

Ling 566
Nov 20, 2012
Auxiliaries cont: NICE

Overview

- Brief review of our analysis so far
- NICE properties of auxiliaries
- The auxiliary *do*
- NICE properties (lexical rules)
- Reading questions

Descriptive Summary of the NICE Properties

Negation

Sentences are negated by putting *not* after the first auxiliary verb; they can be reaffirmed by putting *too* or *so* in the same position

Inversion

Questions are formed by putting an auxiliary verb before the subject NP

Contraction

Auxiliary verbs take negated forms, with *n't* affixed

Ellipsis

Verb phrases immediately following an auxiliary verb can be omitted

Negation (and Reaffirmation)

- Polar adverbs (sentential *not*, *so*, and *too*) appear immediately following an auxiliary

Pat will not leave

Pat will SO leave

Pat will TOO leave

- What about examples like *Not many people left*?

- What happens when you want to deny or reaffirm a sentence with no auxiliary?

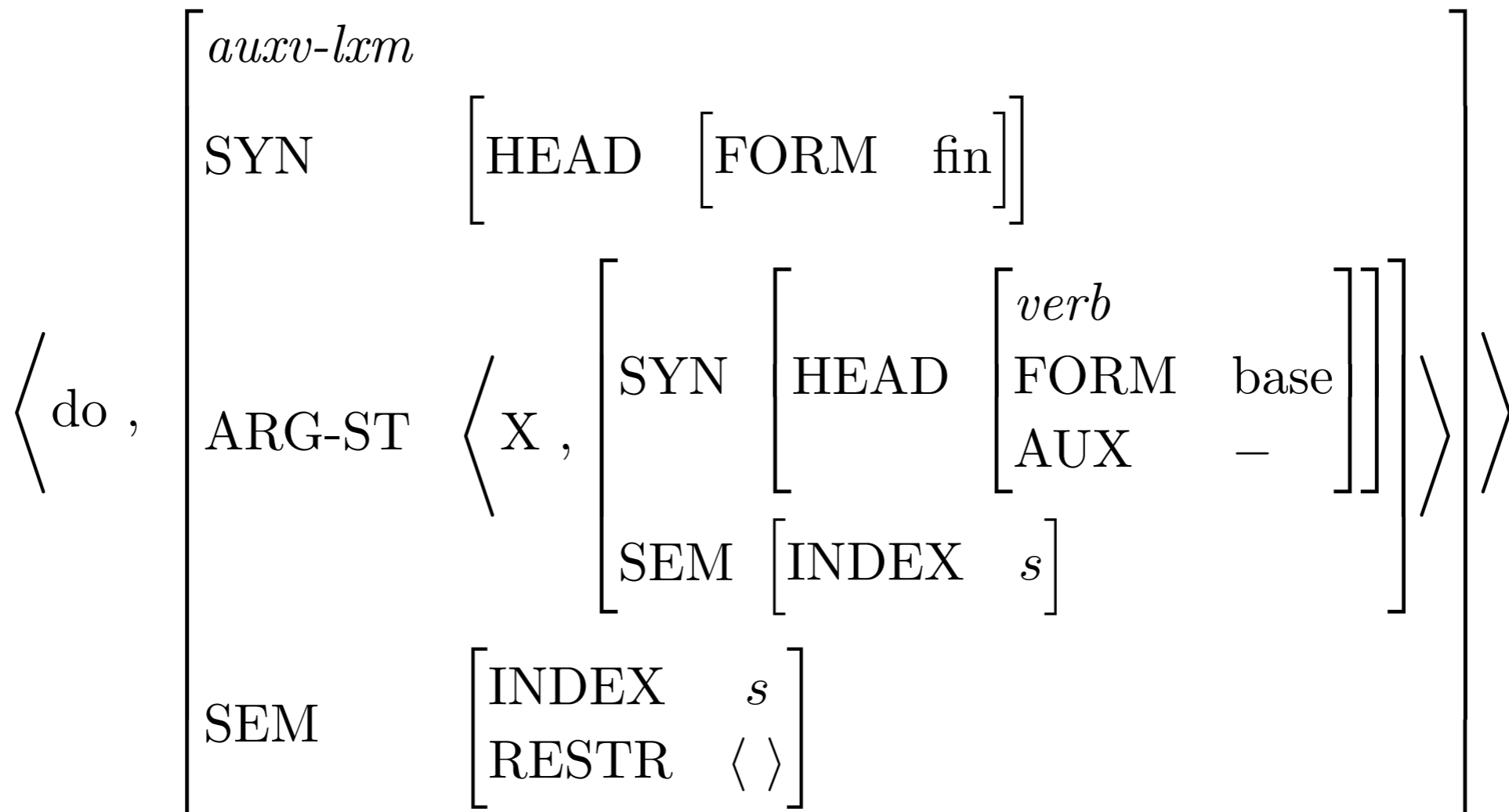
Pat left

Pat did not leave

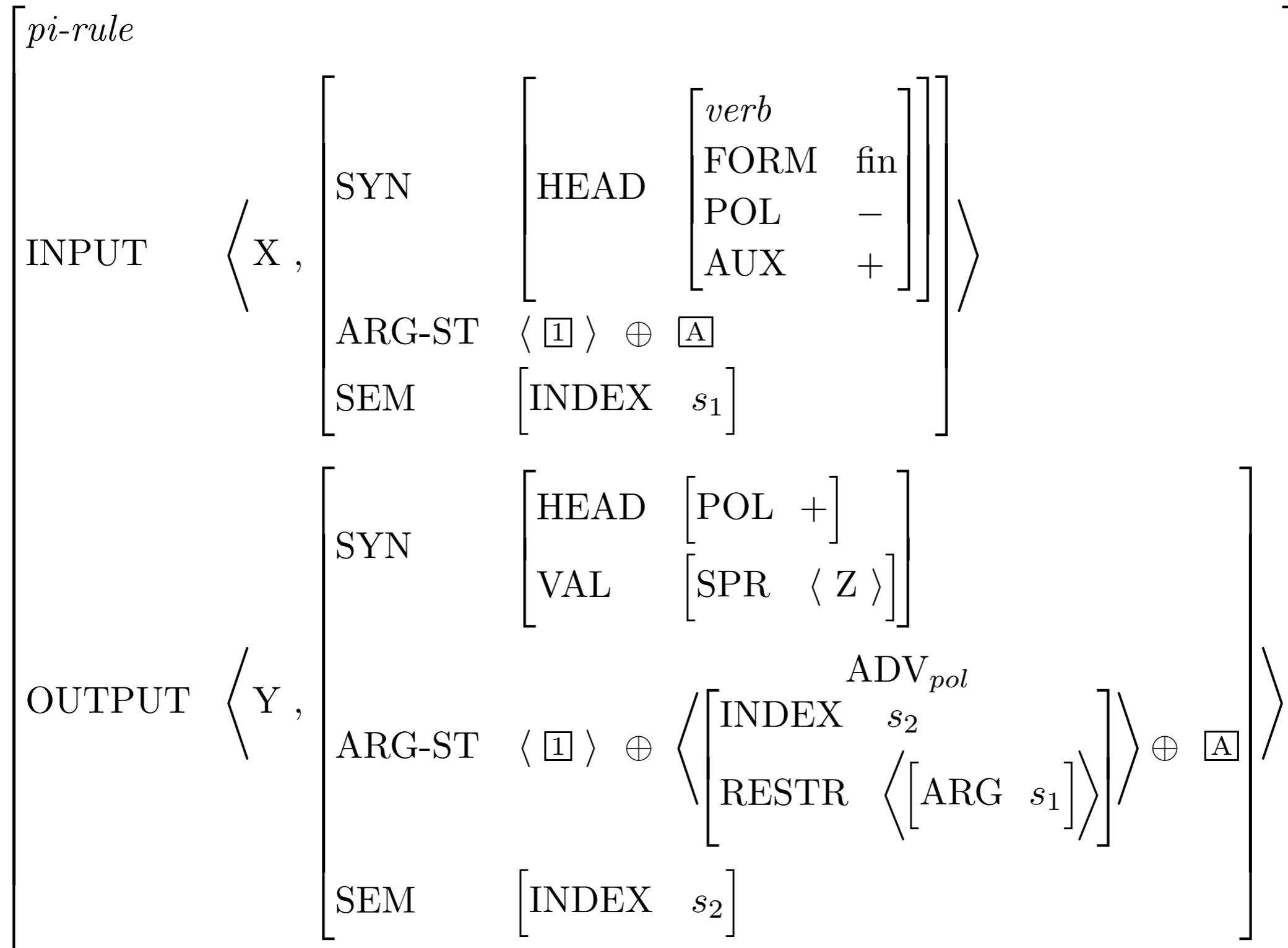
Pat did TOO leave

The Auxiliary *do*

- Like modals, auxiliary *do* only occurs in finite contexts:
**Pat continued to do not leave*
- Unlike modals, *do* cannot be followed by other auxiliaries:
**Pat did not have left*

