

# Ling 566

## Nov 10, 2016

Non-referential NPs, Expletives, and Extraposition

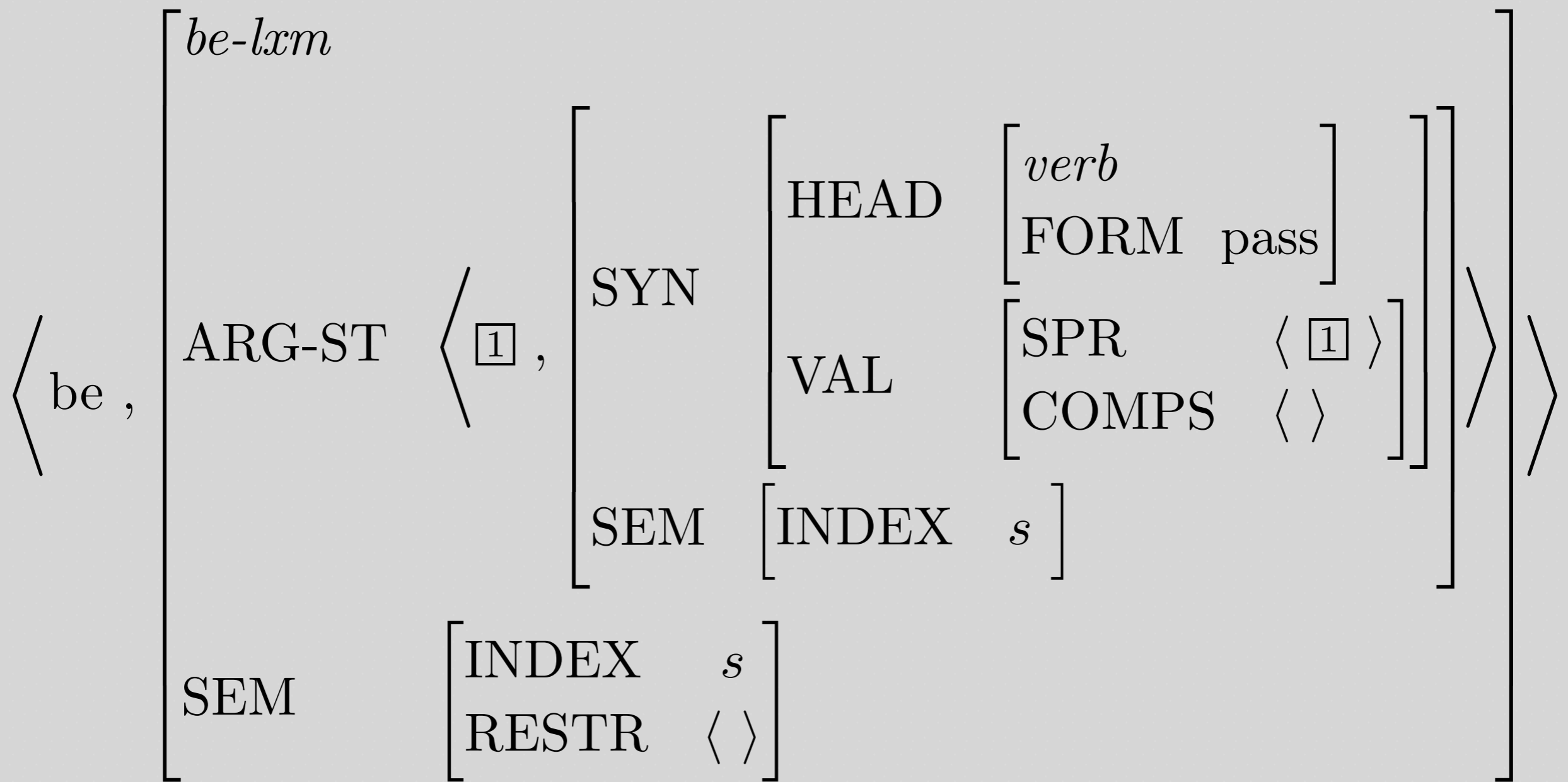
# Overview

- Existentials
- Extraposition
- Idioms

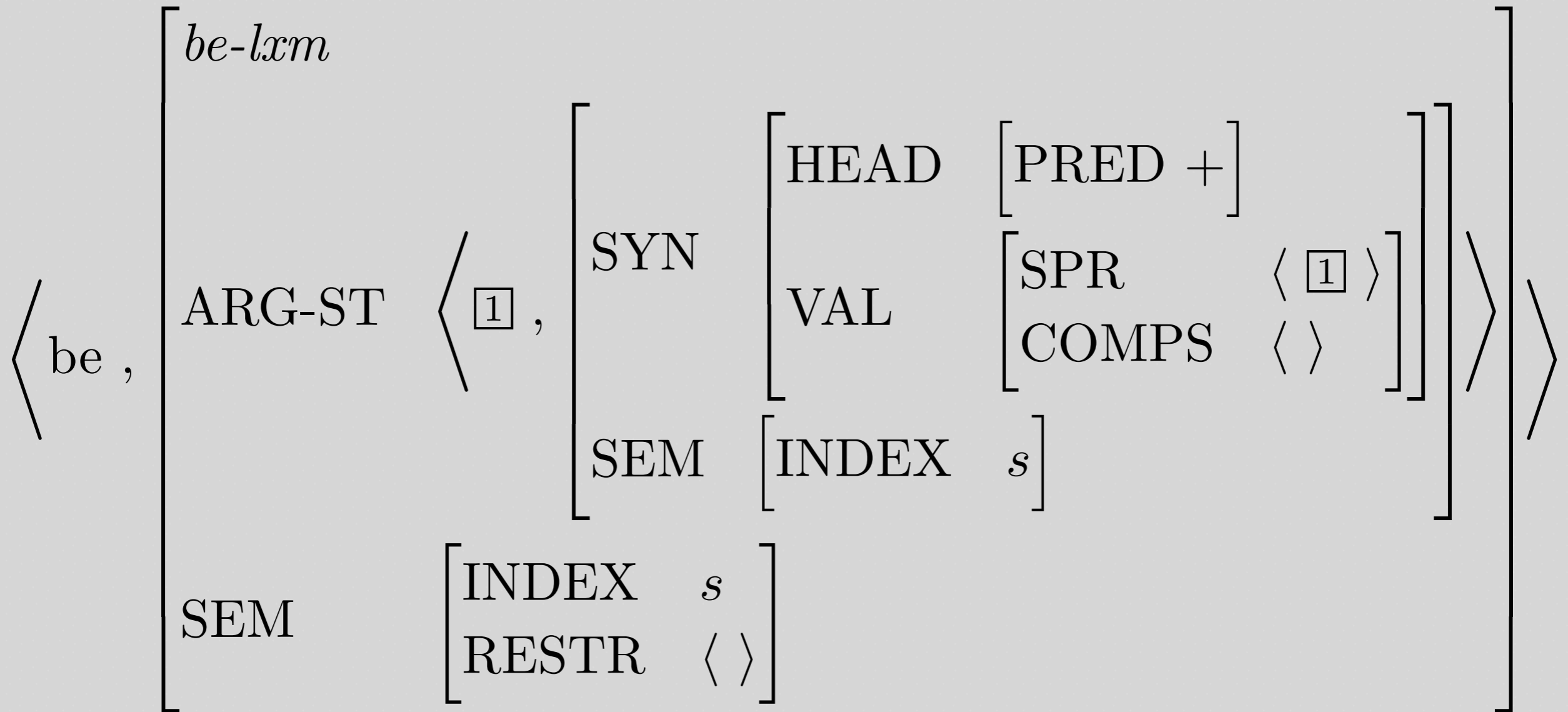
# Where We Are, and Where We're Going

- 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)

