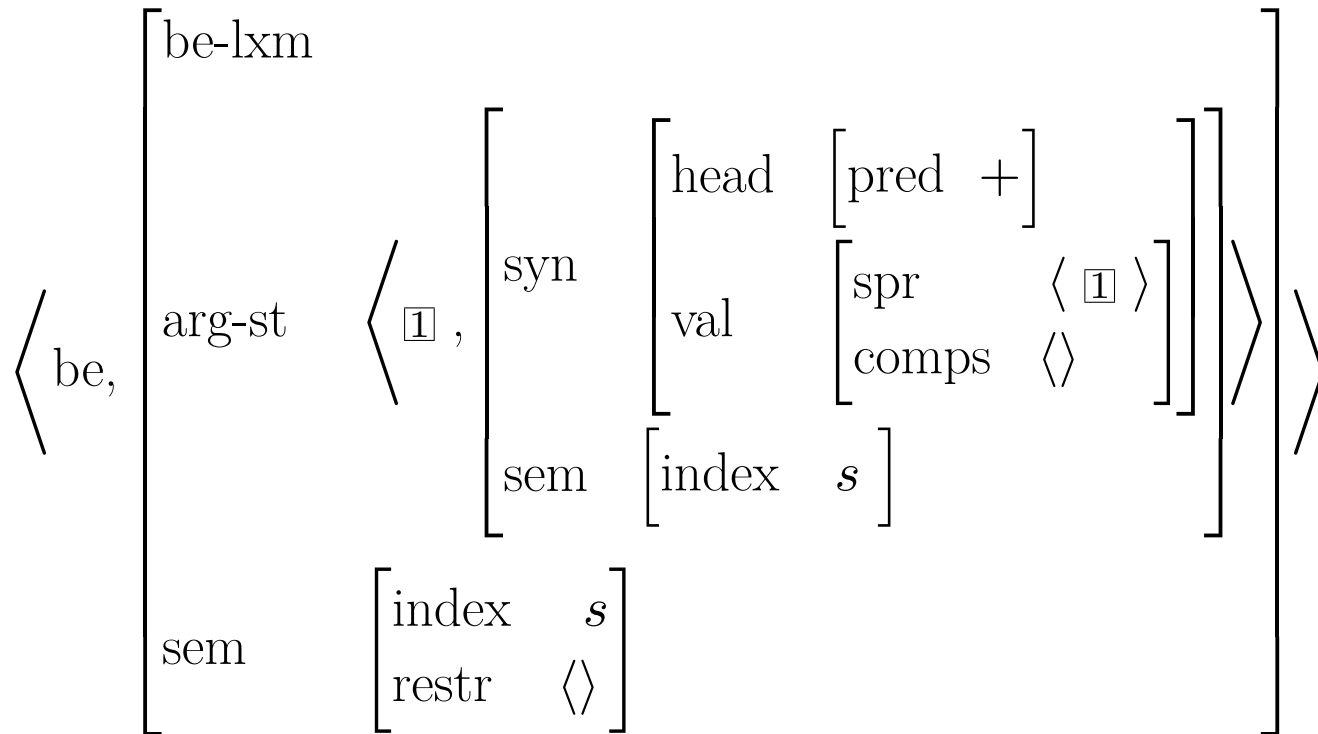
Where We Are, and Where We're Going

- Last time, we met the passive **be**.
- Passive **be** is just a special case – that **be** generally introduces [PRED +] constituents
- Today, we'll start with another **be**, which occurs in existential sentences starting with **there**, e.g. **There is a monster in Loch Ness**.
- Then we'll look at this use of **there**.
- Which will lead us to a more general examination of NPs that don't refer, including some uses of **it** and certain idiomatic uses of NPs.

Chapter 10 entry for be



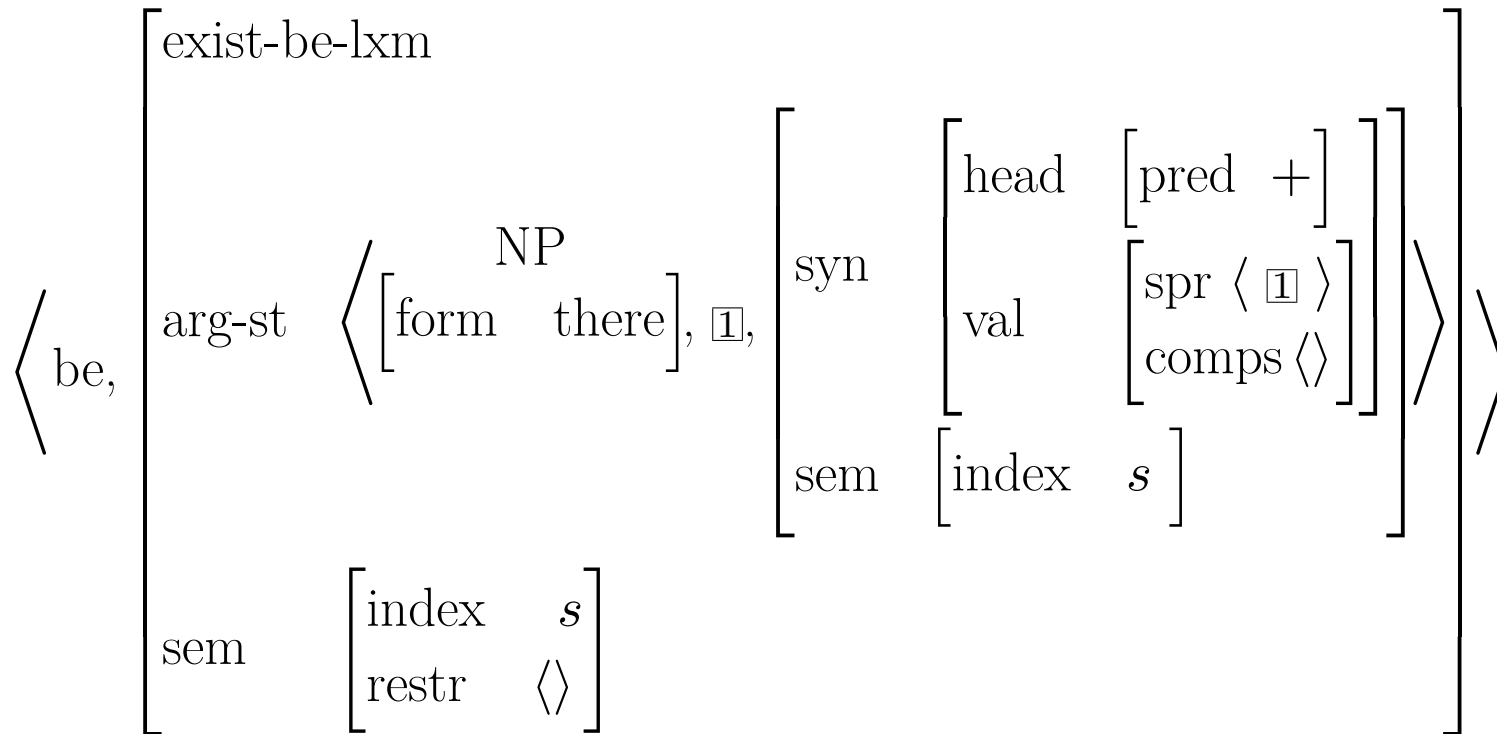
Copula (generalized)