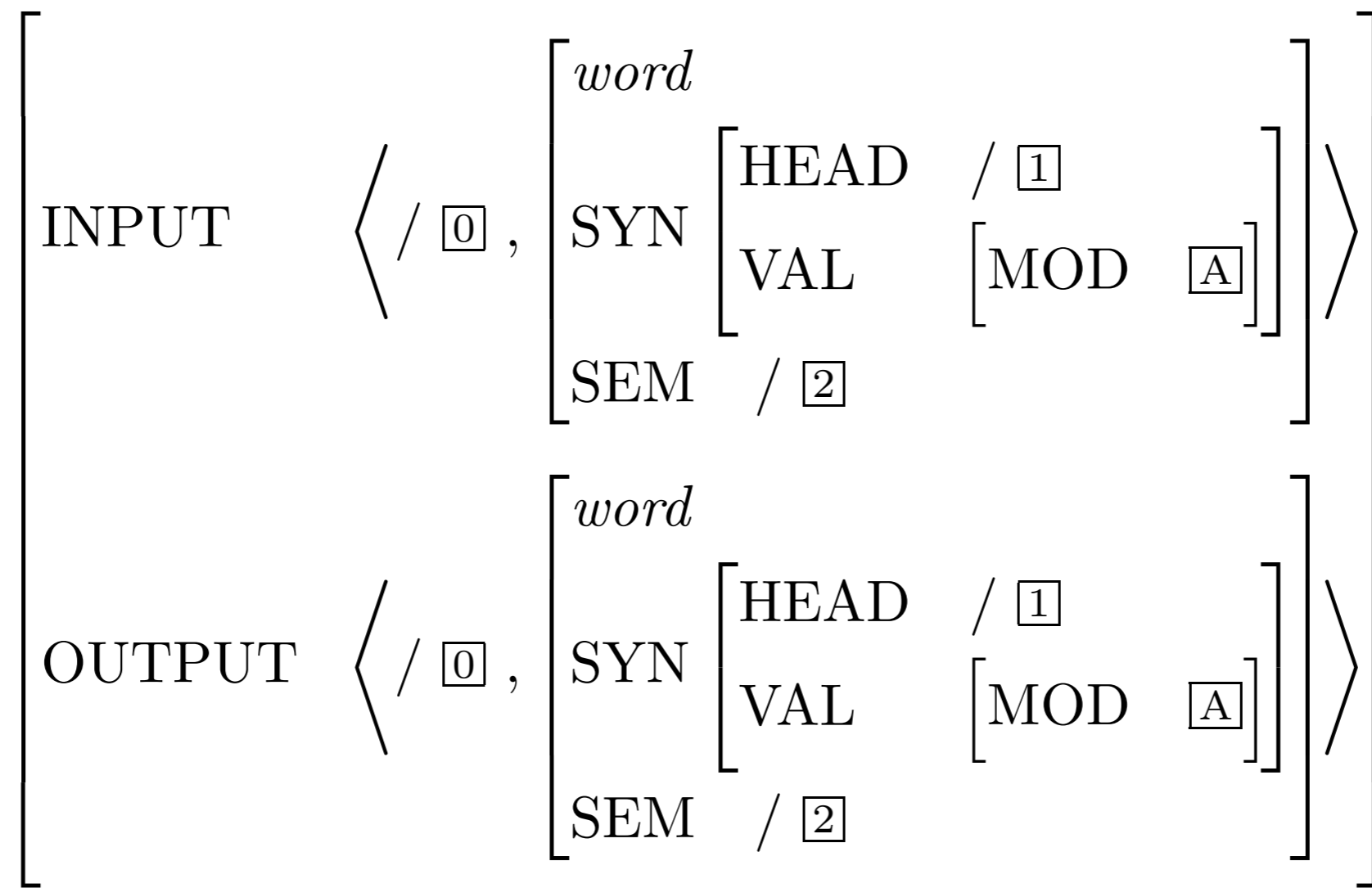


The ADV_{pol} -Addition Lexical Rule

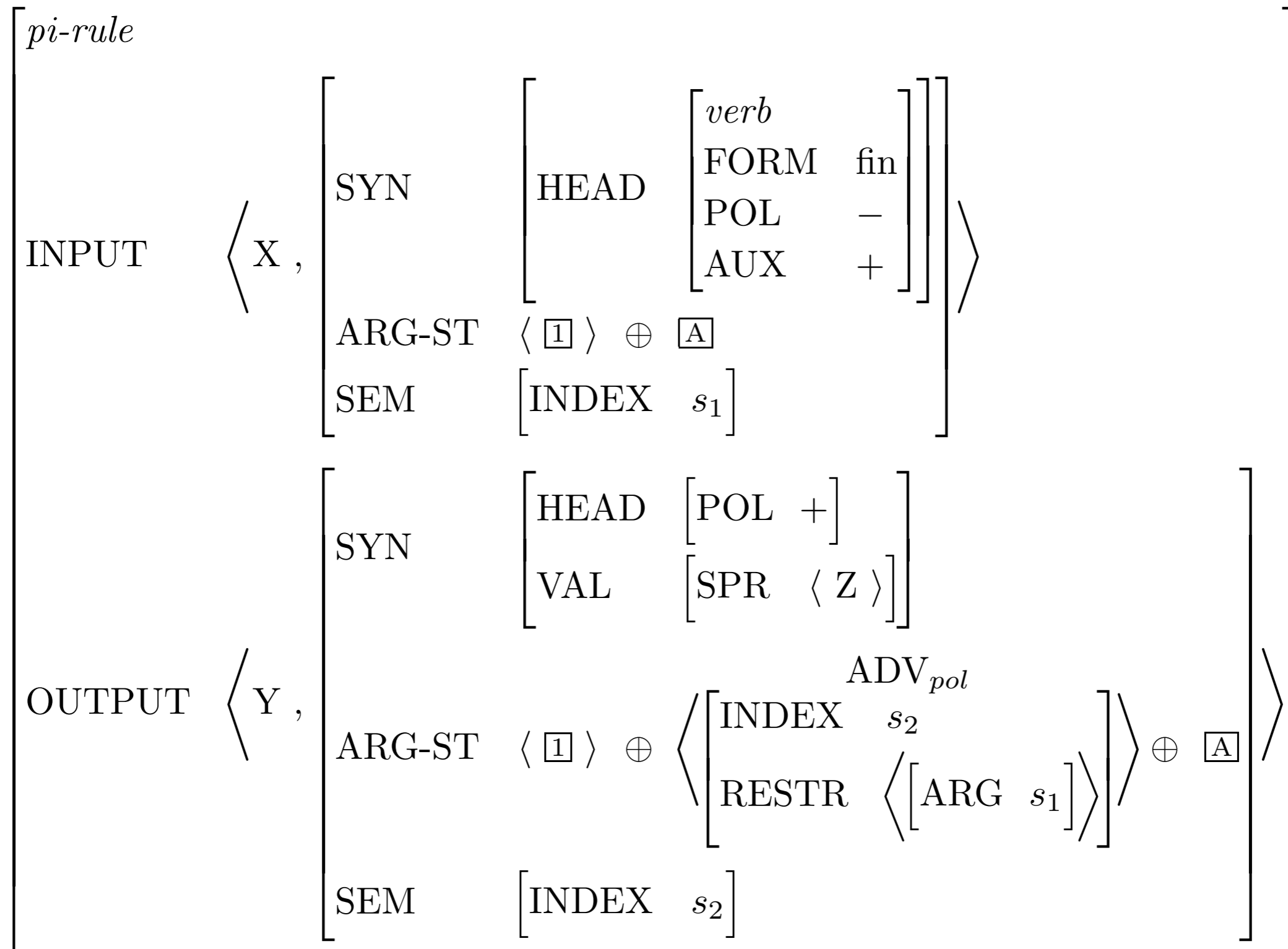


What does the type *pi-rule* mean?

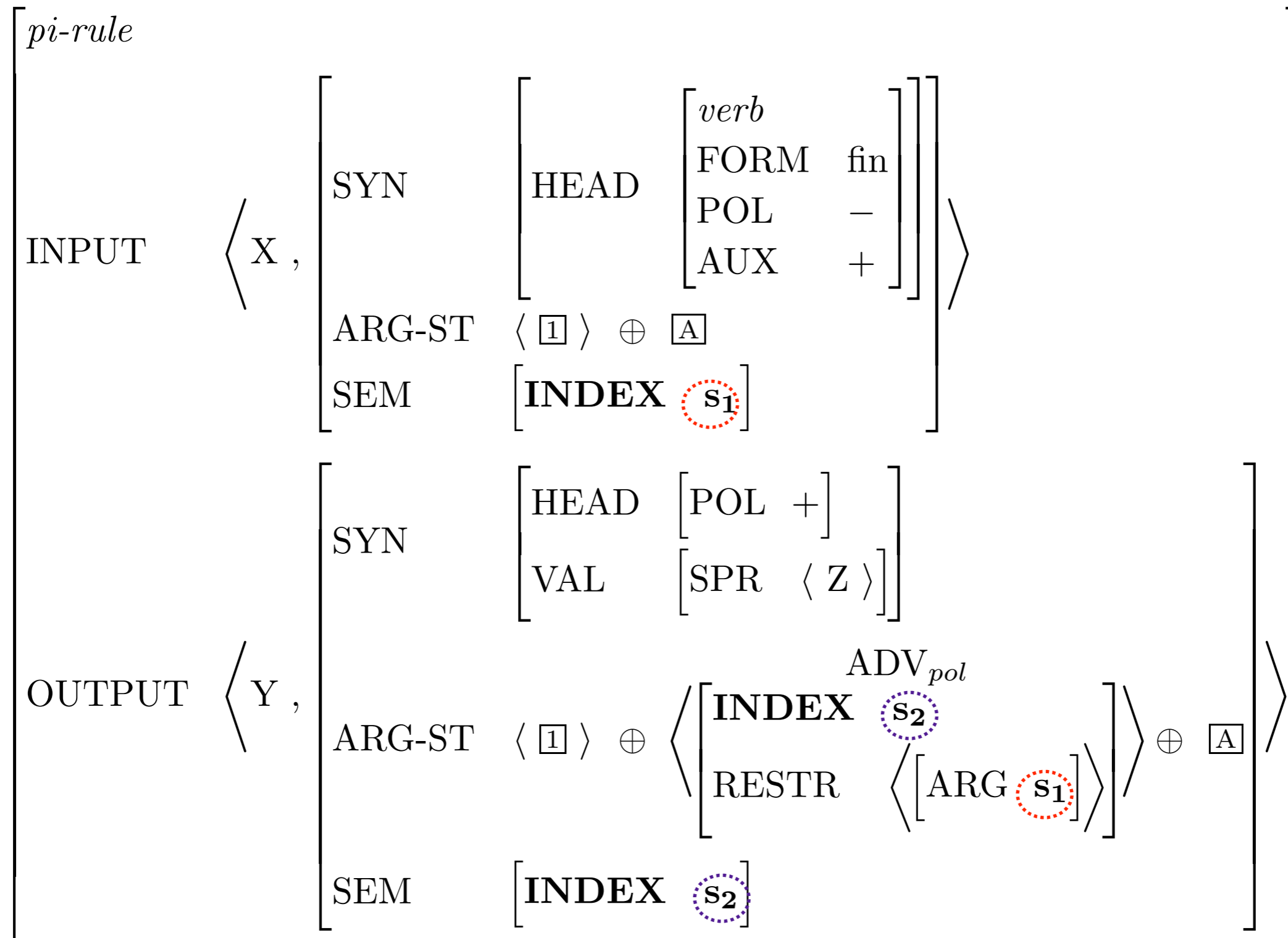
- It maps words to words (hence, “post-inflectional”)
- It preserves MOD values, HEAD values as a default, and (like other lexical rule types) SEM values as a default