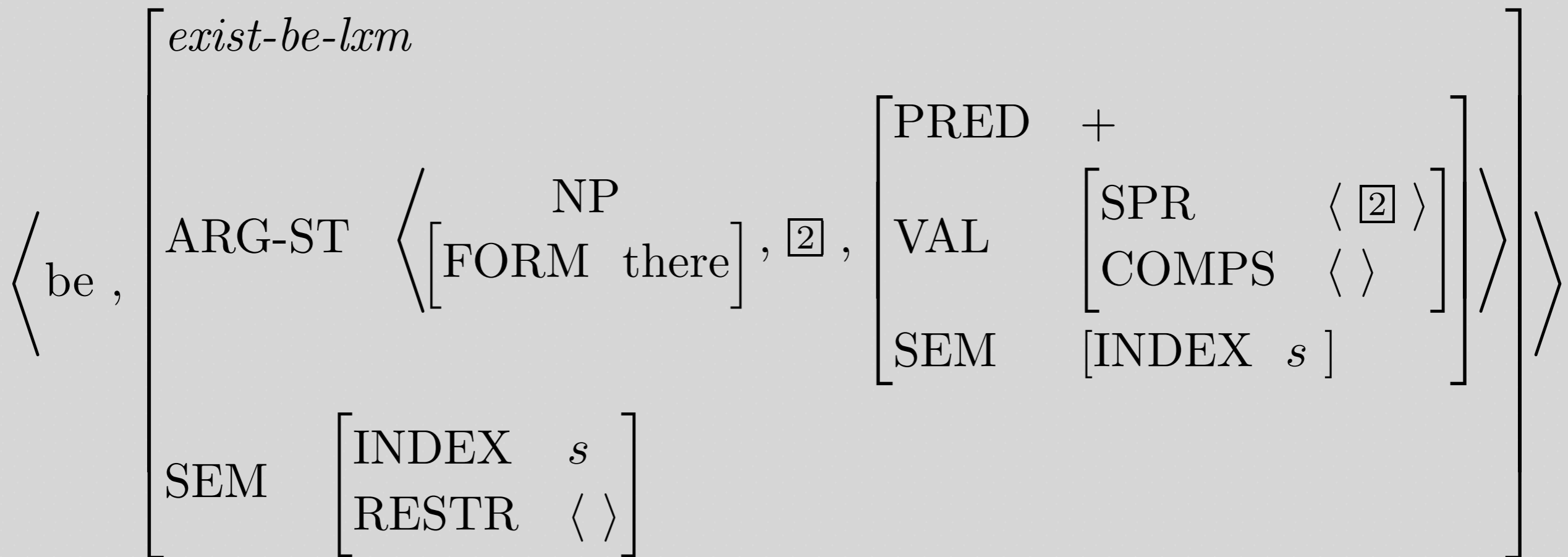


# Existentials

- 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*.

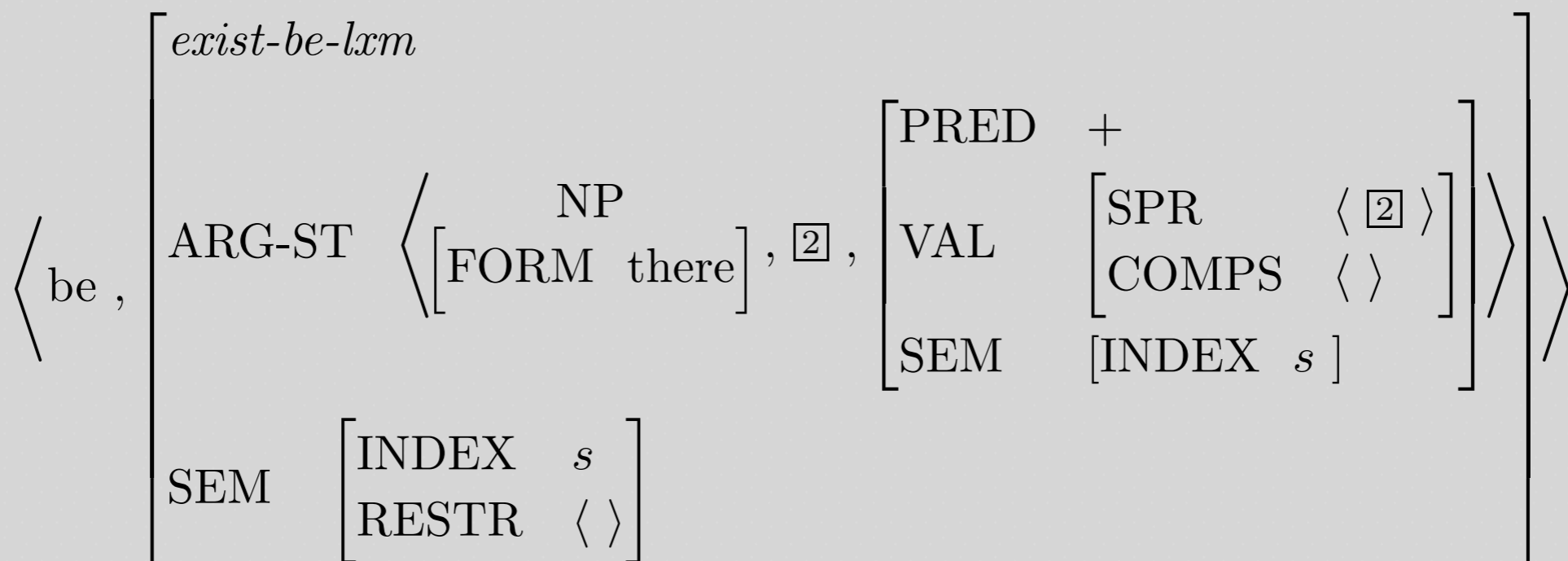


# Lexical Entry for the Existential *be*



# 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?
- 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?





# The Entry for Existential *there*

$\langle$ there ,	<i>pron-lxm</i>			
	SYN	HEAD	FORM there	
		AGR	PER 3rd	
	SEM	MODE none		
		INDEX none		
		RESTR $\langle \rangle$		

# 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?

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

# 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*

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

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



# A New Type of Lexeme: Complementizers

*comp-lxm* :

