

Ling 566

Nov 4, 2014

Non-referential NPs, Expletives, and Extraposition

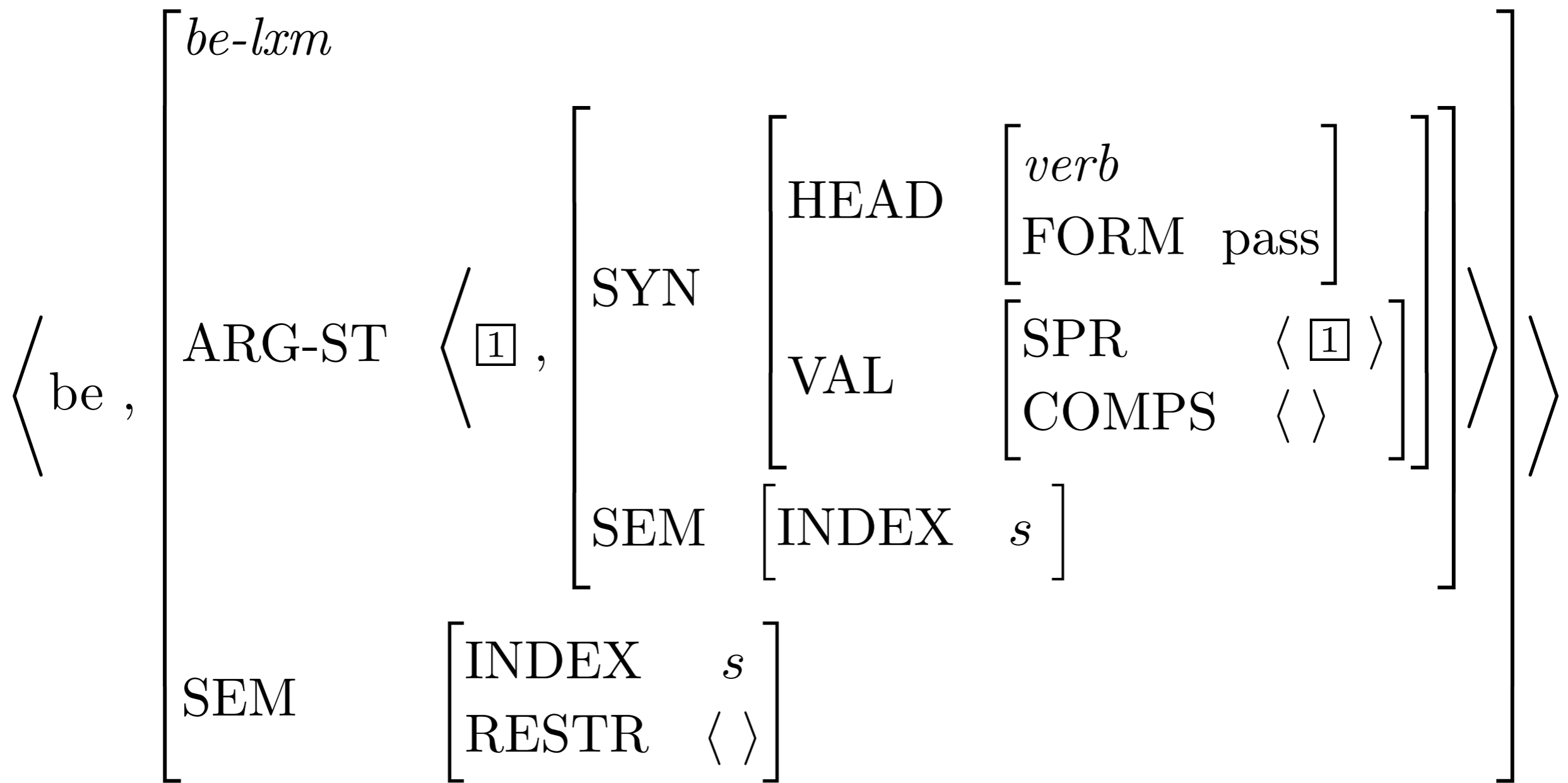
Overview

- Existentials
- Extraposition
- Idioms

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 (next slide).
- 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)

$$\left\langle \text{be} , \left[\begin{array}{l} be-lxm \\ \text{ARG-ST} \left\langle \boxed{1} , \left[\begin{array}{l} \text{SYN} \left[\begin{array}{l} \text{HEAD} \left[\text{PRED} + \right] \\ \text{VAL} \left[\begin{array}{l} \text{SPR} \left\langle \boxed{1} \right\rangle \\ \text{COMPS} \left\langle \right\rangle \end{array} \right] \\ \text{INDEX} \quad s \end{array} \right] \end{array} \right] \right\} \\ \text{SEM} \left[\begin{array}{l} \text{INDEX} \quad s \\ \text{RESTR} \quad \left\langle \right\rangle \end{array} \right] \end{array} \right] \right\rangle \right]$$