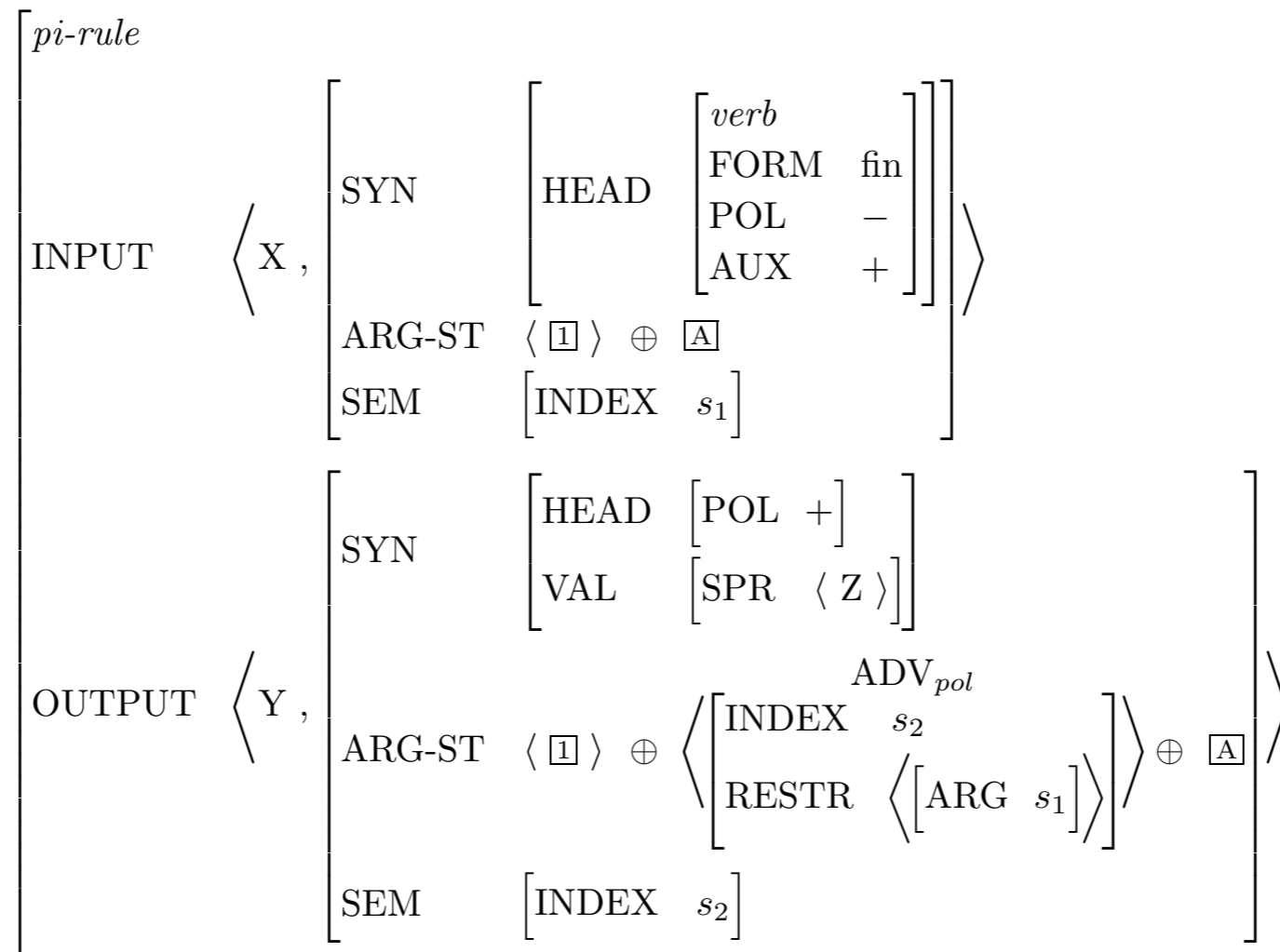
Why doesn't ADV_{pol} -Addition LR mention VAL?



What is the role of these indices?



Which *nots* does the rule license?



Andy must not have been sleeping?

✓

Andy must have not been sleeping?

✗

Andy must have been not sleeping?