Existentials

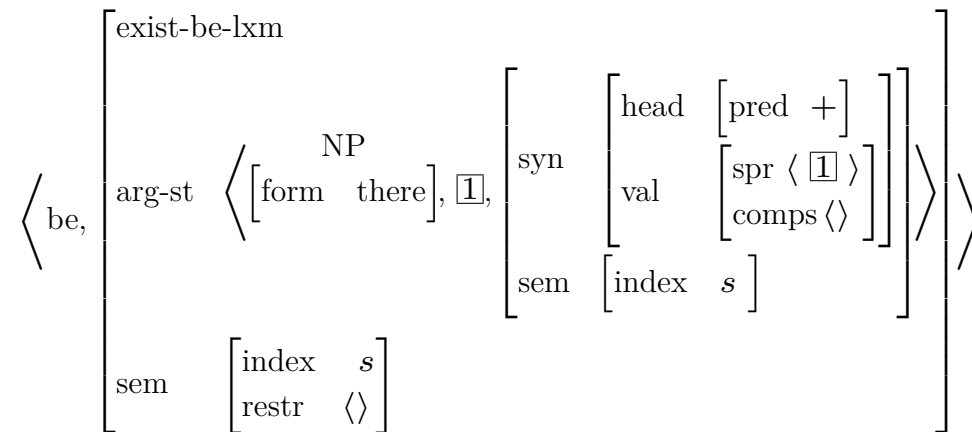
- The **be** in **There is a page missing** cannot be the same **be** that occurs in sentences like **Pat is tall** or **A cat was chased by a dog**. Why not?
- So we need a separate lexical entry for this **be**, stipulating:
 - Its SPR must be **there**
 - It takes two complements, the first an NP and the second an AP, PP, or (certain kind of) VP.
 - The semantics should capture the relation between, e.g. **There is a page missing** and **A page is missing**.

Lexical Entry for the Existential be



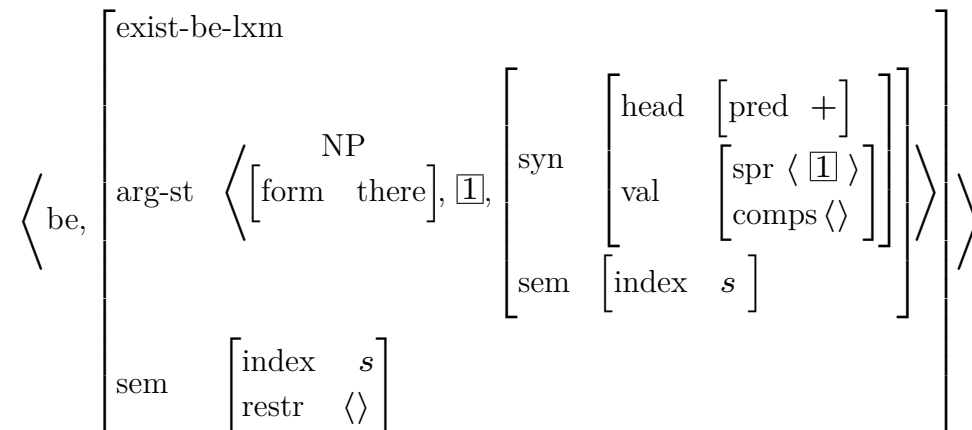
Questions About the Existential be

- What type of constituent is the third argument?
- Why is the third argument [pred +]?
- Why is the second argument tagged as identical to the spr of the third argument?