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*

$$\left\langle \text{be} , \left[\begin{array}{l} \text{exist-be-lxm} \\ \text{ARG-ST} \left\langle \begin{array}{c} \text{NP} \\ \left[\text{FORM} \text{ there} \right] \end{array} , \boxed{2} , \left[\begin{array}{l} \text{PRED} + \\ \text{VAL} \left[\begin{array}{c} \text{SPR} \langle \boxed{2} \rangle \\ \text{COMPS} \langle \rangle \end{array} \right] \\ \text{SEM} \left[\begin{array}{c} \text{INDEX } s \end{array} \right] \end{array} \right] \right\rangle \end{array} \right] \right\rangle$$

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?
- 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?

$$\left\langle \text{be}, \left[\begin{array}{l} \text{exist-be-lxm} \\ \text{ARG-ST} \left\langle \begin{array}{c} \text{NP} \\ \left[\text{FORM} \text{ there} \right], \boxed{2} \end{array}, \left[\begin{array}{l} \text{PRED} \quad + \\ \text{VAL} \quad \left[\begin{array}{l} \text{SPR} \quad \langle \boxed{2} \rangle \\ \text{COMPS} \quad \langle \rangle \end{array} \right] \\ \text{SEM} \quad \left[\begin{array}{l} \text{INDEX} \quad s \end{array} \right] \end{array} \right] \right\rangle \\ \text{SEM} \quad \left[\begin{array}{l} \text{INDEX} \quad s \\ \text{RESTR} \quad \langle \rangle \end{array} \right] \end{array} \right] \right\rangle$$

The Entry for Existential *there*

\langle there ,	$\left[\begin{array}{l} \text{pron-lxm} \\ \text{SYN} \end{array} \right]$	$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{FORM} \quad \text{there} \\ \text{AGR} \quad \left[\text{PER} \quad 3\text{rd} \right] \end{array} \right] \\ \text{MODE} \quad \text{none} \\ \text{INDEX} \quad \text{none} \\ \text{RESTR} \quad \langle \rangle \end{array} \right]$	\rangle
	$\left[\begin{array}{l} \text{SEM} \end{array} \right]$		

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?

$\left\langle \text{there} , \right.$	$\left[\begin{array}{l} \text{pron-lxm} \\ \text{SYN} \end{array} \right.$	$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{FORM} \quad \text{there} \\ \text{AGR} \quad \left[\text{PER} \quad 3\text{rd} \right] \end{array} \right] \\ \text{MODE} \quad \text{none} \\ \text{INDEX} \quad \text{none} \\ \text{RESTR} \quad \langle \rangle \end{array} \right]$	\rangle
	$\left[\begin{array}{l} \text{SEM} \end{array} \right.$		

Other NPs that don't seem to refer

- *It sucks that the Rockies lost the series.*
- *It is raining.*
- *Andy took **advantage** of the opportunity.*
- *Lou kicked **the bucket**.*

What we need to deal with examples like *It follows that you are wrong*

- A lexical entry for this dummy *it*
- An analysis of this use of *that*
- Entries for verbs that take clausal subjects
(as in *That you are wrong follows*)
- A rule to account for the relationship
between pairs like *That you are wrong
follows* and *It follows that you are wrong*

The Entry for Dummy *it*

\langle it, \rangle	$\left[\begin{array}{l} \text{pron-lxm} \\ \text{SYN} \\ \text{SEM} \end{array} \right]$	
	$\left[\begin{array}{l} \text{HEAD} \\ \text{MODE} \\ \text{INDEX} \\ \text{RESTR} \end{array} \right]$	$\left[\begin{array}{l} \text{FORM} \quad \text{it} \\ \text{AGR} \quad \text{3sing} \end{array} \right]$
		none
		none
		$\langle \rangle$

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*?

$$\left\langle \text{it}, \begin{bmatrix} \text{pron-lxm} \\ \text{SYN} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \text{FORM} & \text{it} \\ \text{AGR} & 3sing \end{bmatrix} \\ \text{SEM} \begin{bmatrix} \text{MODE} & \text{none} \\ \text{INDEX} & \text{none} \\ \text{RESTR} & \langle \rangle \end{bmatrix} \end{bmatrix} \right\rangle$$