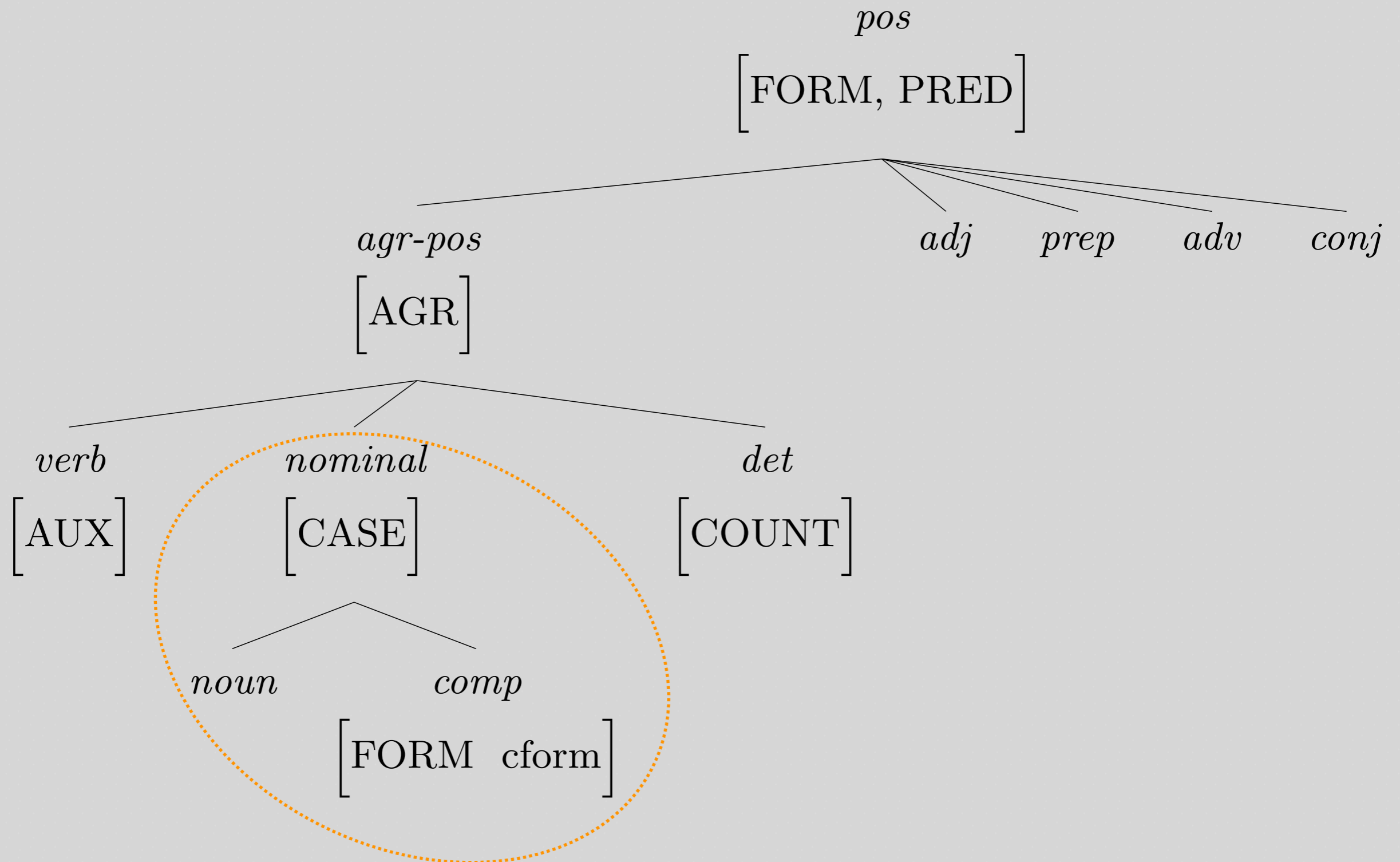
SYN	<table border="1"> <tr> <td>HEAD</td> <td> <table border="1"> <tr> <td><i>comp</i></td> </tr> <tr> <td>AGR</td> <td><i>3sing</i></td> </tr> </table> </td> </tr> <tr> <td>VAL</td> <td> <table border="1"> <tr> <td>SPR</td> <td><math>\langle \rangle</math></td> </tr> </table> </td> </tr> </table>	HEAD	<table border="1"> <tr> <td><i>comp</i></td> </tr> <tr> <td>AGR</td> <td><i>3sing</i></td> </tr> </table>	<i>comp</i>	AGR	<i>3sing</i>	VAL	<table border="1"> <tr> <td>SPR</td> <td><math>\langle \rangle</math></td> </tr> </table>	SPR	$\langle \rangle$
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INDEX	<i>s</i>									
RESTR	$\langle \rangle$									