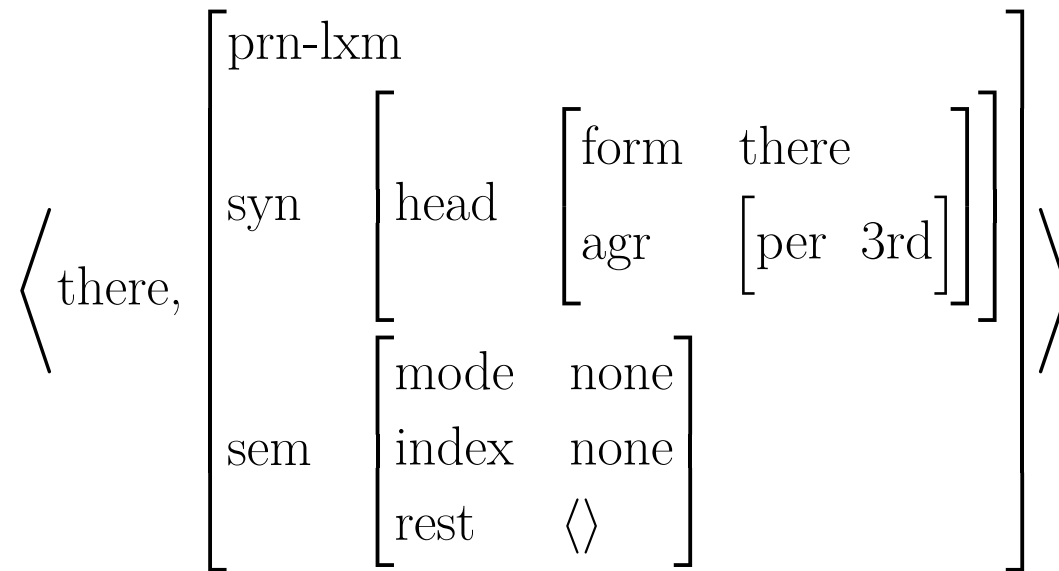


There are questions left

- What is the contribution of this be to the semantics of the sentences it occurs in?
- Can all [pred +] predicates appear as the third argument in existentials?
- How do we rule out *There was a greyhound a good runner?



The Entry for Existential *there*



Questions About Existential there

- Why do we call it a pronoun?
- Why don't we give it a value for num?
- What does this entry claim is **there**'s contribution to the semantics of the sentences it appears in?
- Is this a correct claim?

$\left\langle \text{there}, \right.$	$\left[\begin{array}{l} \text{prn-lxm} \\ \\ \text{syn} \left[\begin{array}{l} \text{head} \left[\begin{array}{l} \text{form} \quad \text{there} \\ \text{agr} \quad \left[\text{per} \quad \text{3rd} \end{array} \right] \end{array} \right] \\ \\ \text{sem} \left[\begin{array}{l} \text{mode} \quad \text{none} \\ \text{index} \quad \text{none} \\ \text{rest} \quad \langle \rangle \end{array} \right] \end{array} \right]$				$\left. \right] \backslash /$

Other NPs that don't seem to refer

- (1) It sucks that the Rockies lost the series.
- (2) It is raining.
- (3) Andy took advantage of the opportunity.
- (4) Lou kicked the bucket.

What about It follows that you are wrong?

- This is an example of **extraposition**
- To analyze it we need:
 - An analysis of this use of **that***
 - Entries for verbs that take clausal subjects *
- (5) That you are wrong follows
- A lexical entry for dummy **it**
- A rule to account for the relationship between pairs like (5) and (6)
- (6) It follows that you are wrong.

*We need these anyway (independently motivated)

The Entry for Dummy *it*

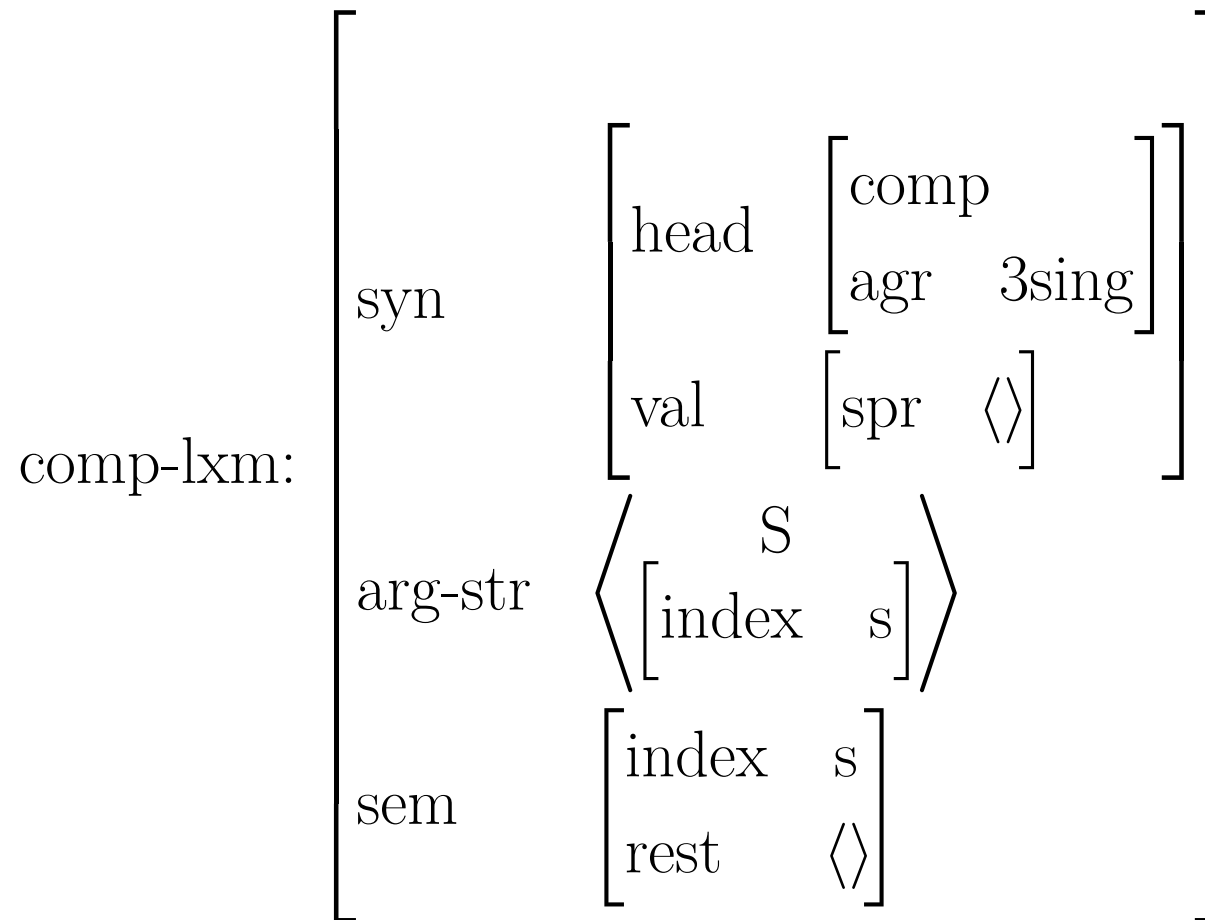
\langle <i>it</i> , \rangle	prn-lxm		
	syn	head	$\left[\begin{array}{ll} \text{form} & \text{it} \\ \text{agr} & \text{3sing} \end{array} \right]$
	sem	mode	none
		index	none
		rest	$\langle \rangle$