A New Type of Lexeme: Complementizers

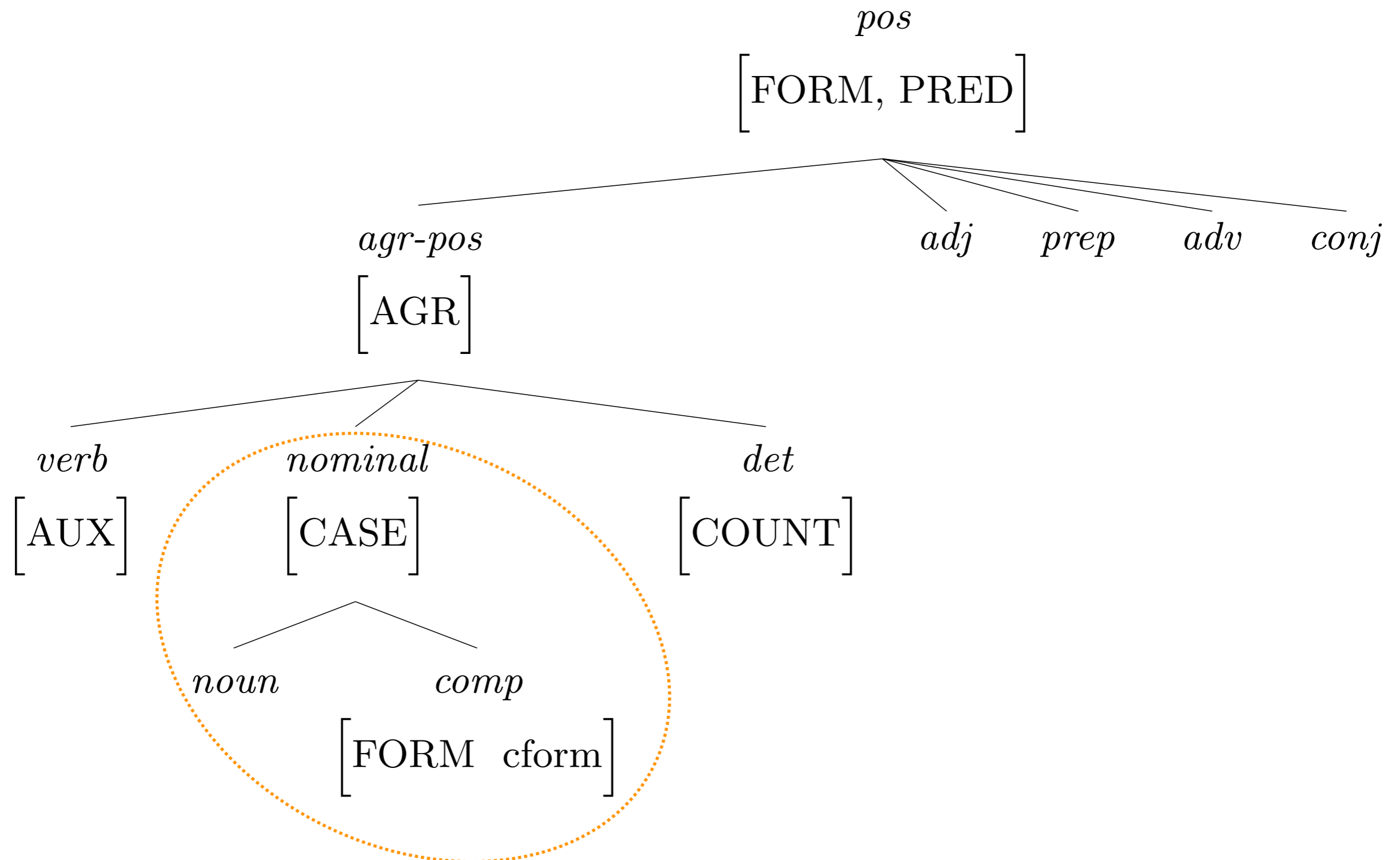
$$\text{comp-lxm} : \left[\begin{array}{l} \text{SYN} \\ \text{ARG-ST} \\ \text{SEM} \end{array} \left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{comp} \\ \text{AGR} \quad 3sing \end{array} \right] \\ \text{VAL} \left[\begin{array}{l} \text{SPR} \quad \langle \rangle \end{array} \right] \end{array} \right] \left[\begin{array}{l} \left\langle \begin{array}{c} \text{S} \\ \left[\text{INDEX} \quad s \right] \end{array} \right\rangle \\ \left[\begin{array}{l} \text{INDEX} \quad s \\ \text{RESTR} \quad \langle \rangle \end{array} \right] \end{array} \right] \right]$$

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?