✗

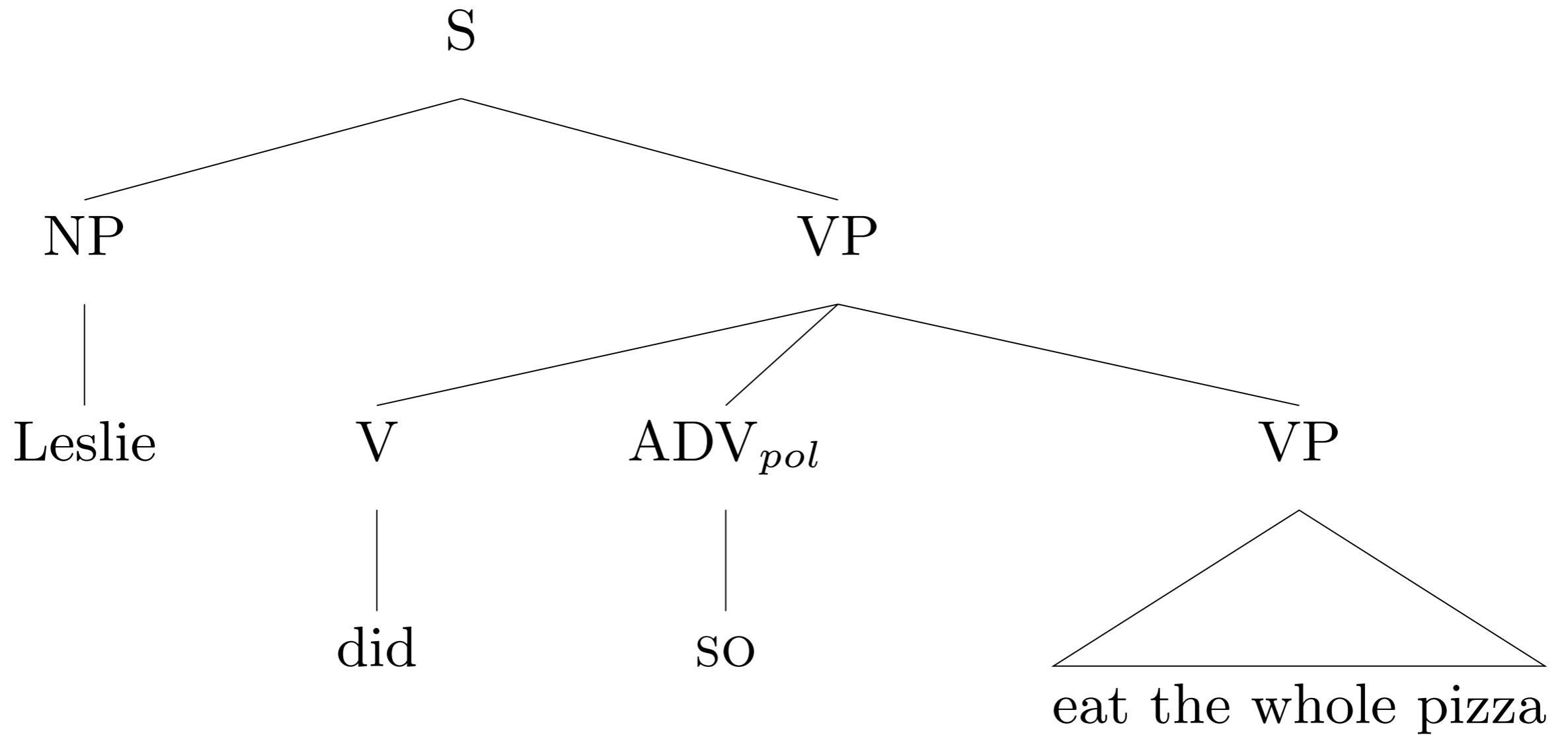
Kleptomaniacs cannot not steal.

✓

Kleptomaniacs cannot not steal.

✗

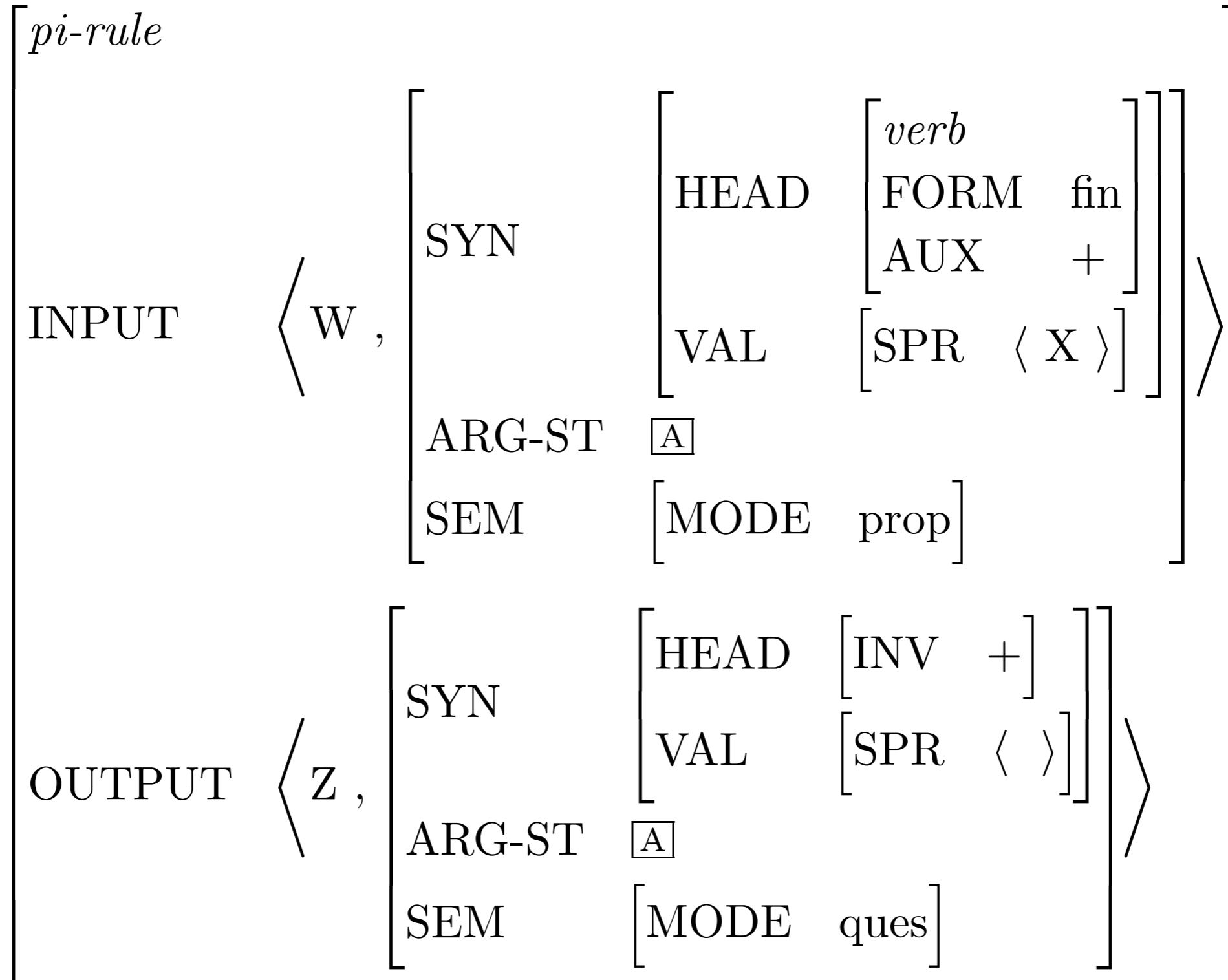
Negation and Reaffirmation: A Sample Tree



