Sections 11.4-11.6

Non-Referential NPs and Extraposition

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Review

- Last time we analyzed existential sentences starting with *there*, like

  There is a bird in the yard

- This use of *there* is the first non-referential NP we have seen
- Today we'll look at others, including some uses of *it* and certain idiomatic uses of NPs.
- These non-referential NPs are important for the argumentation in the following two chapters.

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Other NPs that don't seem to refer

- *It sucks that life is short.*
- *It is raining.*
- *Andy took advantage of the opportunity.*
- *Lou kicked the bucket.*

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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*

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The Entry for Dummy *it*

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

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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*?

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

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A New Type of Lexeme: Complementizers

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

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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?

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

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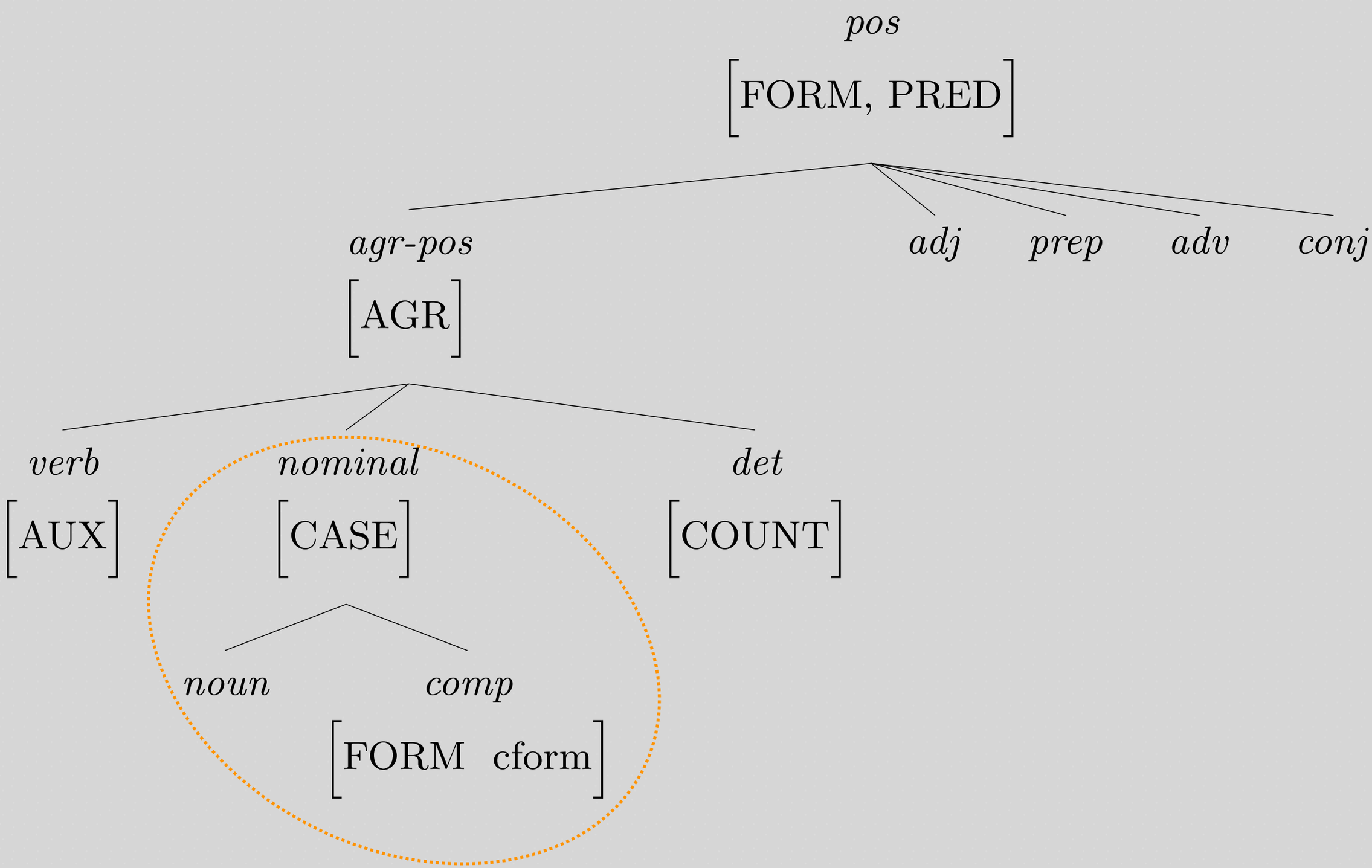
The Type *comp*



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The Lexical Entry for Complementizer *that*

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

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…and with inherited information filled in

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

Questions: Where did [AGR *3sing*] come from? Why do we include it?