Questions About Dummy *it*

- How does it differ from the entry for dummy *there*? Why do they differ in this way?
- Is this the only entry for *it*?

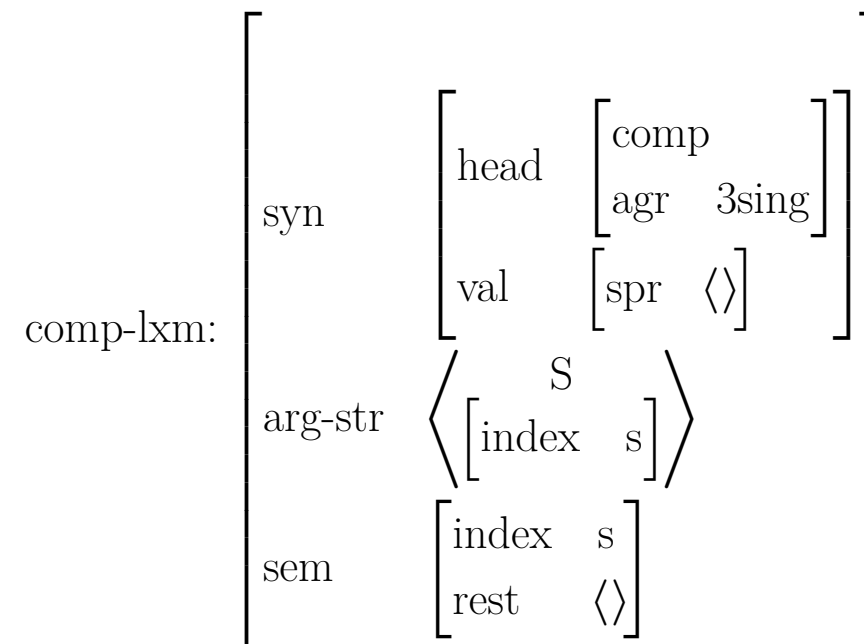
\langle it, \rangle	prn-lxm		
	syn	head	$\begin{bmatrix} \text{form} & \text{it} \\ \text{agr} & \text{3sing} \end{bmatrix}$
	sem	mode	none
		index	none
		rest	$\langle \rangle$

A New Type of Lexeme: Complementizers

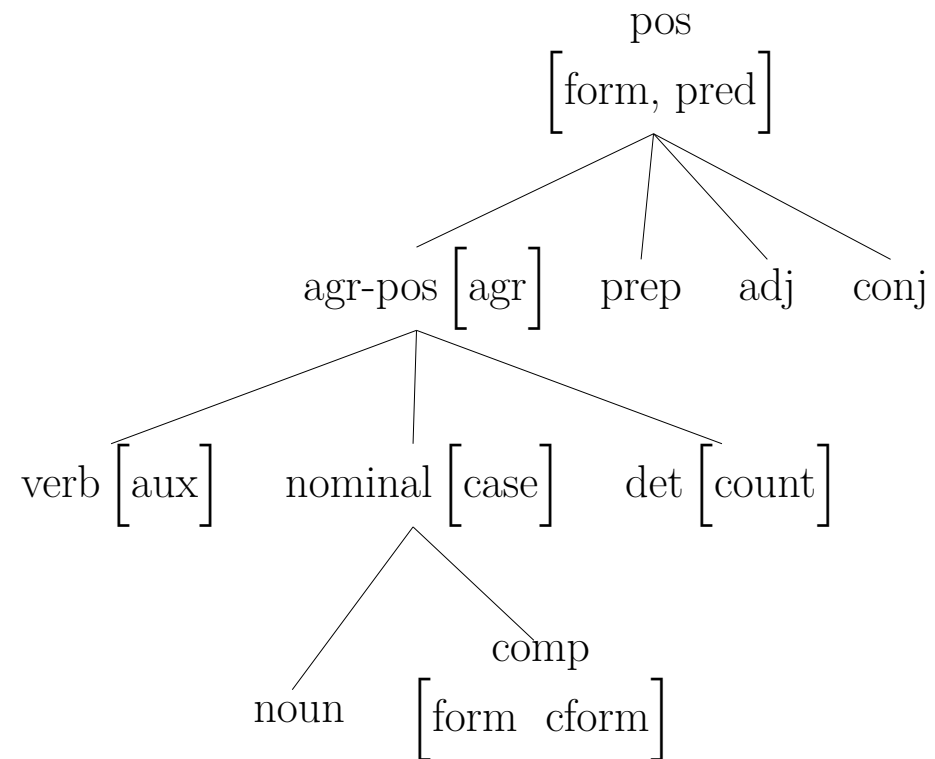


Questions About the Type comp-lxm

- Why does it stipulate values for both spr and arg-st?
- Why is its index value the same as its argument's?
- What is its semantic contribution?



