Ling 566
Nov 7, 2013

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*

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

Copula (generalized)

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

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*

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

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?

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

The Entry for Existential *there*

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

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?

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

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*

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

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*?

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

A New Type of Lexeme: Complementizers

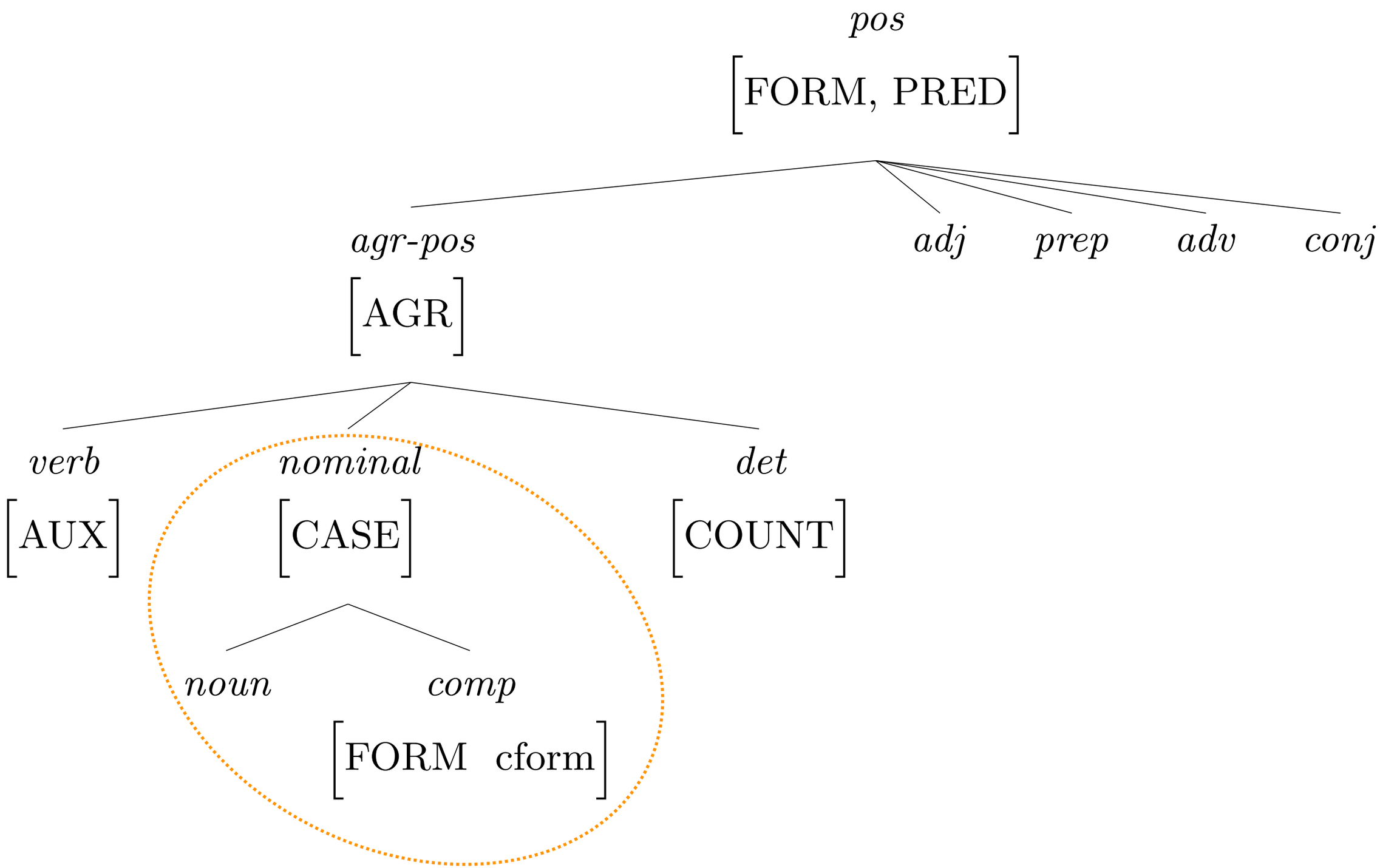
$$comp\text{-}lxm : \left[\begin{array}{ll} \text{SYN} & \left[\begin{array}{ll} \text{HEAD} & \left[\begin{array}{ll} comp & \\ \text{AGR} & 3sing \end{array}\right] \\ \text{VAL} & \left[\text{SPR} \quad \langle\ \rangle\right] \end{array}\right] \\ \text{ARG-ST} & \left\langle \left[\begin{array}{c}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

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?

$$\textit{comp-lxm}: \begin{bmatrix} \text{SYN} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \textit{comp} \\ \text{AGR} \quad \textit{3sing} \end{bmatrix} \\ \text{VAL} & \begin{bmatrix} \text{SPR} & \langle\ \rangle \end{bmatrix} \end{bmatrix} \\ \text{ARG-ST} & \left\langle \begin{bmatrix} \text{S} \\ \text{INDEX} \quad s \end{bmatrix} \right\rangle \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s \\ \text{RESTR} & \langle\ \rangle \end{bmatrix} \end{bmatrix}$$