$$\text{comp-lxm} : \left[\begin{array}{l} \text{SYN} \\ \text{ARG-ST} \\ \text{SEM} \end{array} \left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{comp} \\ \text{AGR} \quad 3sing \end{array} \right] \\ \text{VAL} \left[\begin{array}{l} \text{SPR} \quad \langle \rangle \end{array} \right] \end{array} \right] \left[\begin{array}{l} \left\langle \begin{array}{c} \text{S} \\ \left[\text{INDEX} \quad s \right] \end{array} \right\rangle \\ \left[\begin{array}{l} \text{INDEX} \quad s \\ \text{RESTR} \quad \langle \rangle \end{array} \right] \end{array} \right] \right]$$

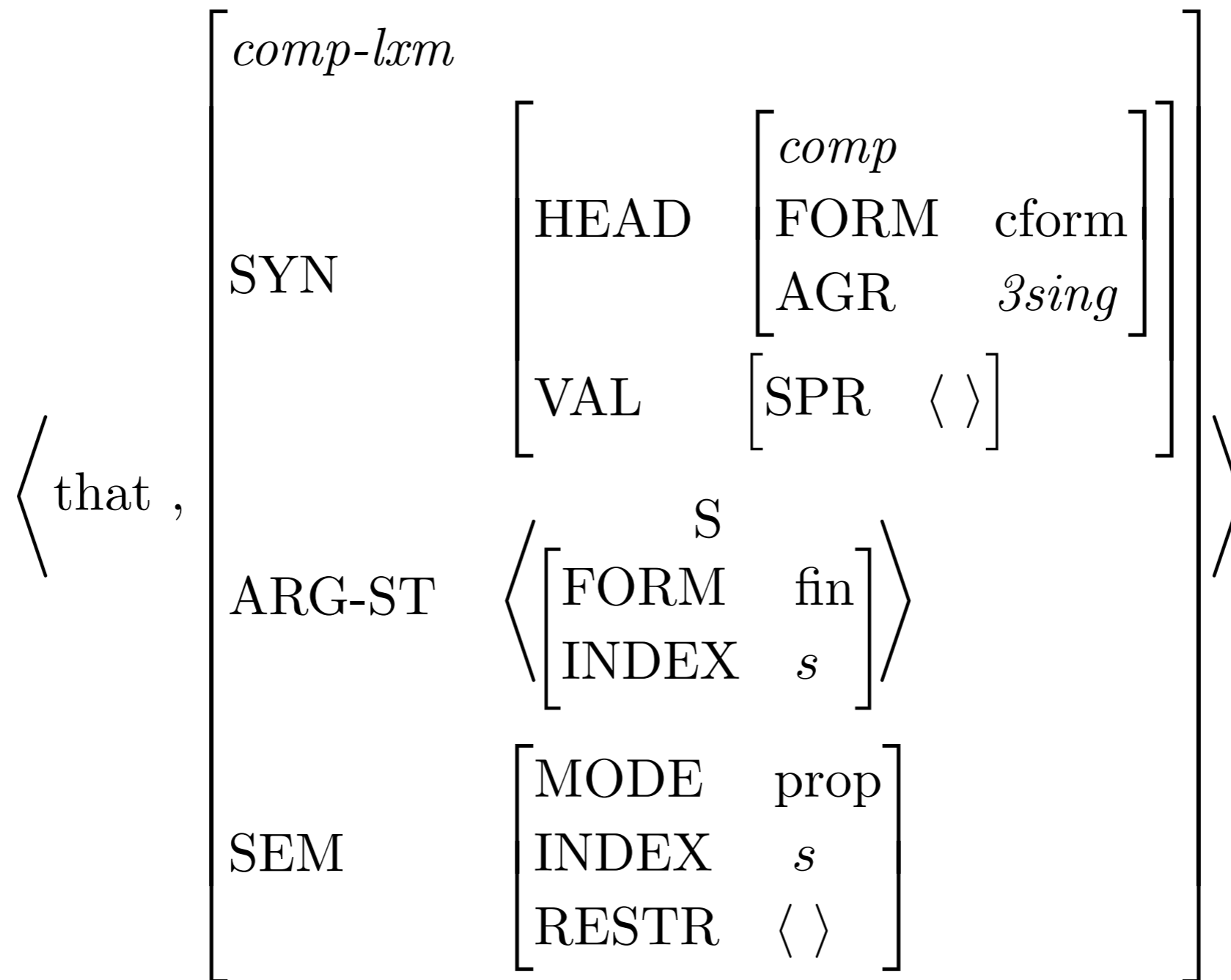
The Type *comp*



The Lexical Entry for Complementizer *that*

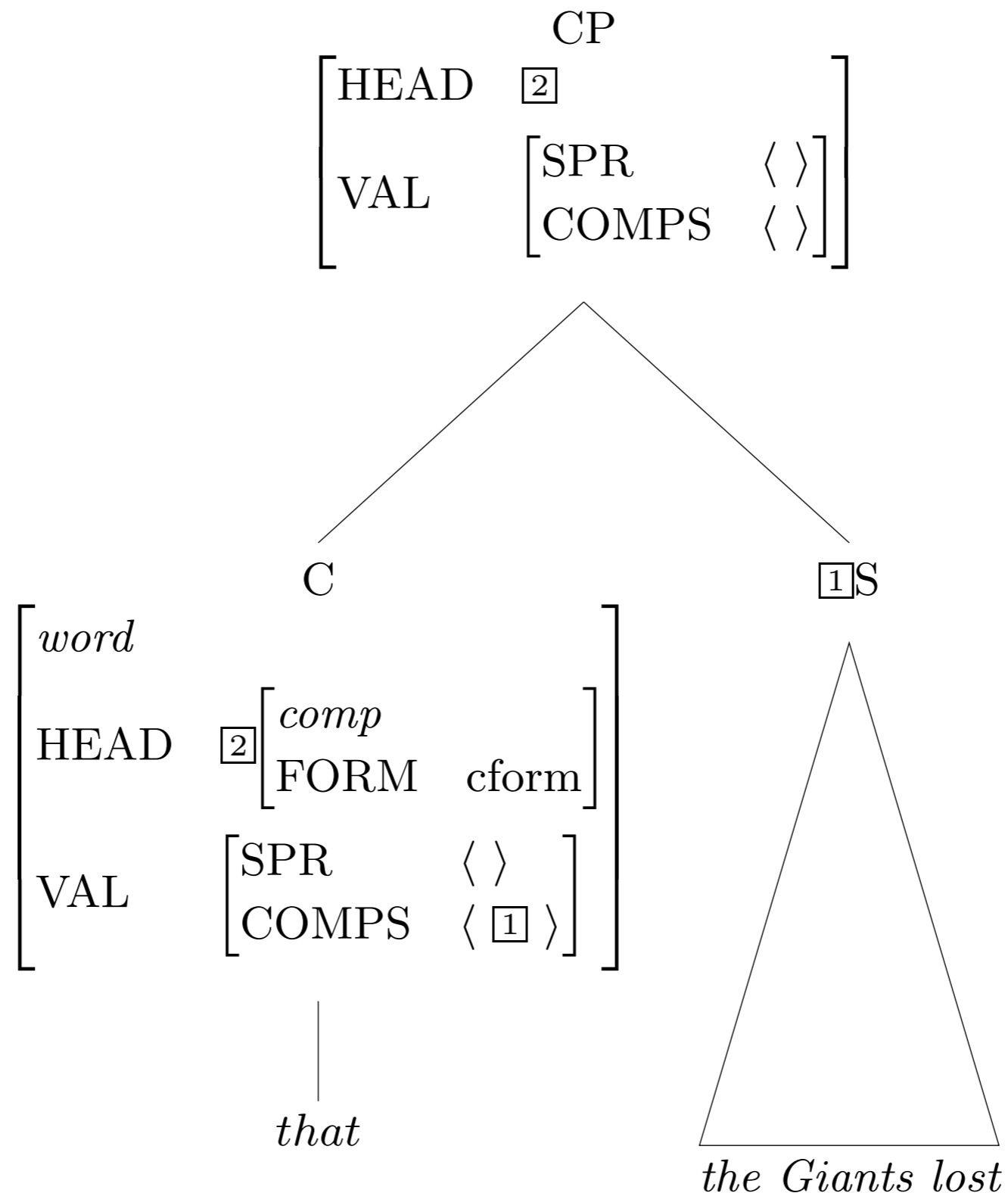
$$\left\langle \text{that} , \begin{bmatrix} \textit{comp-lxm} \\ \text{ARG-ST} \quad \langle [\text{FORM fin}] \rangle \\ \text{SEM} \quad [\text{MODE prop}] \end{bmatrix} \right\rangle$$