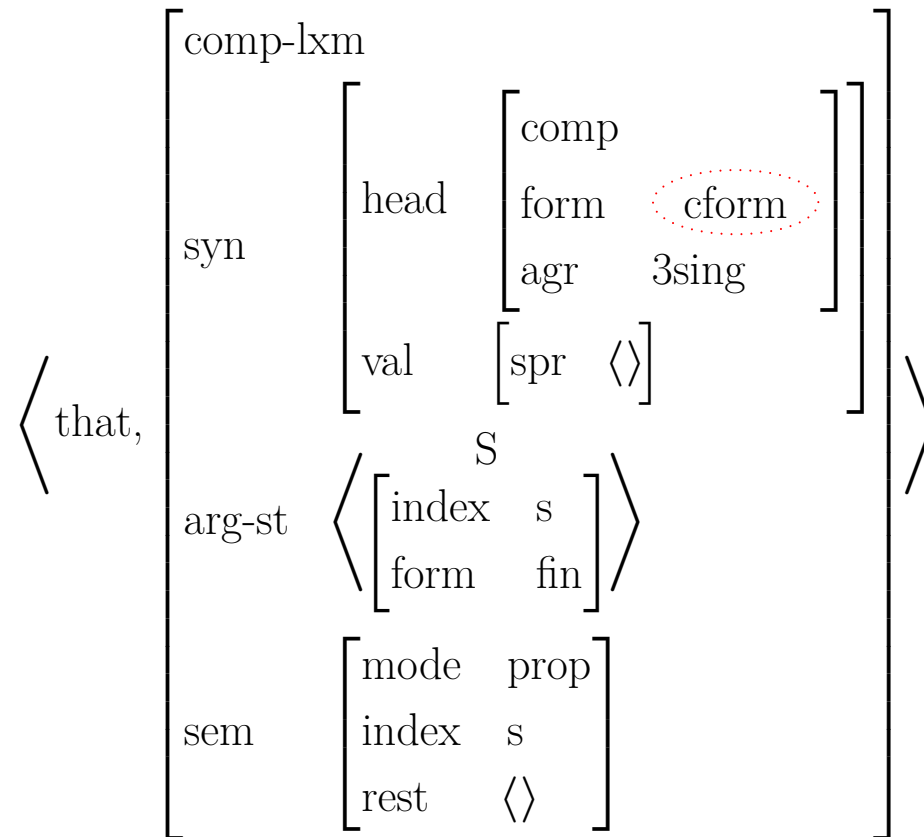
The Type comp



The Lexical Entry for Complementizer *that*

$$\left\langle \text{that}, \begin{bmatrix} \text{comp-lxm} \\ \text{arg-st} \left\langle \begin{bmatrix} \text{form} & \text{fin} \end{bmatrix} \\ \begin{bmatrix} \text{mode} & \text{prop} \end{bmatrix} \end{bmatrix} \right\rangle \end{bmatrix} \right\rangle$$