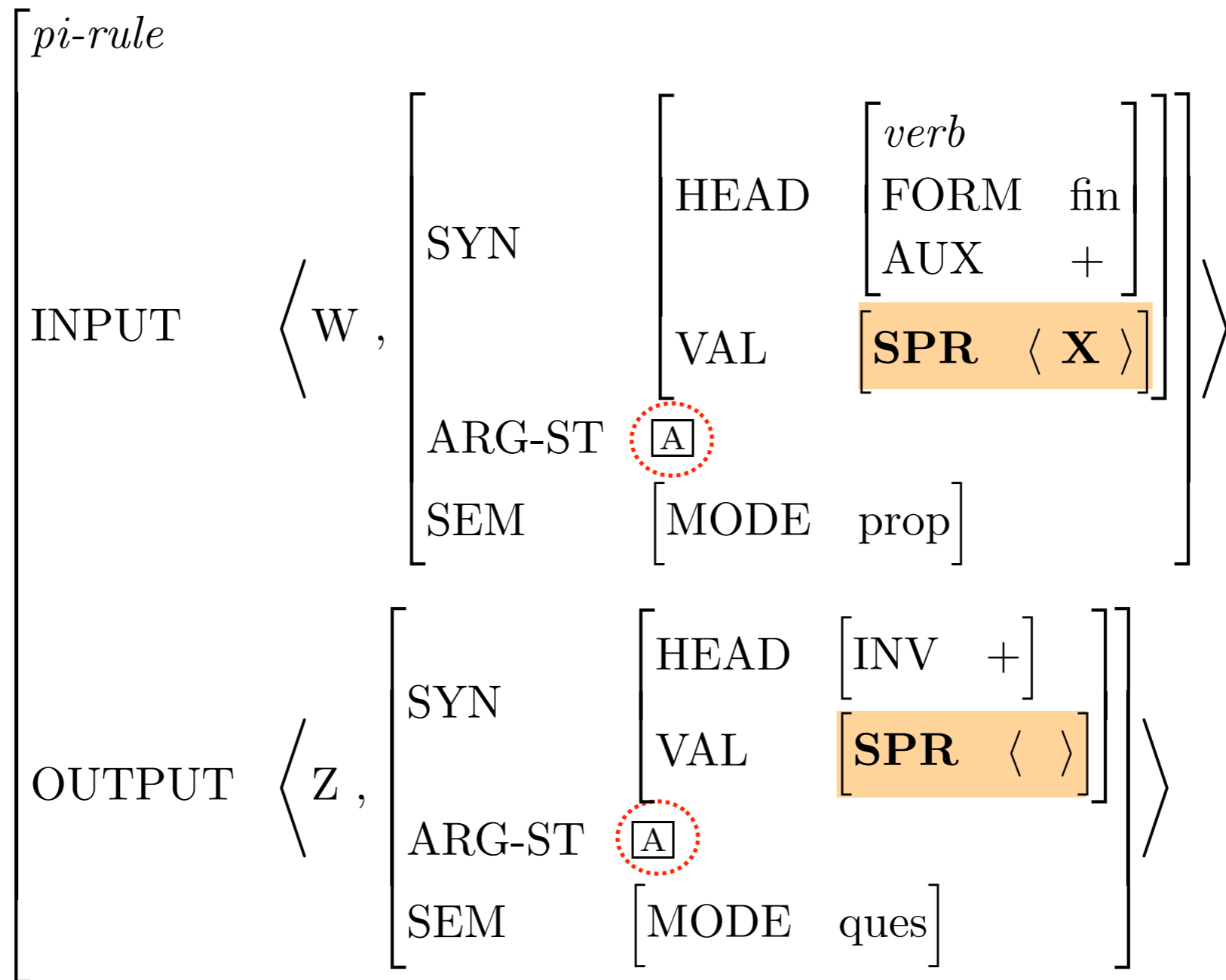
Inversion

- Yes-no questions begin with an auxiliary:
Will Robin win?
- The NP after the auxiliary has all the properties of a subject
 - Agreement: *Have they left?* vs. **Has they left?*
 - Case: **Have them left?*
 - Raising: *Will there continue to be food at the meetings?*
- What happens if you make a question out of a sentence without an auxiliary?
Robin won
Did Robin win?

The Inversion Lexical Rule



How the Rule Yields Inverted Order



...plus the ARP

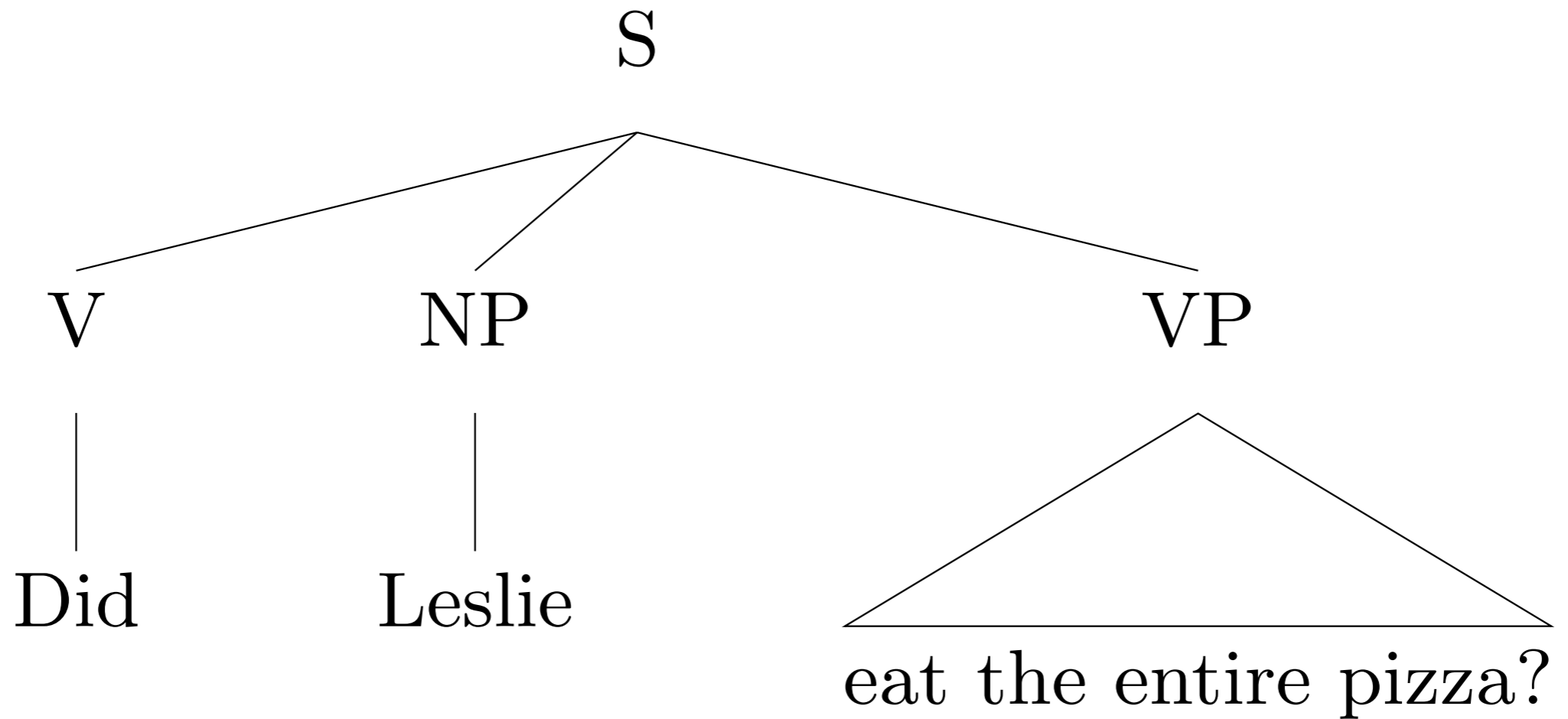
The Feature INV

- What is the INV value of inputs to the Inversion LR?
 - Perhaps surprisingly, the input is [INV +]
 - Word-to-word rules (*pi-rules*) have default identity of HEAD features, and no INV value is given on the input
- Then what work is the feature doing?
 - It's used to mark auxiliaries that can't or must be inverted
You better watch out vs. **Better you watch out*
I shall go (*shall* ~ 'will') vs. *Shall I go?* (*shall* ~ 'should')