...and with inherited information filled in

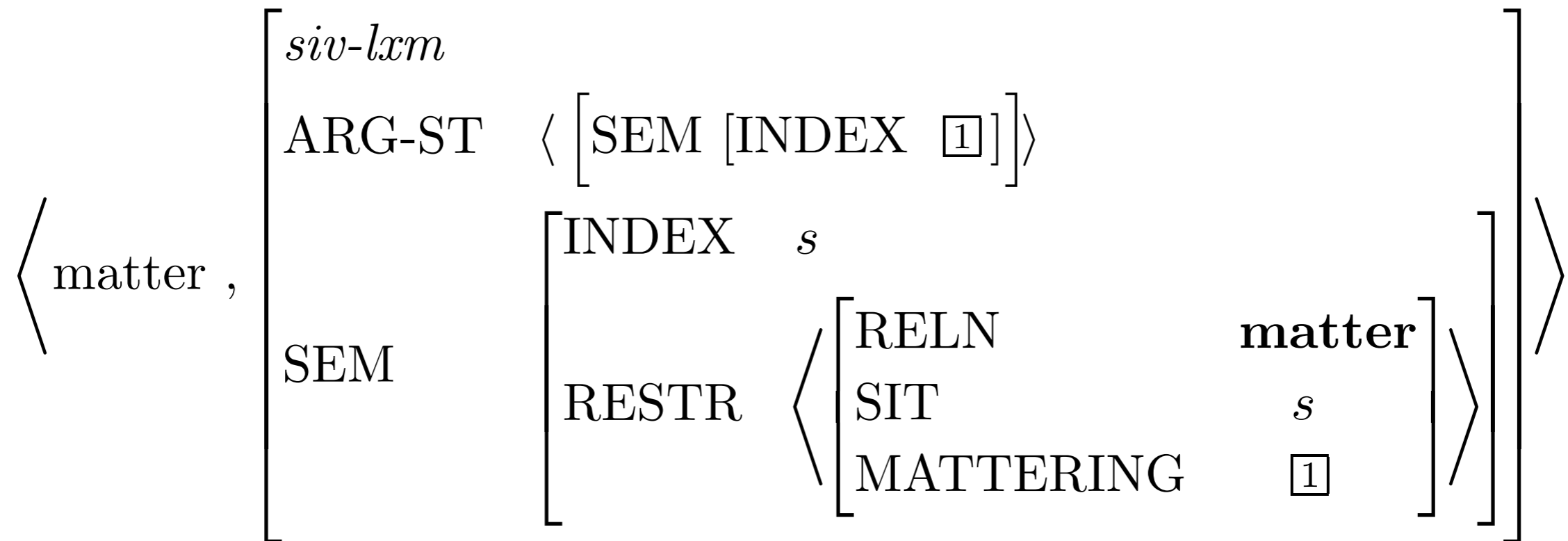


Question: Where did [FORM cform] come from?