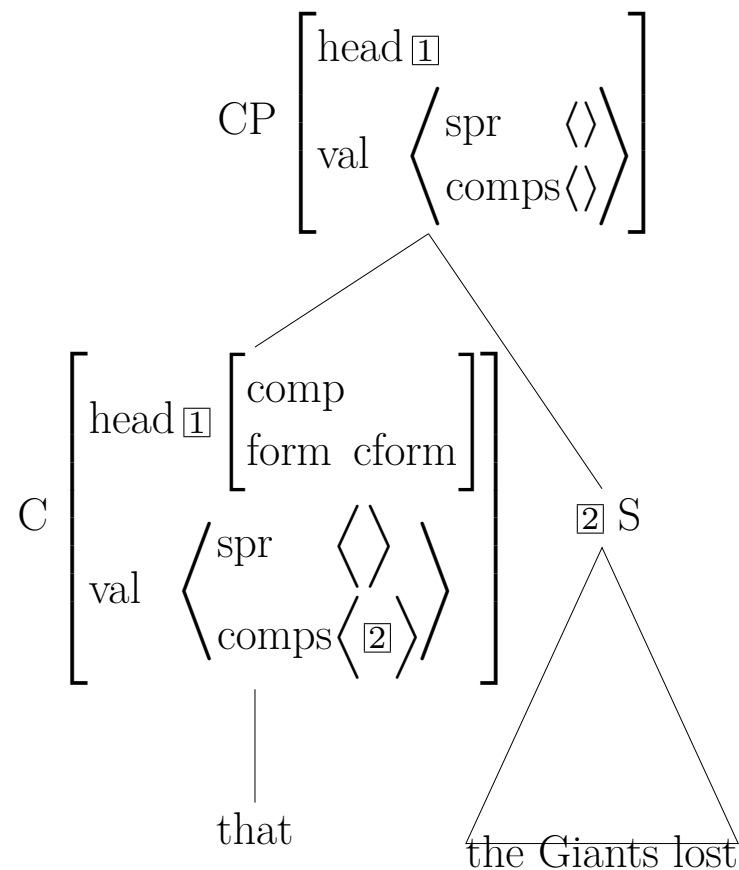
...with inherited information filled in



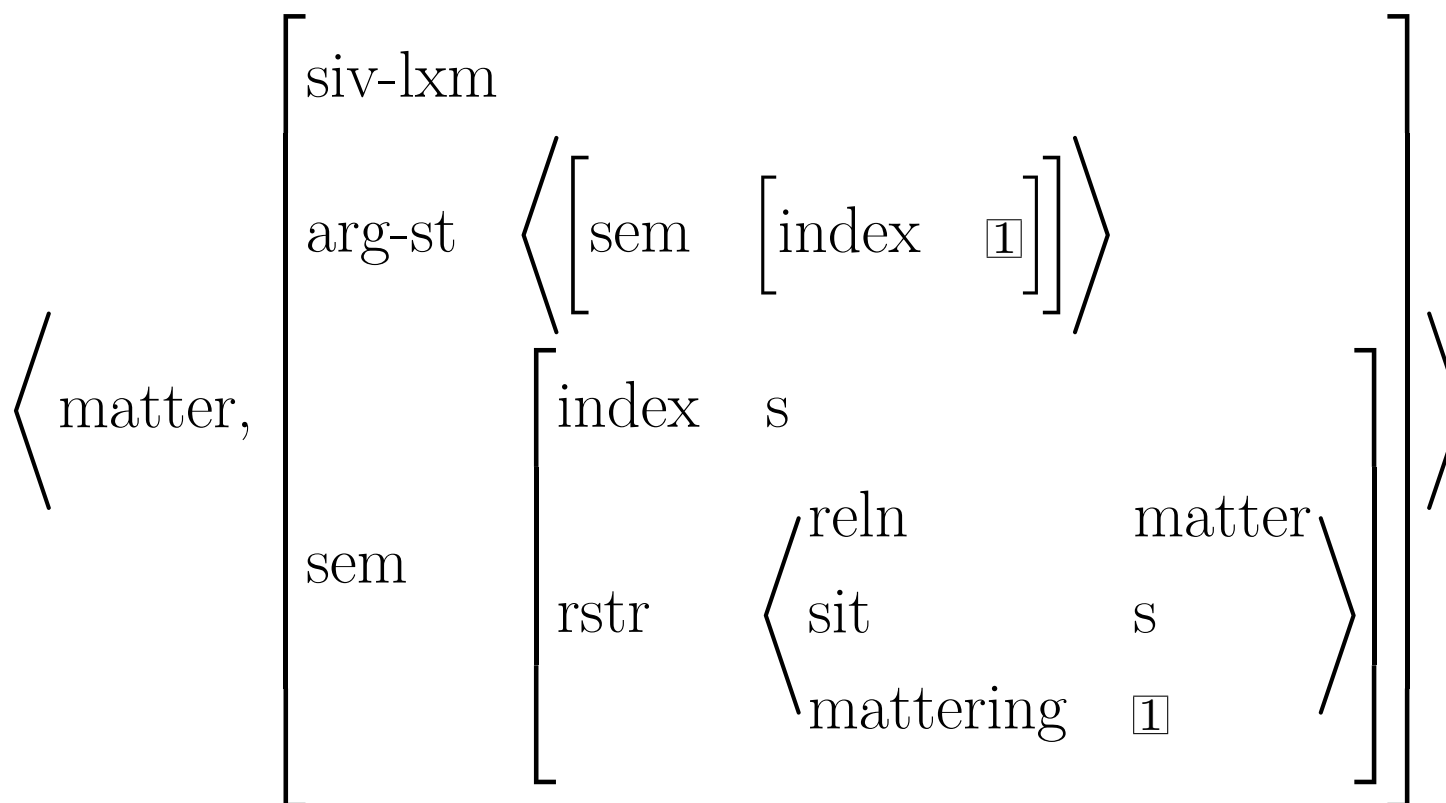
➤ Question: Where did [form cform] come from?