# 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?

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

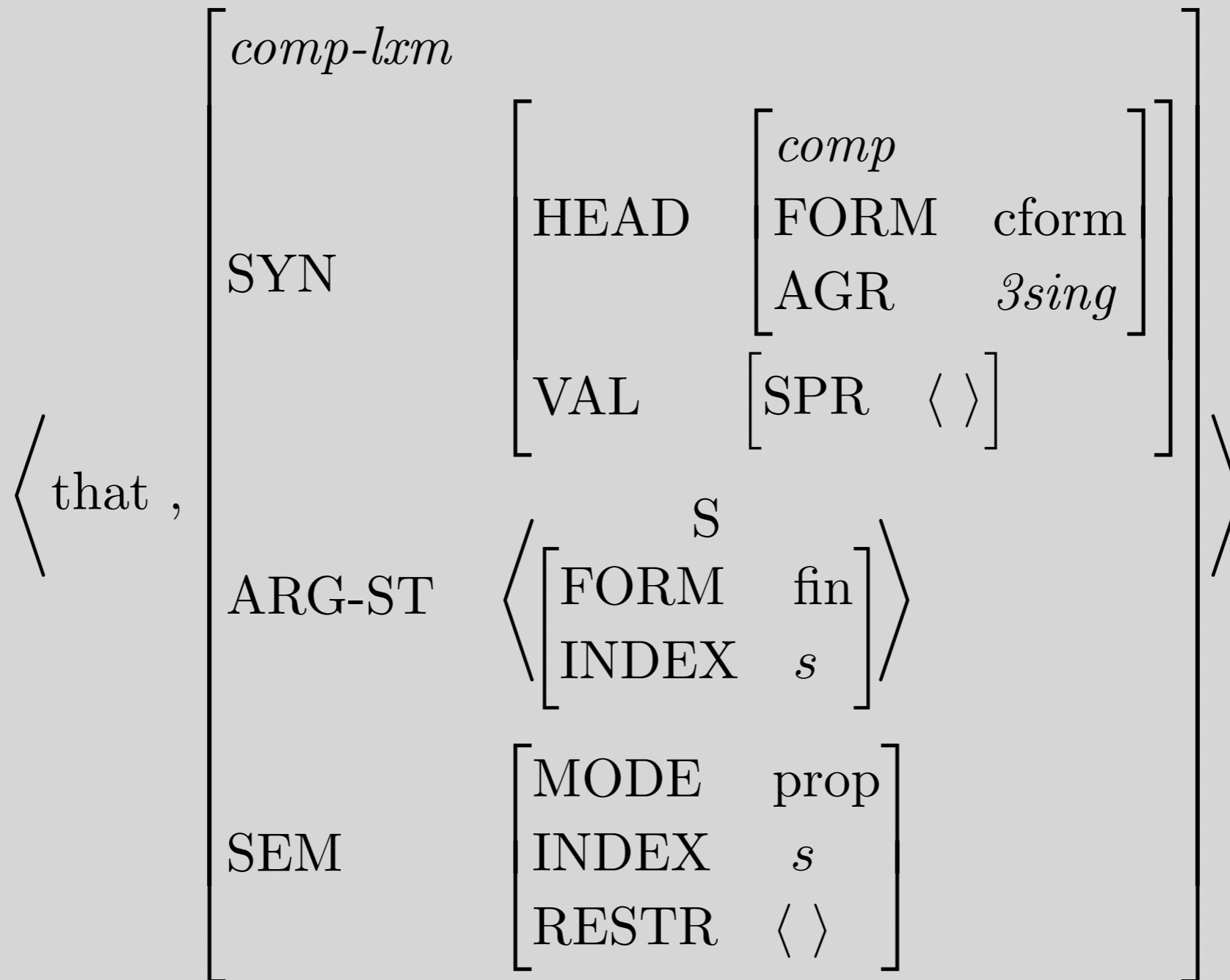
# The Type *comp*



# The Lexical Entry for Complementizer *that*

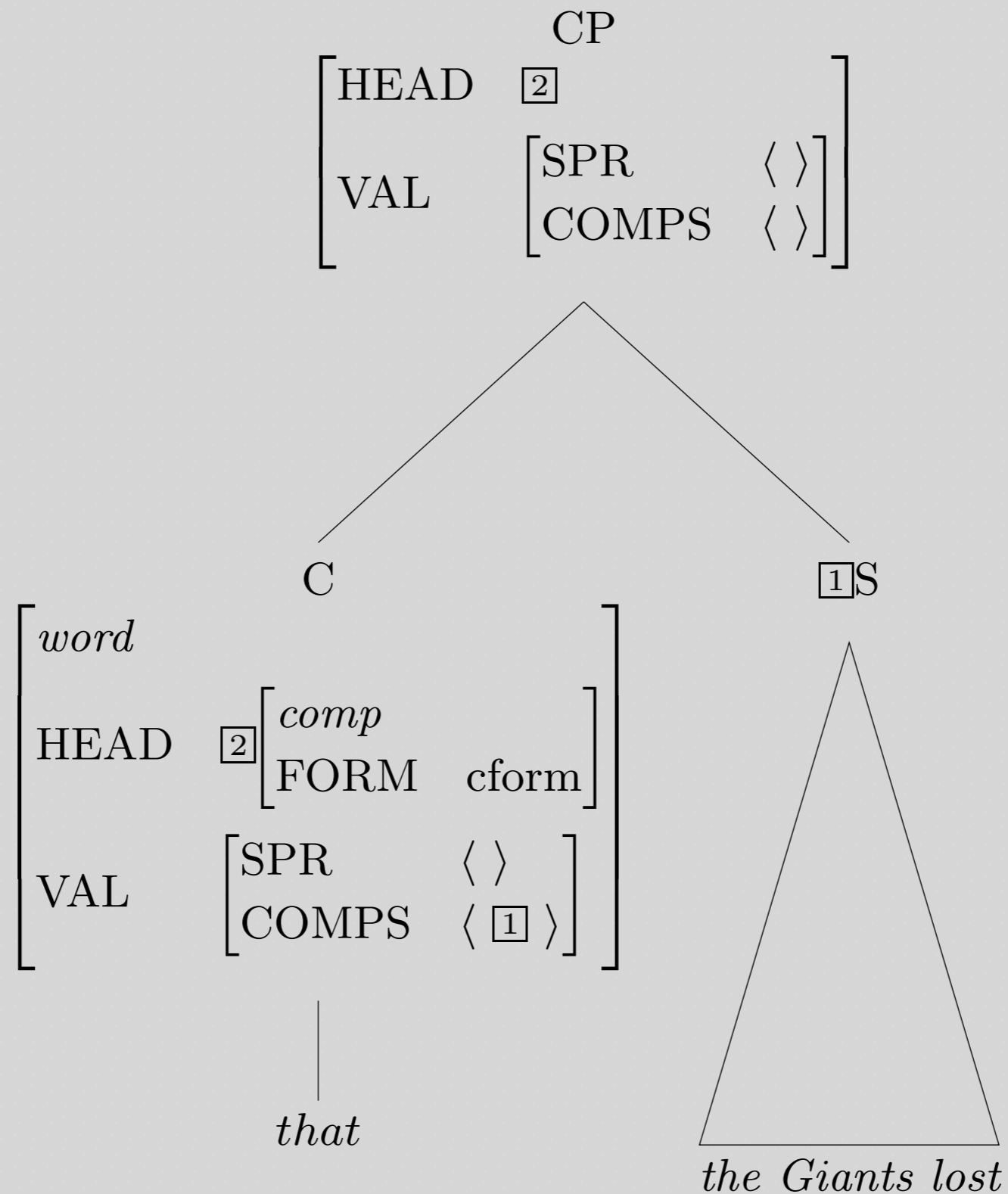
$$\left\langle \text{that} , \begin{bmatrix} \textit{comp-lxm} \\ \text{ARG-ST} \quad \langle [\text{FORM fin}] \rangle \\ \text{SEM} \quad [\text{MODE prop}] \end{bmatrix} \right\rangle$$