Structure of a Complementizer Phrase



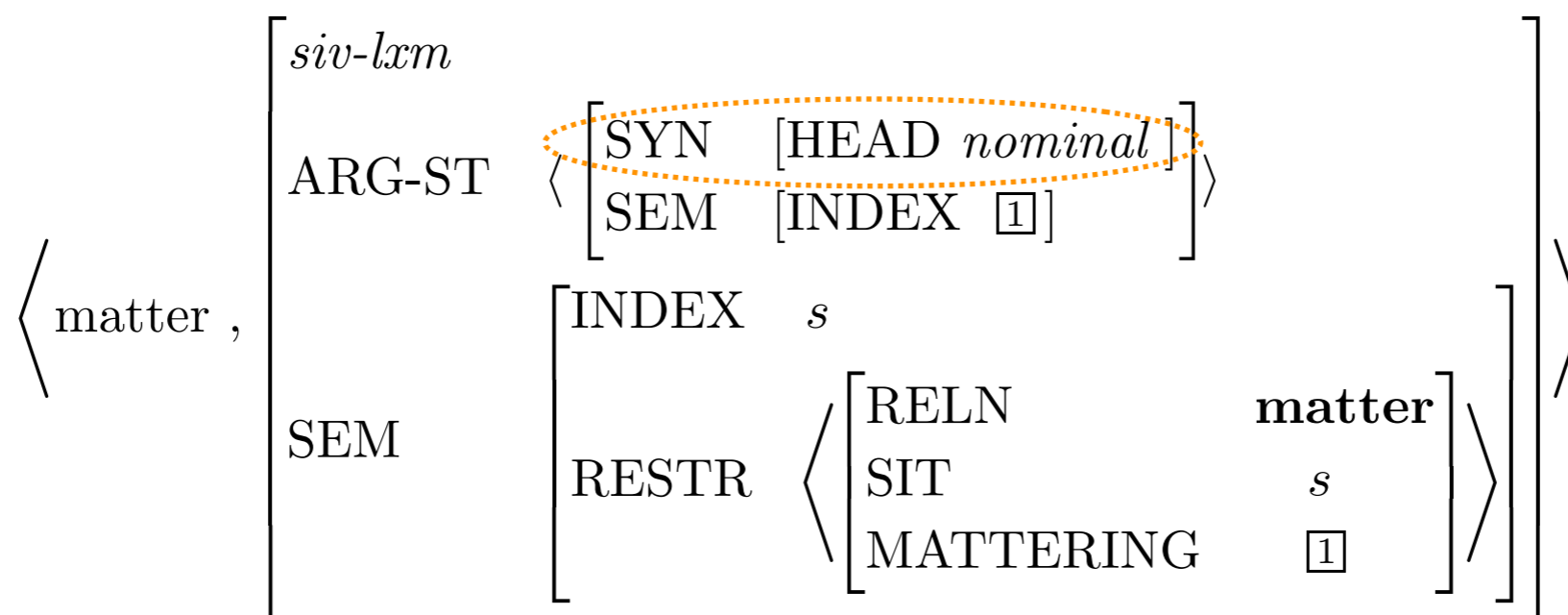
Sample Verb with a CP Subject



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:
That Bush won matters vs. **Bush won matters*
 - Argument-marking PPs are semantically identical to their object NPs, but we get:
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*.

The Extraposition Lexical Rule

$$\left[\begin{array}{l} \text{INPUT} \\ \text{OUTPUT} \end{array} \right] \begin{array}{l} \left\langle X, \left[\text{SYN} \left[\text{VAL} \left[\begin{array}{l} \text{SPR} \\ \text{COMPS} \end{array} \right] \left[\begin{array}{l} \langle \boxed{2} \text{CP} \rangle \\ \boxed{A} \end{array} \right] \right] \right] \right\rangle \\ \left\langle Y, \left[\text{SYN} \left[\text{VAL} \left[\begin{array}{l} \text{SPR} \\ \text{COMPS} \end{array} \right] \left[\begin{array}{l} \langle \text{NP}[\text{FORM it}] \rangle \\ \boxed{A} \oplus \langle \boxed{2} \rangle \end{array} \right] \right] \right] \right\rangle \end{array} \right]$$

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

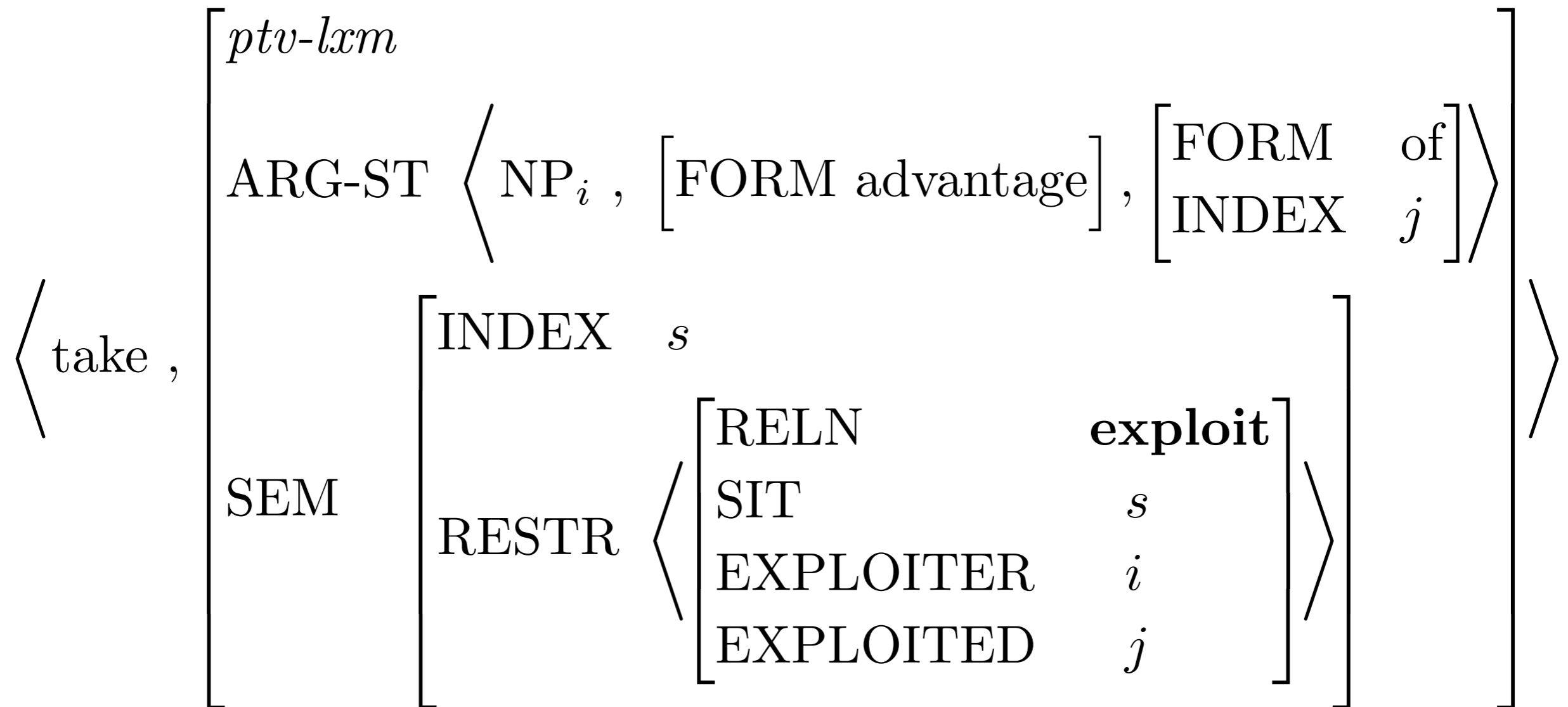
Extraposition with Verbs whose COMPS Lists are Nonempty