Other Cases of Inversion

- Inversion is not limited to questions
 - Preposed negatives: *Never have I been so upset!*
 - Conditionals: *Had we known, we would have left.*
 - Exclamations: *May your teeth fall out!*
- Does our rule account for these?
 - No. Our rule's output says [MODE ques]. And each construction has slightly different idiosyncrasies.
- How might we extend our analysis to cover them?
 - Define a type of inversion lexical rules, sharing certain properties, but with some differences.

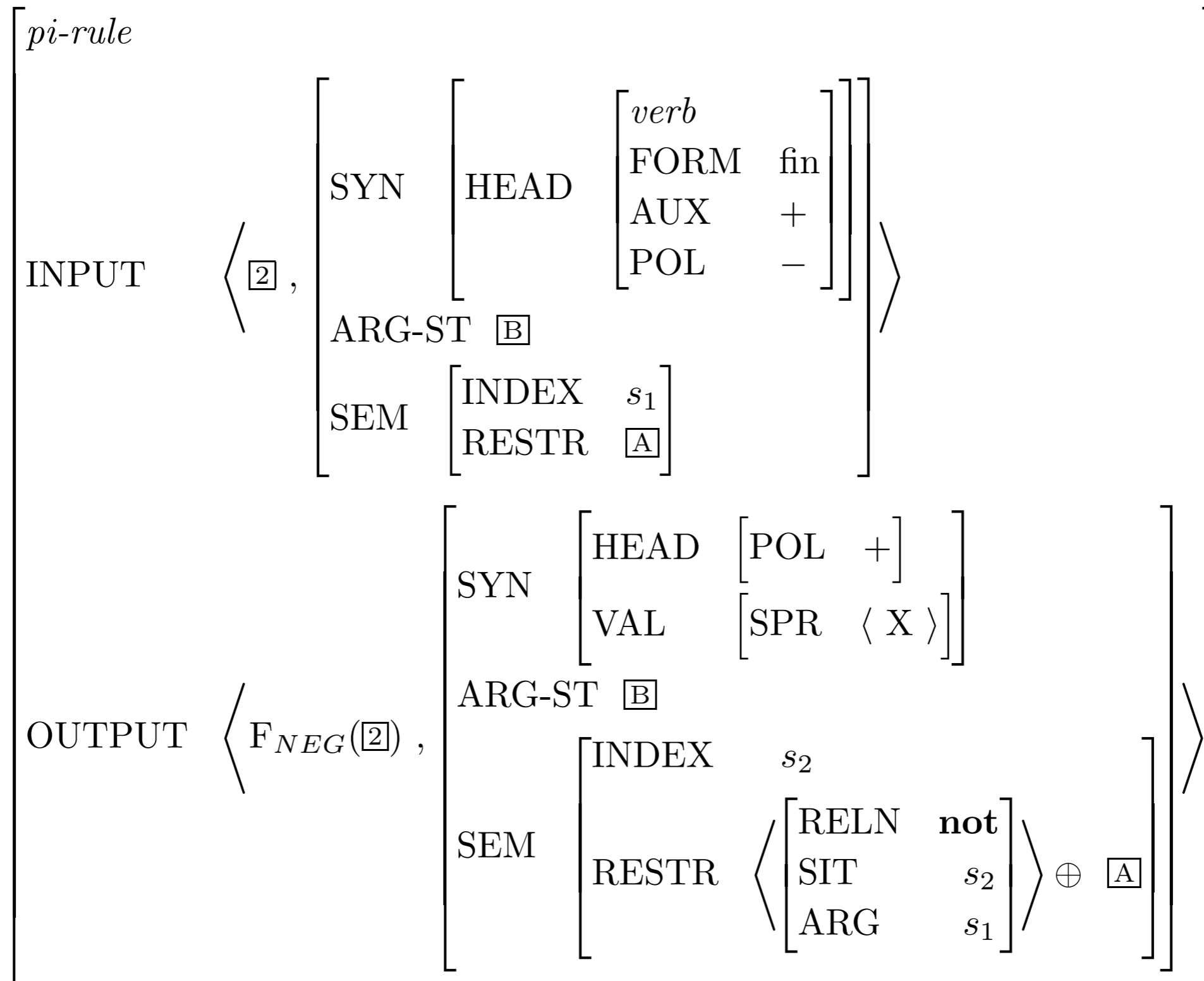
Inversion: A Sample Tree