...and with inherited information filled in



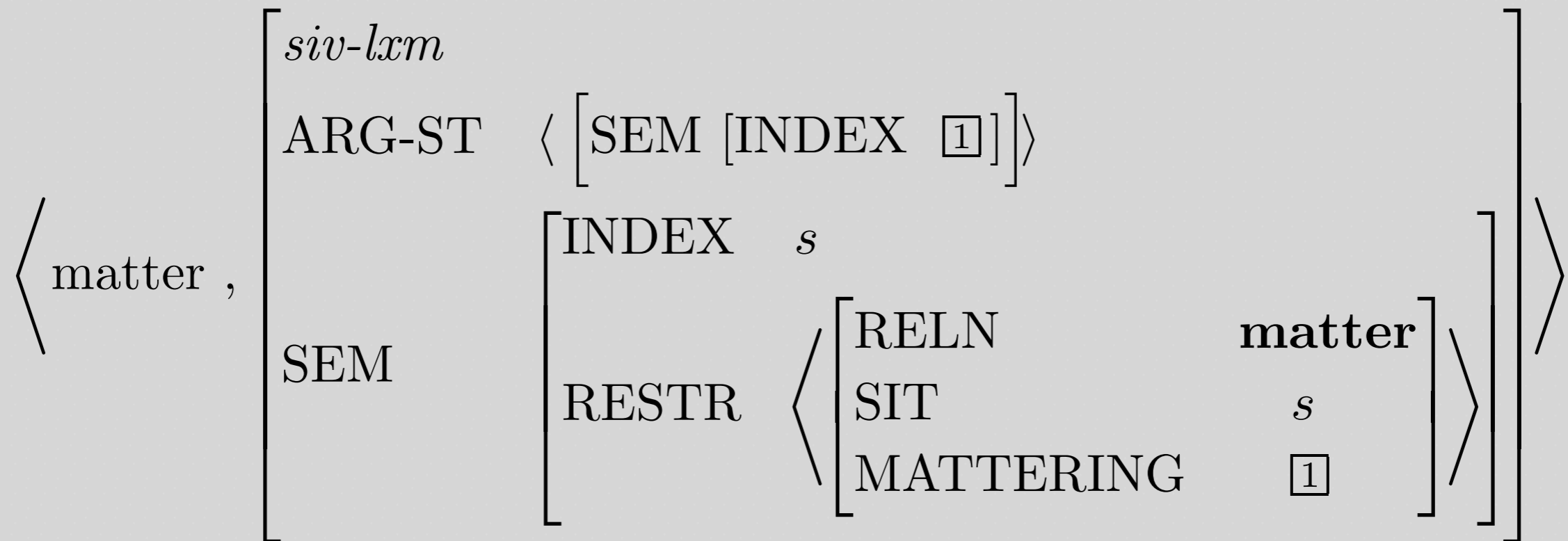
Question: Where did [FORM cform] come from?