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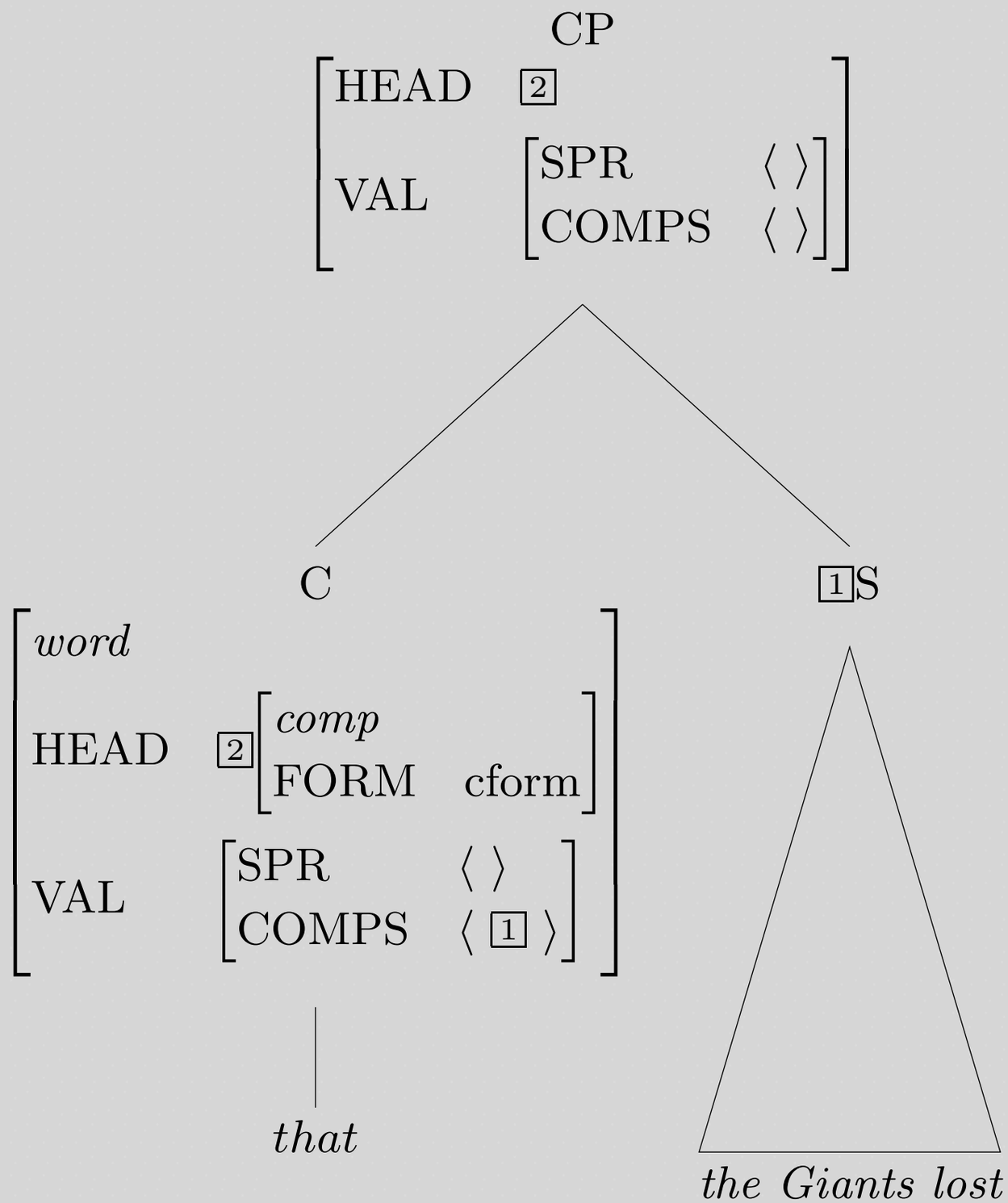
Structure of a Complementizer Phrase



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Sample Verb with a CP Subject

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

Note: the only constraint on the first argument is semantic

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A Problem

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

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

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

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The Extraposition Lexical Rule

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

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

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Why Extraposition is a *pi-rule*

- It can't be an inflectional rule. Why?
- It has to apply to the output of Passive to get:

  It is known that polls are fallible.

  - This requires modifying the type *tv-lxm*, saying the obligatory complement is of type *nominal*
- We can't let Passive apply to its output, or we get:

  **That the market tanked was mattered (by it)*.
- Making Extraposition a *pi-rule* (word to word) forces it to apply after Passive

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Extraposition with Verbs whose COMPS Lists are Nonempty

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

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Idioms

- Term used for multi-word expressions whose meanings cannot be composed from the standard meanings of the words in them
- Examples:

  take advantage of — *keep tabs on*
  spill the beans — *let the cat out of the bag*
  kick the bucket — *by and large*

- Our analysis for (most) VP idioms: put all the meaning in a special entry for the verb and make it select the specific nouns
- This works for many examples, but maybe not all: idiomatic nouns may carry some of the idiomatic meaning.

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Another Nonreferential Noun

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

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The Verb that Selects *advantage*

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

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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.

- That would require another lexical entry, in which *take advantage of* is a transitive verb.

  - Question: Should we generalize passive to PP complements? (some? all?) What about modifiers?

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