Structure of a Complementizer Phrase

(7) that the Giants lost



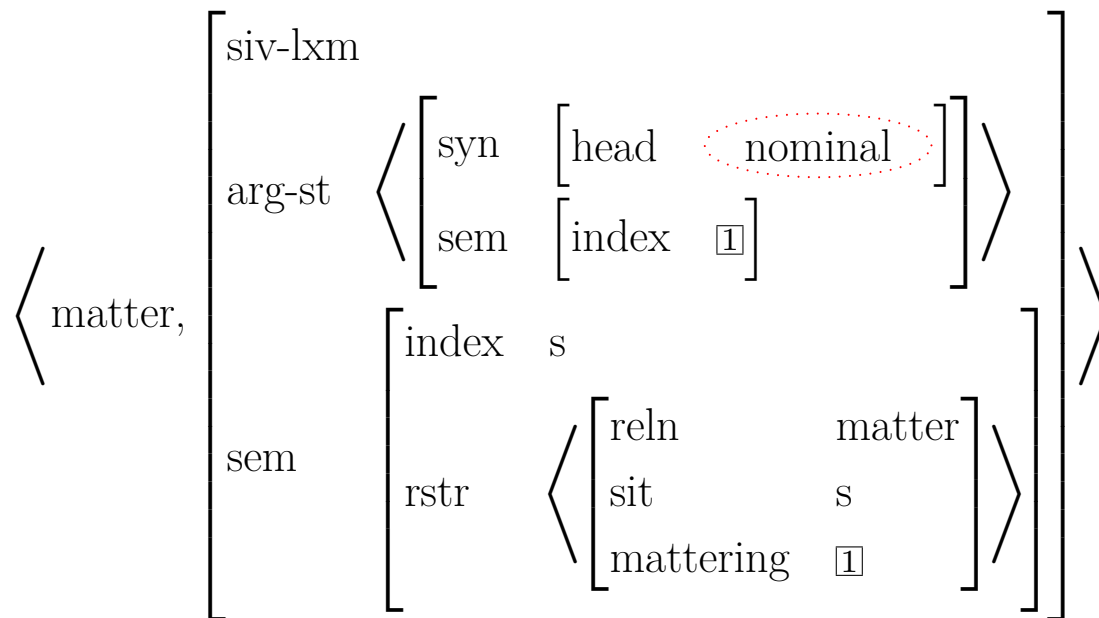
Sample Verb with a CP Subject



Note: the only constraint on the first argument is semantic

A Problem

- We constrained the subject of matter only semantically. However...
- CP and S are semantically identical, but we get:
 - (8) That Bush won matters vs. *Bush won matters
- Argument-marking PPs are semantically identical to their object NPs, but we get:
 - (9) The election mattered vs. *Of the election mattered
- So we need to add a syntactic constraint.



- S and PP subjects are generally impossible, so this constraint should probably be on verb-lxm.

Extraposition (at last)

- Extraposition alters word order so that a relatively "heavy" constituent appears to the right of its canonical position.

- (10) a. That you were wrong follows.
b. It follows that you were wrong.
- (11) a. That I mistyped it was frustrating.
b. It was frustrating that I mistyped it.
- (12) a. Did that this happened surprise you?
b. Did it surprise you that this happened?

The Extraposition Lexical Rule

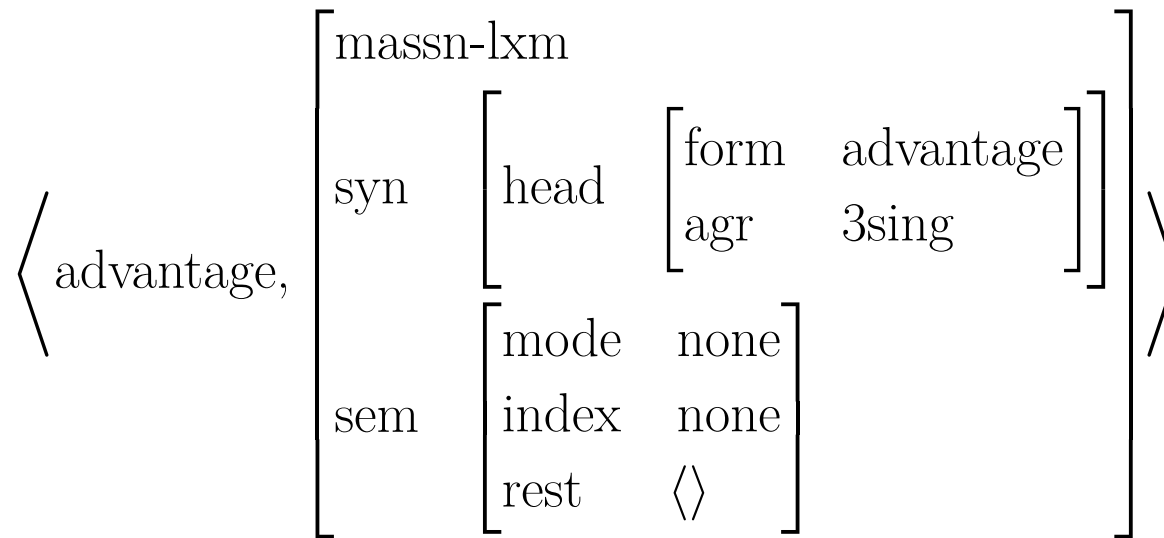
pi-rule	
input	$\left\langle X, \left[\text{syn} \left[\text{val} \left[\begin{array}{l} \text{spr} \quad \langle \boxed{1} \text{ CP} \rangle \\ \text{comps} \quad \boxed{A} \end{array} \right] \right] \right] \right\rangle$
output	$\left\langle Y, \left[\text{syn} \left[\text{val} \left[\begin{array}{l} \text{spr} \quad \langle \text{NP} [\text{form} \quad \text{it}] \rangle \\ \text{comps} \quad \boxed{A} \oplus \langle \boxed{1} \rangle \end{array} \right] \right] \right] \right\rangle$

- Why is the type pi-rule?
- Why doesn't it say anything about the semantics?
- Why is the comps value $\boxed{A} \oplus \langle \boxed{1} \rangle$ not $\langle \rangle$?