# Structure of a Complementizer Phrase





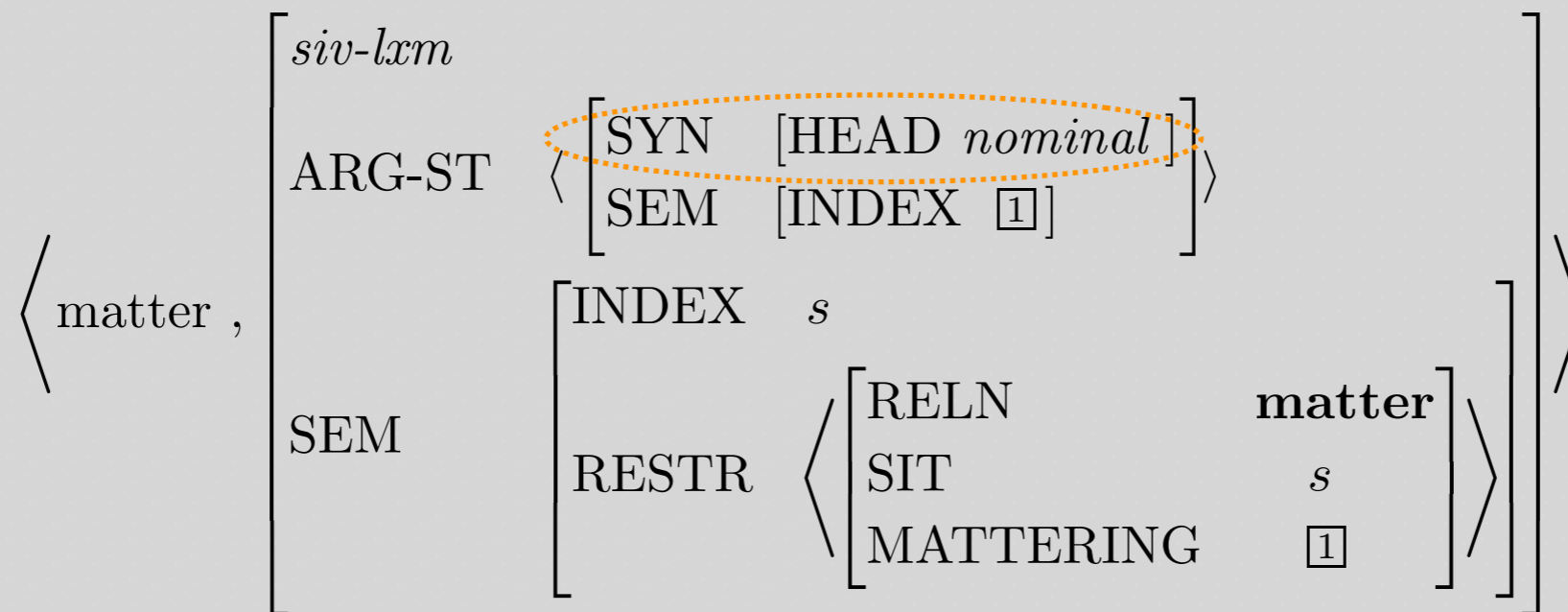
# Sample Verb with a CP Subject



Note: the only constraint on the first argument is semantic

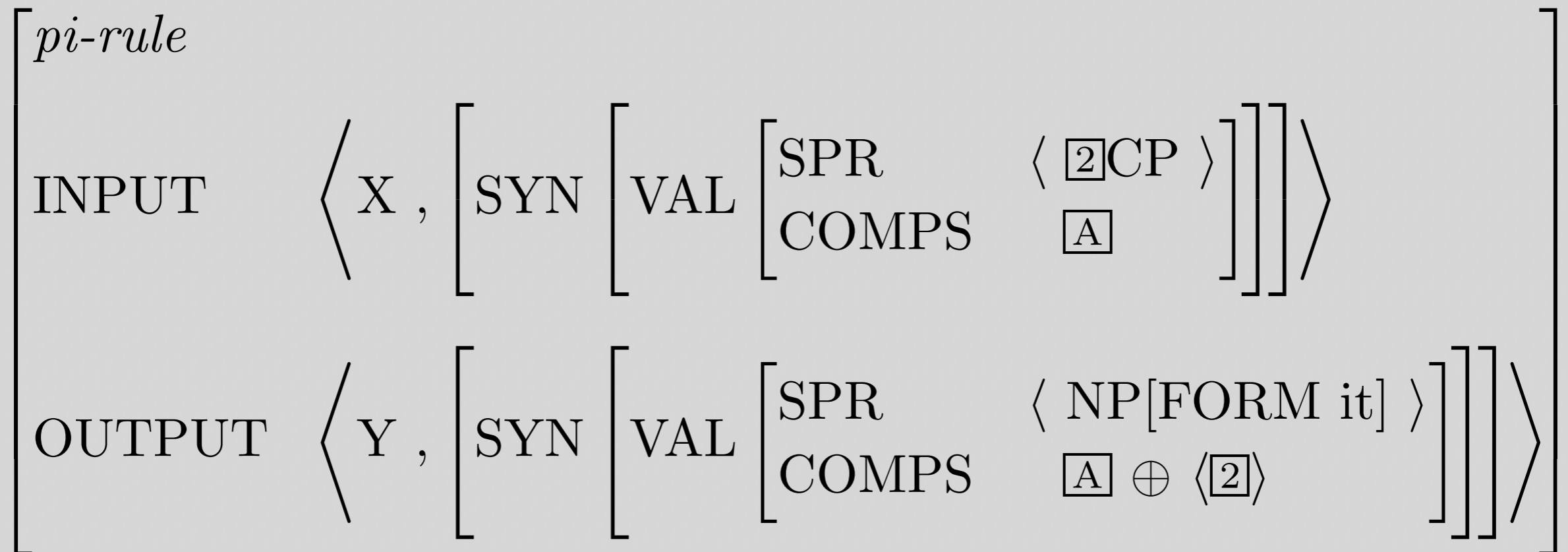
# A Problem

- 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

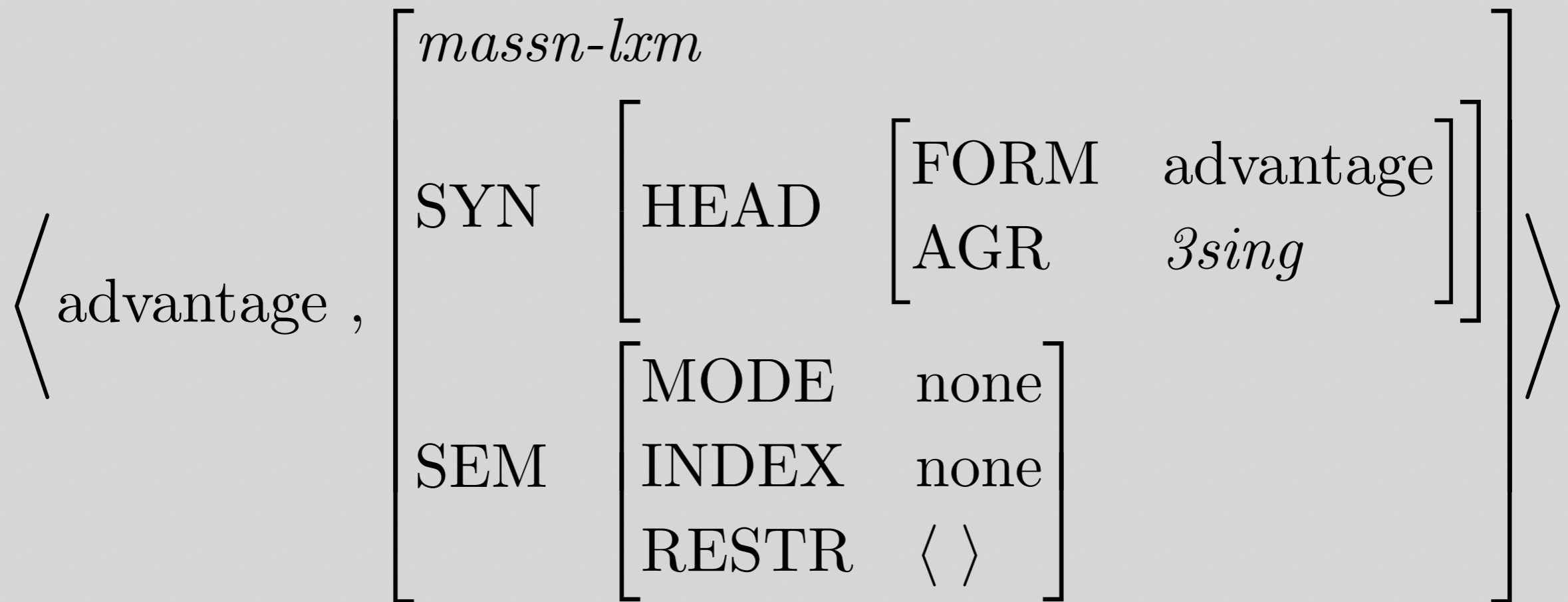


- Why is the type *pi-rule*?
- Why doesn't it say anything about the semantics?
- Why is the COMPS value  $\boxed{A}$ , not  $\langle \ \ \rangle$ ?

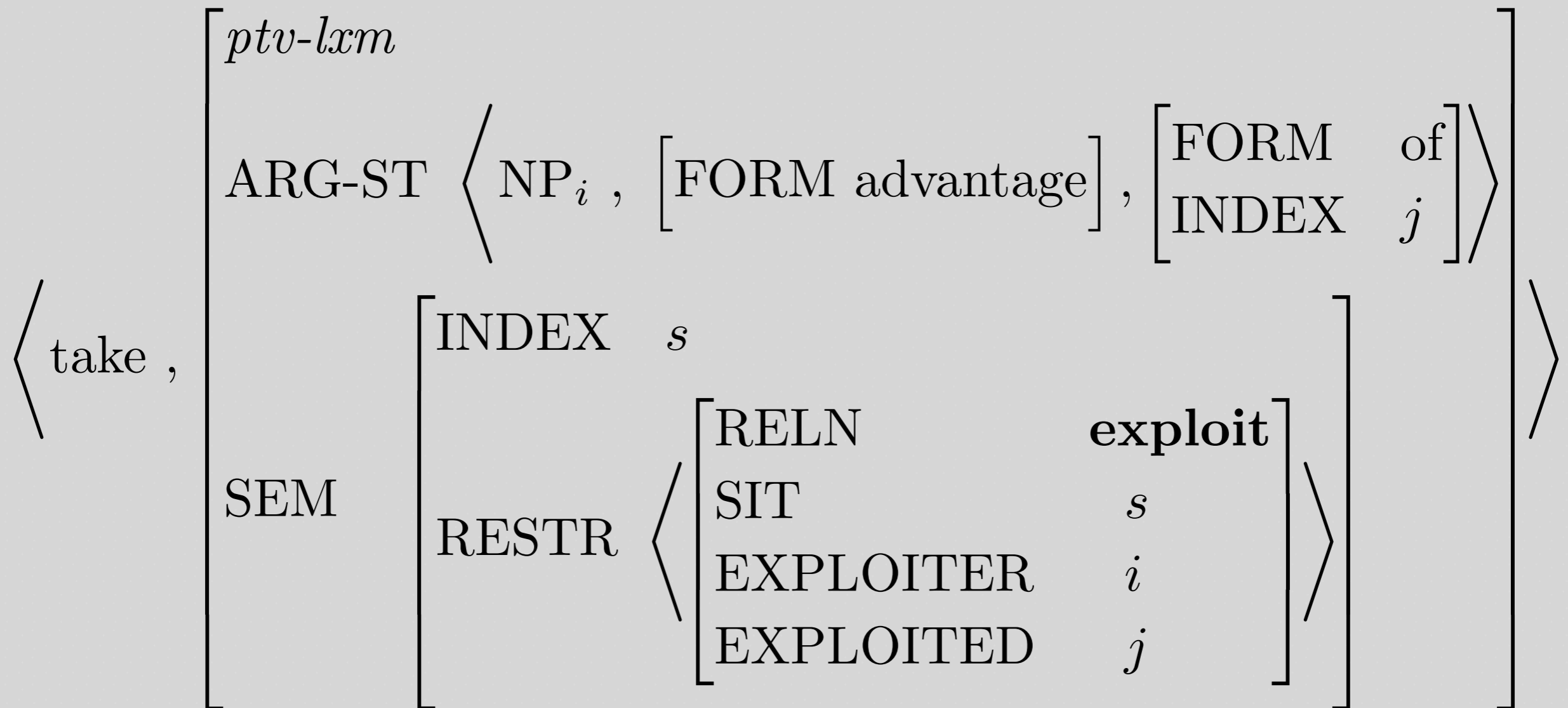
# Extraposition with Verbs whose COMPS Lists are Nonempty

- *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



# 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

- *Be* constrains the FORM value of its complement (and in the case of the existential *be*, its subject), but what is *be*'s own FORM value?
- So now we have 2 lexical entries for *be*... In the full grammar, are there more? For example, what lexical entry would give rise to the word *being*?
- How do the existential FORM features extend to other languages?