The Type *comp*



The Lexical Entry for Complementizer *that*

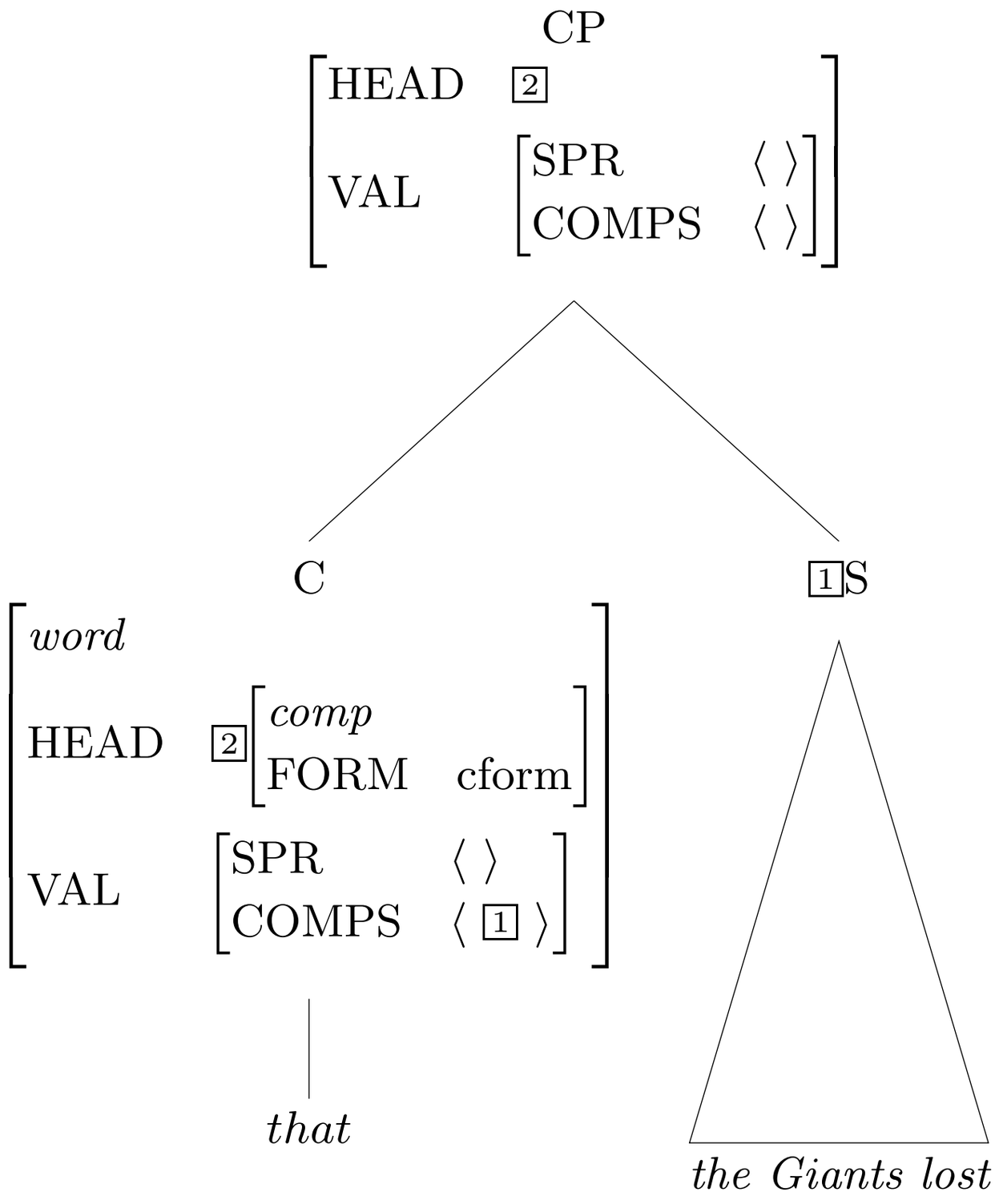
$$\left\langle \text{that} \ , \begin{bmatrix} \textit{comp-lxm} & \\ \text{ARG-ST} & \left\langle \left[\text{FORM fin}\right] \right\rangle \\ \text{SEM} & \left[\text{MODE prop}\right] \end{bmatrix} \right\rangle$$

…and with inherited information filled in

$$\left\langle \text{that} \;,\; \begin{bmatrix} \textit{comp-lxm} \\ \text{SYN} \quad \begin{bmatrix} \text{HEAD} \quad \begin{bmatrix} \textit{comp} \\ \text{FORM} \quad \text{cform} \\ \text{AGR} \quad \textit{3sing} \end{bmatrix} \\ \text{VAL} \quad \begin{bmatrix} \text{SPR} \quad \langle\,\rangle \end{bmatrix} \end{bmatrix} \\ \text{ARG-ST} \quad \left\langle \begin{bmatrix} \text{FORM} \quad \text{fin} \\ \text{INDEX} \quad s \end{bmatrix} \right\rangle_{\text{S}} \\ \text{SEM} \quad \begin{bmatrix} \text{MODE} \quad \text{prop} \\ \text{INDEX} \quad s \\ \text{RESTR} \quad \langle\,\rangle \end{bmatrix} \end{bmatrix} \right\rangle$$

Question: Where did [FORM cform] come from?