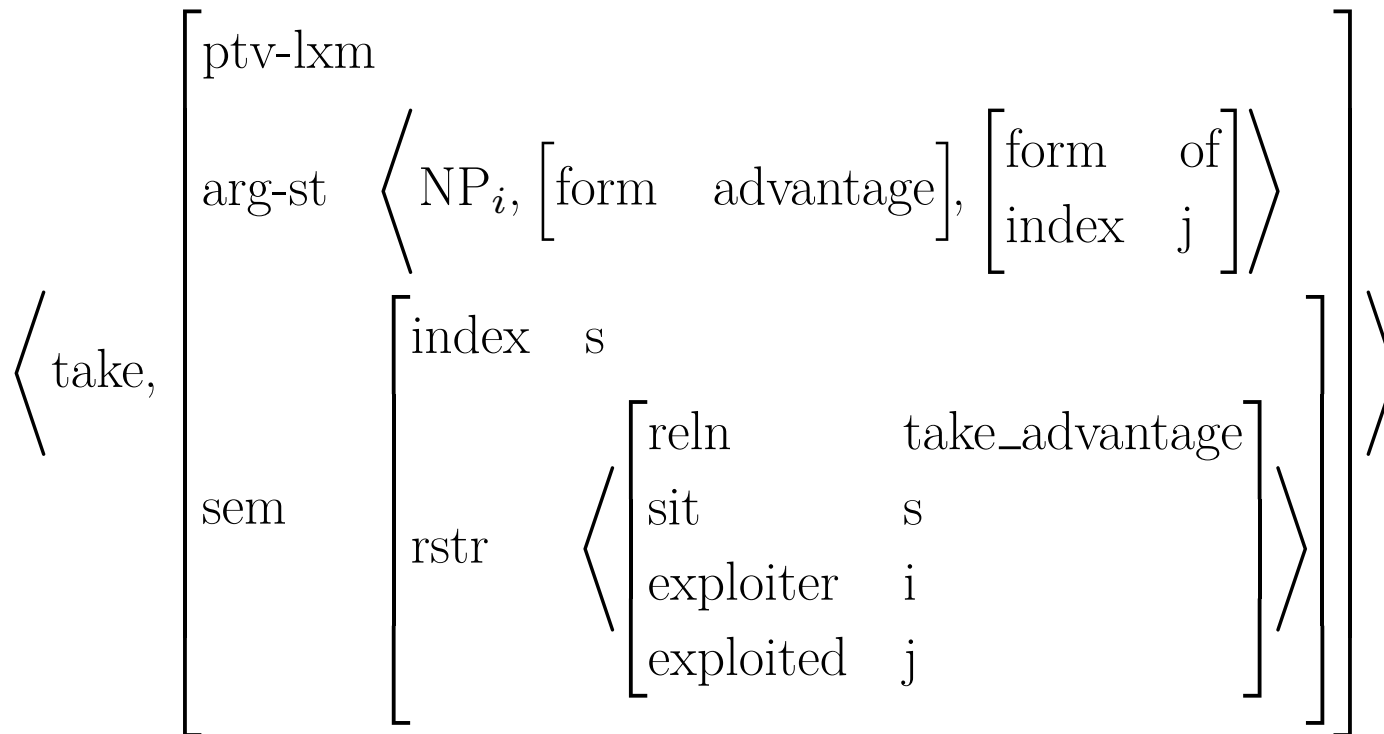
Extraposition with Verbs whose comps lists are Nonempty

- (13) It worries me that war is imminent.
- (14) It occurred to Pat that Chris knew the answer.
- (15) It endeared you to Andy that you wore a funny hat.

Another Nonreferential Noun: advantage



The Verb that Selects advantage



Our analyses of idioms and passives interact...

➤ We generate

(16) Advantage was taken of the situation by many people.

(17) Tabs are kept on foreign students.

➤ But not:

(18) Many people were taken advantage of.

➤ Why not?

Overview

- Existentials (`there`, `be`)
- Extraposition (`that`, `it`, LR)
- Idioms (`take_advantage`, ...)

P1: there and Agreement

The analysis of existential **there** sentences presented so far says nothing about verb agreement.

- A. Consult your intuitions (and/or those of your friends, if you wish) to determine what the facts are regarding number agreement of the verb in **there** sentences. Give an informal statement of a generalization covering these facts, and illustrate it with both grammatical and ungrammatical examples. [Note: Intuitions vary regarding this question, across both individuals and dialects. Hence there is more than one right answer to this question.]
- B. How would you elaborate or modify our analysis of the **there** construction so as to capture the generalization you have discovered? Be as precise as you can.

P2: Passing Up the Index

A. Give the restr value that our grammar should assign to the sentence in (i). Be sure that the sit value of the **smoke** predication is identified with the annoyance value of the annoy predication.

(i) **That Dana is smoking annoys Leslie.**

[Hint: This sentence involves two of the phenomena analyzed in this chapter: predicative complements of **be** and CP subjects.]

B. Draw a tree for (i). Use abbreviations for node labels, but show the index on each node.

C. Explain how the sit value of the smoke predication gets identified with the annoyance value of the annoy predication. Be sure to make reference to lexical entries, phrase structure rules, and principles, as appropriate.

P3: An Annoying Problem

Assume that the lexical entry for the verb annoy is the following:

$$(19) \quad \left\langle \text{annoy} , \left[\begin{array}{l} \text{stv-lxm} \\ \text{arg-st} \quad \left\langle \left[\text{sem} [\text{index } \boxed{1}] \right], \text{NP}_i \right\rangle \\ \text{sem} \quad \left[\begin{array}{ll} \text{index} & s \\ \text{restr} & \left\langle \left[\begin{array}{ll} \text{reln} & \text{annoy} \\ \text{sit} & s \\ \text{annoyed} & i \\ \text{annoyance} & \boxed{1} \end{array} \right] \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

-
- A. What constraints are imposed on the lexical sequences that result from applying the **3rd-Singular Verb Lexical Rule** to this entry (including those that involve inheritance of constraints from the entry's supertypes)?
- B. What constraints are imposed on lexical sequences that result from applying the **Extraposition Lexical Rule** to your answer to part (A)?
- C. Draw a tree structure for the sentence in (20). You should show the value of all sem features on all of the nodes, as well as the spr and comps features for **annoys**.

(20) It annoys Lee that Fido barks.

D. The lexical entry for **annoy** allows NP subjects as well, as in (21). Why doesn't the grammar then also license (22)?

(21) **Sandy annoys me.**

(22) ***It annoys me Sandy.**