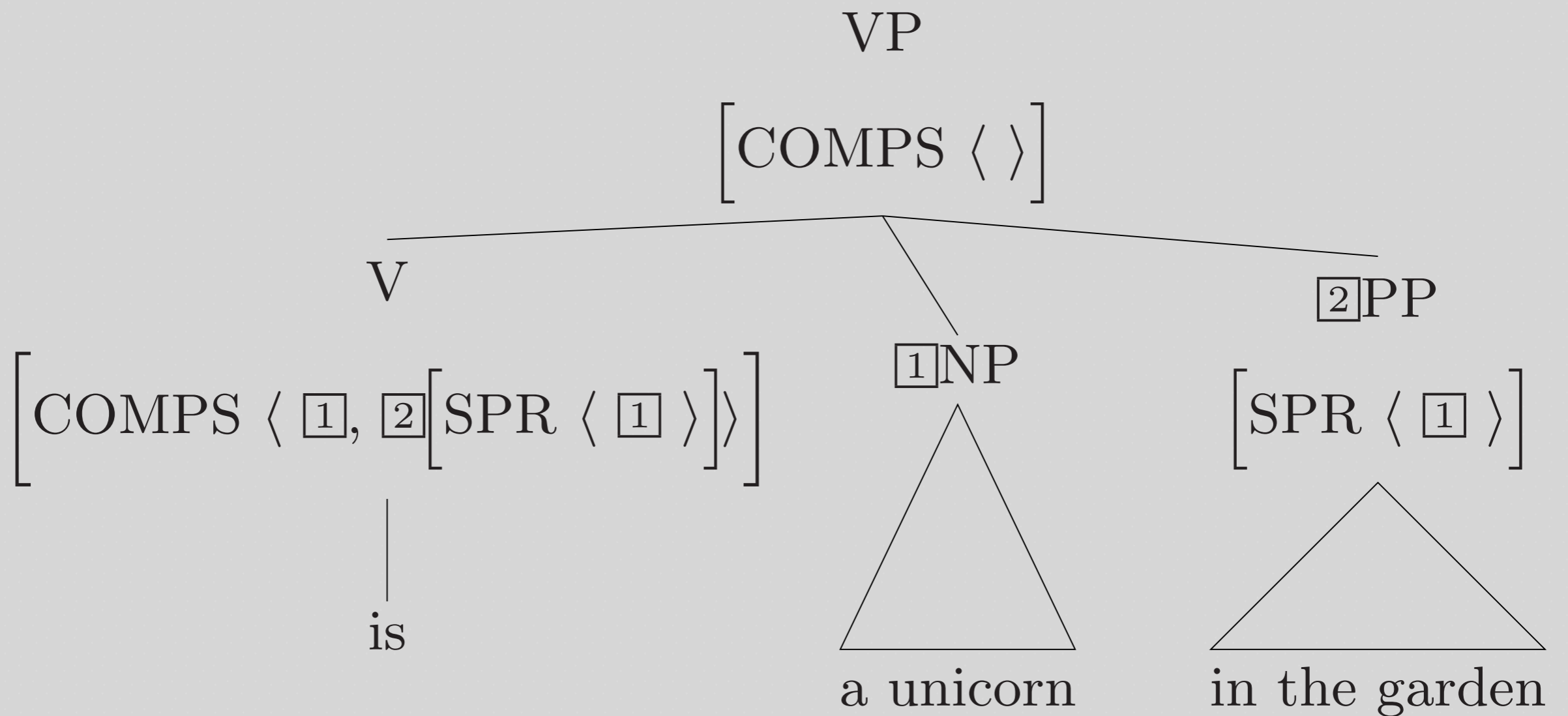
# Reading Questions

- The way we've been handling prepositions up to this point is that they do not have specifiers. In our analysis of *be*, however, we say that predicative prepositions need a specifier in order to interact correctly with *be*. Will this be true of all non-argument marking prepositions going forward, or is this only for interactions with *be*?

# Reading Questions

- What should the CASE value be for the 2nd ARG-ST element of existential *be*? Do we get this right?
- What does the application of the HCR look like for [*is a unicorn in the garden*]? How does the SPR sharing work?

# Reading Questions





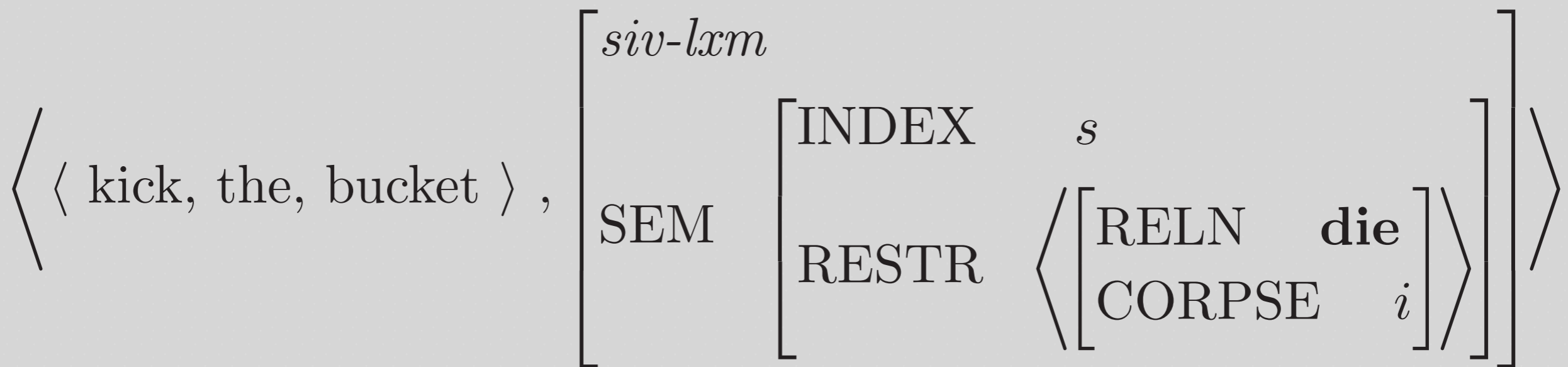
# Reading Questions

- Similar to *be*, we can also say *There exists a vase in the room.*
- In this case, do we consider *exist to* belong to *exist-be-lxm*?
- How about the word *come* in *There comes the bus*?