Structure of a Complementizer Phrase



Sample Verb with a CP Subject

$$\left\langle \text{matter} , \left[\begin{array}{ll} \textit{siv-lxm} & \\ \text{ARG-ST} & \left\langle \left[\text{SEM } [\text{INDEX } \boxed{1}] \right] \right\rangle \\ \text{SEM} & \left[\begin{array}{ll} \text{INDEX} & s \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \textbf{matter} \\ \text{SIT} & s \\ \text{MATTERING} & \boxed{1} \end{array} \right] \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

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.

$$\left\langle \text{matter} , \left[\begin{array}{ll} \textit{siv-lxm} & \\ \text{ARG-ST} & \left\langle \left[\begin{array}{ll} \text{SYN} & [\text{HEAD } \textit{nominal}] \\ \text{SEM} & [\text{INDEX } \boxed{1}] \end{array} \right] \right\rangle \\ \text{SEM} & \left[\begin{array}{ll} \text{INDEX} & s \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \textbf{matter} \\ \text{SIT} & s \\ \text{MATTERING} & \boxed{1} \end{array} \right] \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

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

The Extraposition Lexical Rule

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

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

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

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

The Verb that Selects *advantage*

$$\left\langle \text{take} , \left[\begin{array}{l} \textit{ptv-lxm} \\ \text{ARG-ST} \left\langle \text{NP}_i , \left[\text{FORM advantage}\right] , \left[\begin{array}{ll}\text{FORM} & \text{of} \\ \text{INDEX} & j\end{array}\right]\right\rangle \\ \text{SEM} \left[\begin{array}{l} \text{INDEX} \quad s \\ \text{RESTR} \left\langle \left[\begin{array}{ll}\text{RELN} & \textbf{exploit} \\ \text{SIT} & s \\ \text{EXPLOITER} & i \\ \text{EXPLOITED} & j\end{array}\right]\right\rangle \end{array}\right] \end{array}\right] \right\rangle$$

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

- In Chap 11 we treat 'there' as a dummy NP. Why don't we treat it as PP, as before? It seems that existential 'be' does come with other PPs too:

- Here is a table.
- On the table is a book.
- In the book are HPSG examples.
- Here are two homework problems.

- Wouldn't a lexical entry for 'be' with a PP specifier be more appropriate (and that way we wouldn't have a dummy NP entry for 'there')?

Reading Questions

- What about a phrase like, "...and then there's me," used to contrast oneself from others. Does it not matter that "me" is first person because "there" is not co-indexed with it?
- How does one decide to make the INDEX value none in some cases where the RESTR list is empty, but in other cases have INDEX set to a value even though the RESTR list is empty like in the entry for be that takes a passive complement.

Reading Questions

- In example (7) does the PP have an AGR value? I thought that specifiers and their heads had to agree.
- Like others I'm not too sure I understand where the SPR value of P is coming from. How is that supressed when using pred prepositions as modifiers of, say, VPs?
- In "The book is under the table", how is the MOD value of the predp-lxm filled in?

Reading Questions

- Why do we make both types of prepositions lexemes, but not have a single preposition lexeme type which give rise the two types of prepositions via two lexical rules?

Reading Questions

- So, we define PRED (on p. 334) as a feature that tells us whether the verb in question can serve as an argument for be or not. And then we say that be takes something that is [PRED+] as an argument. Isn't this circular? Will we be redefining PRED later?
- If not, does that imply that the only way is indicating PRED for every adj lexeme respectively?
- A contrast is made between "fond" (PRED +) and "mere" (PRED -). How can we generalize the PRED feature for adjectives, since we don't have any really productive rules for const-lxms?

Reading Questions

- On page 334, the text states that "[be] contributes nothing to the semantics of the sentences; it is just a syntactic placeholder." I know we haven't yet dealt with tense in the SEM values of feature structures, but I was wondering: in past tense sentences using the "be" verb, is this still the case? I can't see any other source of the tense information in the sentence:
- "The book was under the table."
- Or is this information somehow encoded into the predicate RESTR values instead?

Reading Questions

- Are feature structures embedded within feature structures inside the semantics actually not licensed by the rules of the formalism, or do working linguists just not want to look at feature structures that look like M.C. Escher drawings?

Reading Questions

- On pg. 342 of the text, it states that the verb "hope" can take CP but not NP complements. How does this apply to a phrase like "I hope you're happy"? "I hope that you're happy" also works, does this mean that "that" is implied in the phrase?

- What's the difference between a phrasal verb/a MWE/ an idiom/a word with spaces?