- *It worries me that war is imminent.*
- *It occurred to Pat that Chris knew the answer.*
- *It endeared you to Andy that you wore a funny hat.*

Another Nonreferential Noun

\langle advantage ,	$\left[\begin{array}{l} \textit{massn-lxm} \\ \text{SYN} \left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{FORM} \quad \textit{advantage} \\ \text{AGR} \quad \textit{3sing} \end{array} \right] \\ \text{SEM} \left[\begin{array}{l} \text{MODE} \quad \textit{none} \\ \text{INDEX} \quad \textit{none} \\ \text{RESTR} \quad \langle \rangle \end{array} \right] \end{array} \right] \end{array} \right]$			\rangle

The Verb that Selects *advantage*



Our analyses of idioms and passives interact...

- We generate

Advantage was taken of the situation by many people.

Tabs are kept on foreign students.

- But not:

Many people were taken advantage of.

- Why not?

Overview

- Existentials (*there, be*)
- Extraposition (*that, it, LR*)
- Idioms

Reading Questions

- Does it really make sense for *be* to be semantically empty in sentences like *Kim is a doctor*?
- Why do we need *a janitor* to have a non-empty SPR value?
- Why not treat that *be* as a tv-lxm?
- Fn 2 (p. 335) shows how in a copular construction NP *a scholar* is used with mode 'prop', since it predicates a property of 'scholarliness', as opposed to a simple reference. How about a sentence like *Pat is the scholar*? Would the scholar still denote a property? Is the distinction between prop and ref always clear-cut?

Reading Questions

- Why make *there* a noun?
- The lexical entry for *there* is underspecified for NUM, because it occurs in both singular and plural constructions. But how exactly does its NUM value get specified? In the sentences using existential *there*, the verb *be* seems to agree with the second member of its ARG-ST, represented by box 2 on page 337. How does the constituent represented by box 2 share its AGR features with *there/be*? Would we have to add constraints to the lexical entry for existential *be*? Or should we state that the second member of ARG-ST shared AGR features with *there*?

Reading Questions

- Why is PRED constrained on verb-lxm? Are adjectives also constrained for PRED? What about nouns and prepositions?
- Are predicative prepositions [PRED +] and argument marking prepositions [PRED -]?
- If the semantics of *be* is empty then why do we still need SEM [INDEX s] in the lex entry for *be*?

Reading Questions

- *There is a dog in the park/A dog is in the park* have the same RESTR. Is there a similar pair available for
There is a question?
- Is this the same there? *There exist plenty of varieties of apples.*

Reading Questions

- Why do we have an extraposition LR that treats the < CP , ... > frame as basic rather than an interposition rule that goes the other way around?
- Does this mean that a CP would always be marked for CASE in a fully detailed tree, or that it would take the appropriate CASE whenever that CASE is required?
- Would there be a situation where the CASE of a CP would be "passed inside" to affect the contents of the CP, like an argument-marking preposition "exposes" its contents so that reflexive pronouns are handled properly?

Reading Questions

- Why can't we store the 'keep tabs' idiom as a word with spaces?
- How do we tell when to choose the idiomatic v. non-idiomatic readings?
- How do we capture the semantics of modified idiom chunks? (great advantage was taken...)
- What about proverbs? Are they stored like idioms?

Reading Questions

- Reading this chapter, it seems like FORM is kind of a catch-all for something we want to restrict selections for, but don't have an actual category for it, or something that only applies to that one word. But it also seems like we're using it for a more general purpose in the case of verbs, where it tells us a little bit deeper information about the verb. What are the values that FORM takes, or are we just supposed to use it for whatever it's convenient to put in there so we can select for it?

Reading Questions

- The [FORM advantage], [FORM tabs], etc for idiomatic nouns seems kind of counterproductive in the quest of simplifying the grammar. There're probably hundreds, if not thousands, of idiomatic nouns. Perhaps a [FORM id-noun] would be better (but then, of course, you could use any of the many idiomatic nouns in any idiom; so that wouldn't work, but there has to be something better than a FORM for each one).