# Reading Questions

- Does the grammar need to identify a sentence with all possible semantic interpretations, or does it just need to say yes or no whether the sentence is grammatically valid? It seems like any use of the *kicked the bucket* idiom would already be accepted using the literal interpretation, so why create a special case for it?
- Why don't we treat all idioms as fully fixed phrases, like (51)?

# Reading Questions



# Reading Questions

- In the idiom *kick the bucket*, are we leaving it entirely up to the morphological component to inflect *kick* with the correct person and tense morphology and not the entire phrase?
- If we can apply the Past Tense Verb LR to *kick*, what prevents applying the Plural Noun LR to *bucket*?
- If *kick the bucket* would be a whole *siv-lxm*, when it goes through the i-rule, is it a *word* or a *phrase*? Should we do something when we parse these sentences? (Or more generally, what is the boundary between word and phrase?)

# Reading Questions

- How do we distinguish RESTR  $\langle \rangle$  *advantage* from the contentful one?
- Why are words such as *tabs* and *advantage* semantically empty? Where is their meaning stored?



# Reading Questions

- This chapter covers some situations where we have to do special things to correctly link up meanings when some words are semantically empty. If I had an application where all I cared about was the semantic meaning, would the problem become easier? Would a SEM-only tree be similar to a dependency parse?



# Reading Questions

- In American English the *that* in a sentence like *I know that you are lying* is optional, i.e. *I know you are lying* seems equally acceptable to me. How would the sentence without *that* be handled?
- Are there any constraints on the S complement that complementizers take? How do we rule out imperative sentences coming after complementizers (e.g. *\*I know that wash the car.*)?

# Reading Questions

- What are the semantics of nouns that can take a CP complement? Specifically, I am thinking of *fact* as in *The fact that Fido barks annoys me*. Does this sentence have the same semantics as *That Fido barks annoys me*, and if so, how is that born out in the grammar?
- Curious about CPs inflecting for case. Do we see languages that show overt case-marking on CPs (when it's clear that they're not nominalizations)?

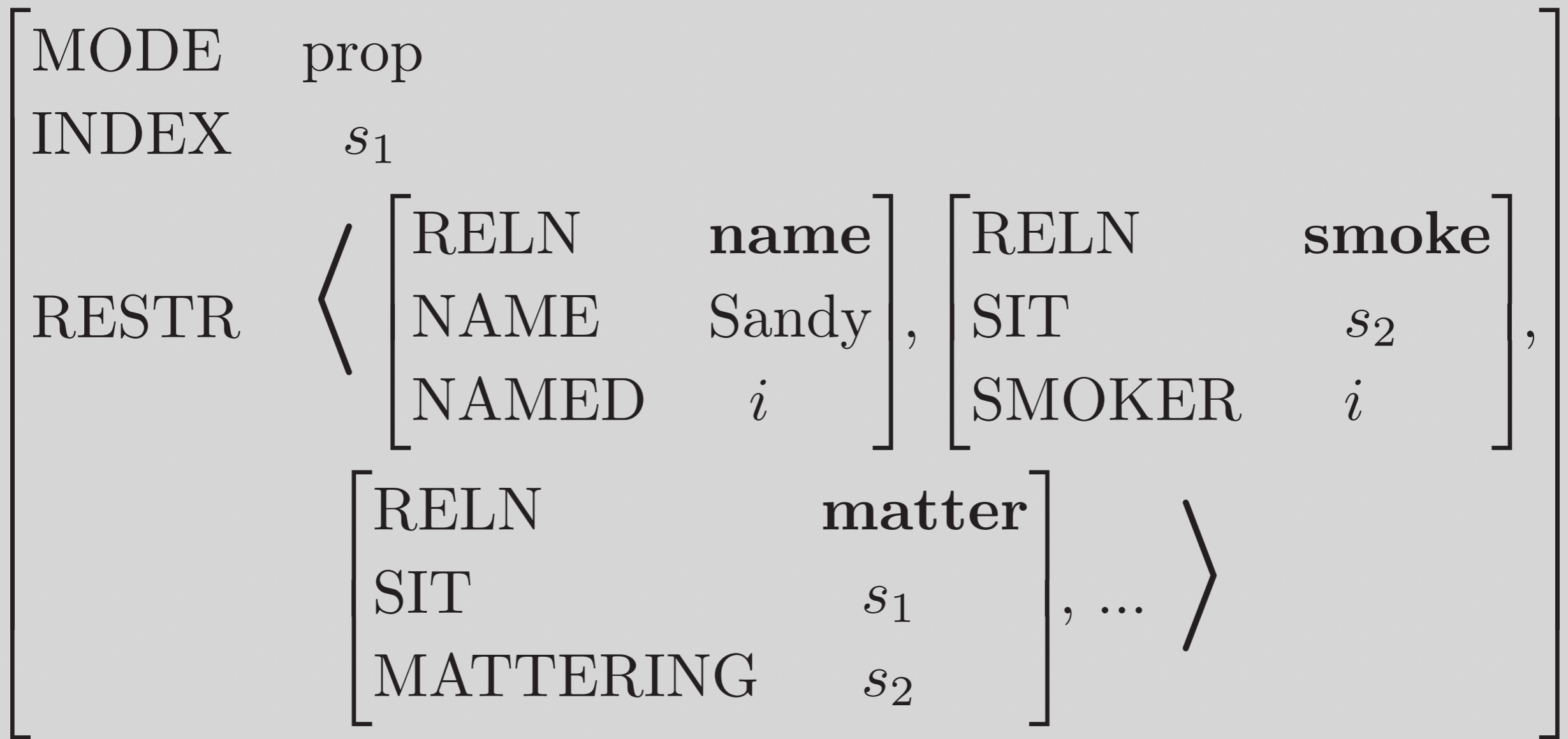
# Reading Questions

- In the example in (39), the top sentence doesn't posit that the situation expressed in the CP is true, right? It only uses the situation to specify the situation of the VP *matters*, which it does posit as true, right? Because the index of the top-level sentence is the index of the VP *matters* by the Semantic Inheritance Principle, yes?

# Reading Questions

- On page 345, when creating the SEM values in the RESTR list for *that Sandy smokes matters*, I have a hard time understanding the need or function of s1 and s2 in RELN **matter**. What is the difference between SIT s1 and MATTERING s2? I understand that Sandy smokes is one SIT and matters is another SIT, I guess my issue is that I don't understand why matters needs to reference S2 and the other problem is that maybe I just don't like MATTERING as a RESTR value.

# Reading Questions





# Reading Questions

- What's the reason for not, in the Extraposition Lexical Rule, for having (potentially) different phonological forms on the input and the output? What's a case where they would actually be different?
- Why can't extraposition be a d-rule?
- Where else will we see pi-rule?
- Why do we state this rule in terms of COMPS and SPR, whereas elsewhere we have stated similar rules on ARG-ST?