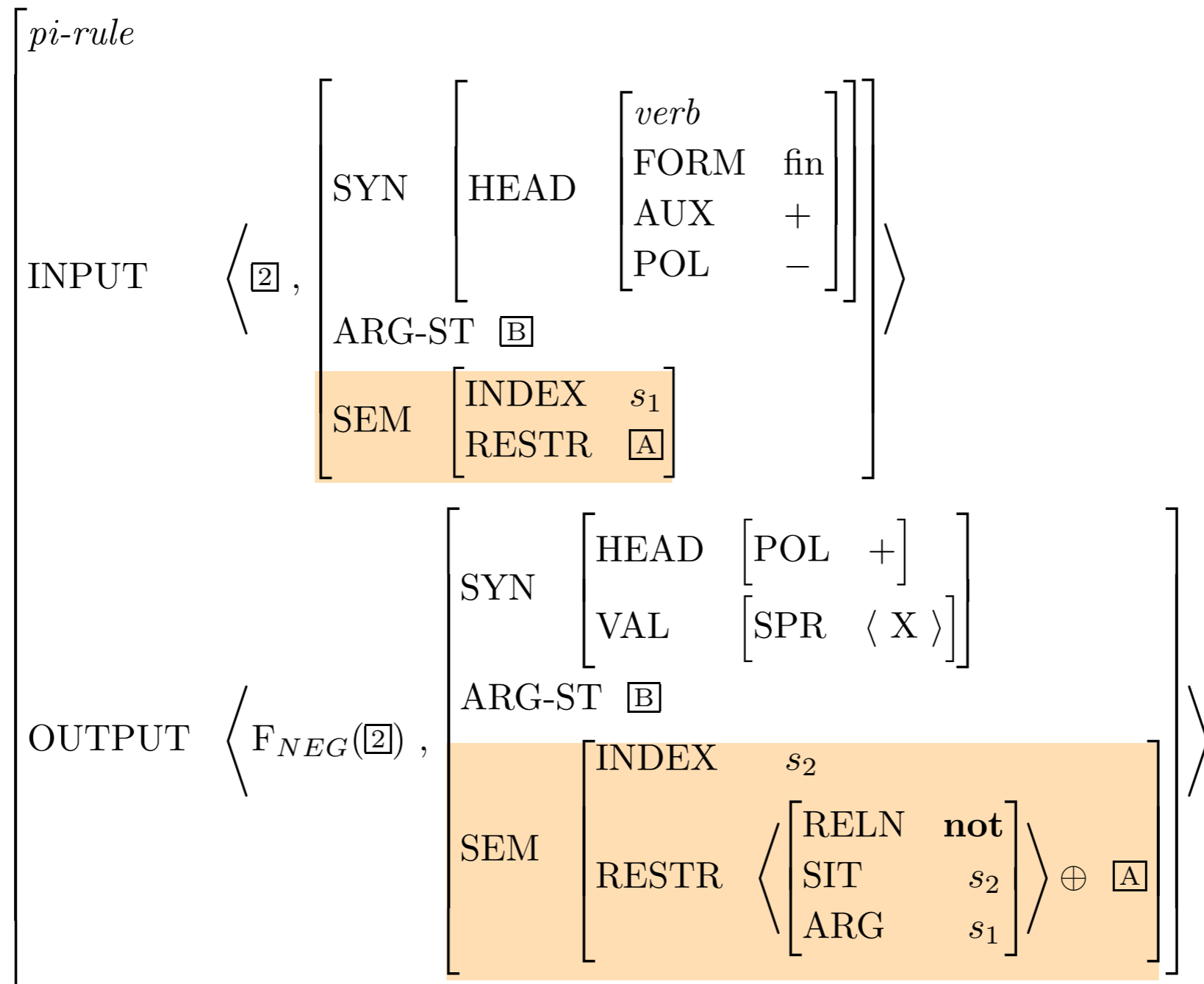
Contraction

- There are several types of contraction in English, but we're only talking about words ending in *n't*
- It may seem like just *not* said fast, but there's more to it
 - Only finite verbs can take *n't*:
**Terry must haven't seen us*
 - There are morphological irregularities:
won't, not **willn't* *%shan't*, not **shalln't*
mustn't pronounced *mussn't*
don't pronounced *doen't*, not *dewn't*
**amn't*

The Contraction Lexical Rule

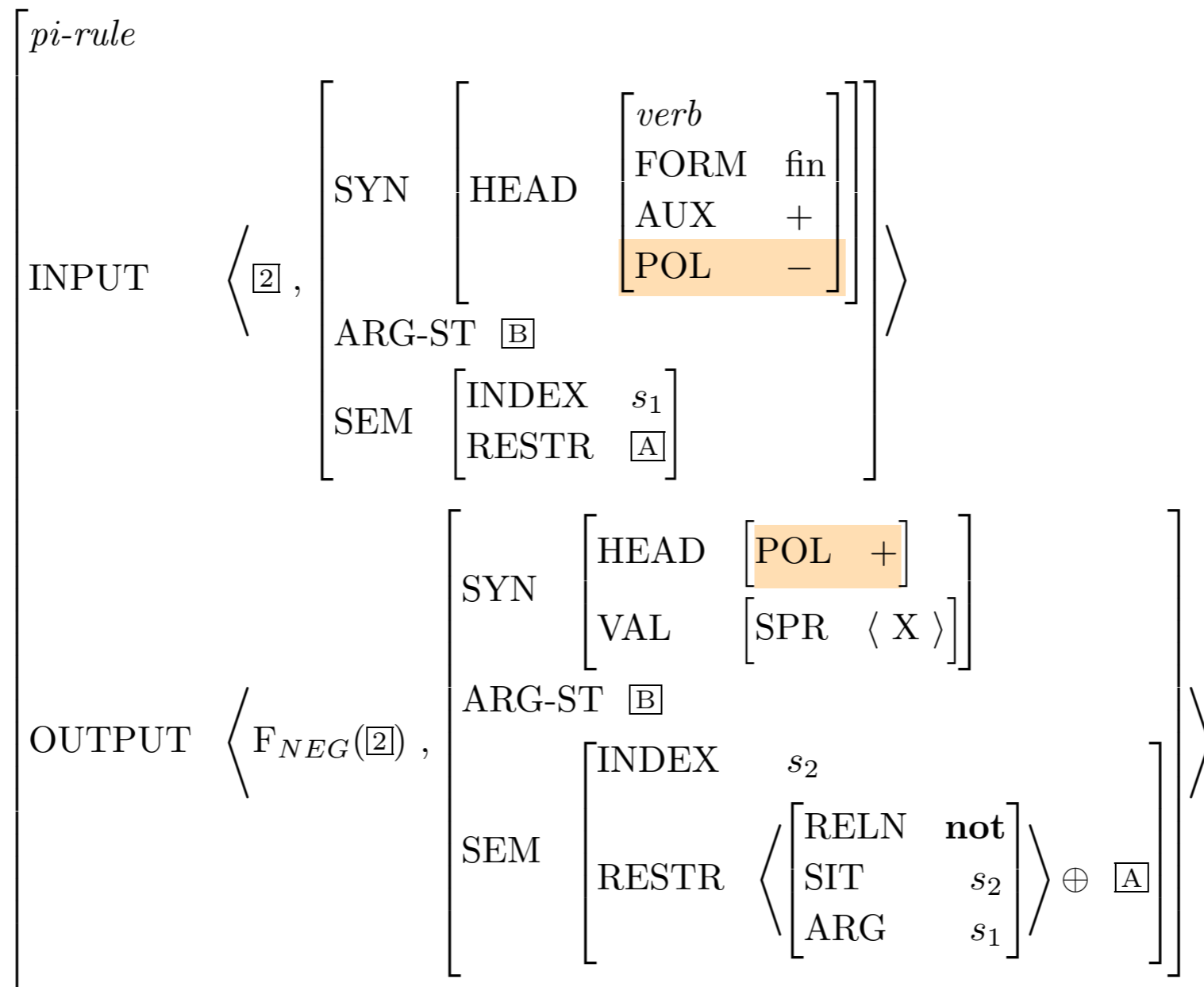


Most of the work is in the semantics



Why?

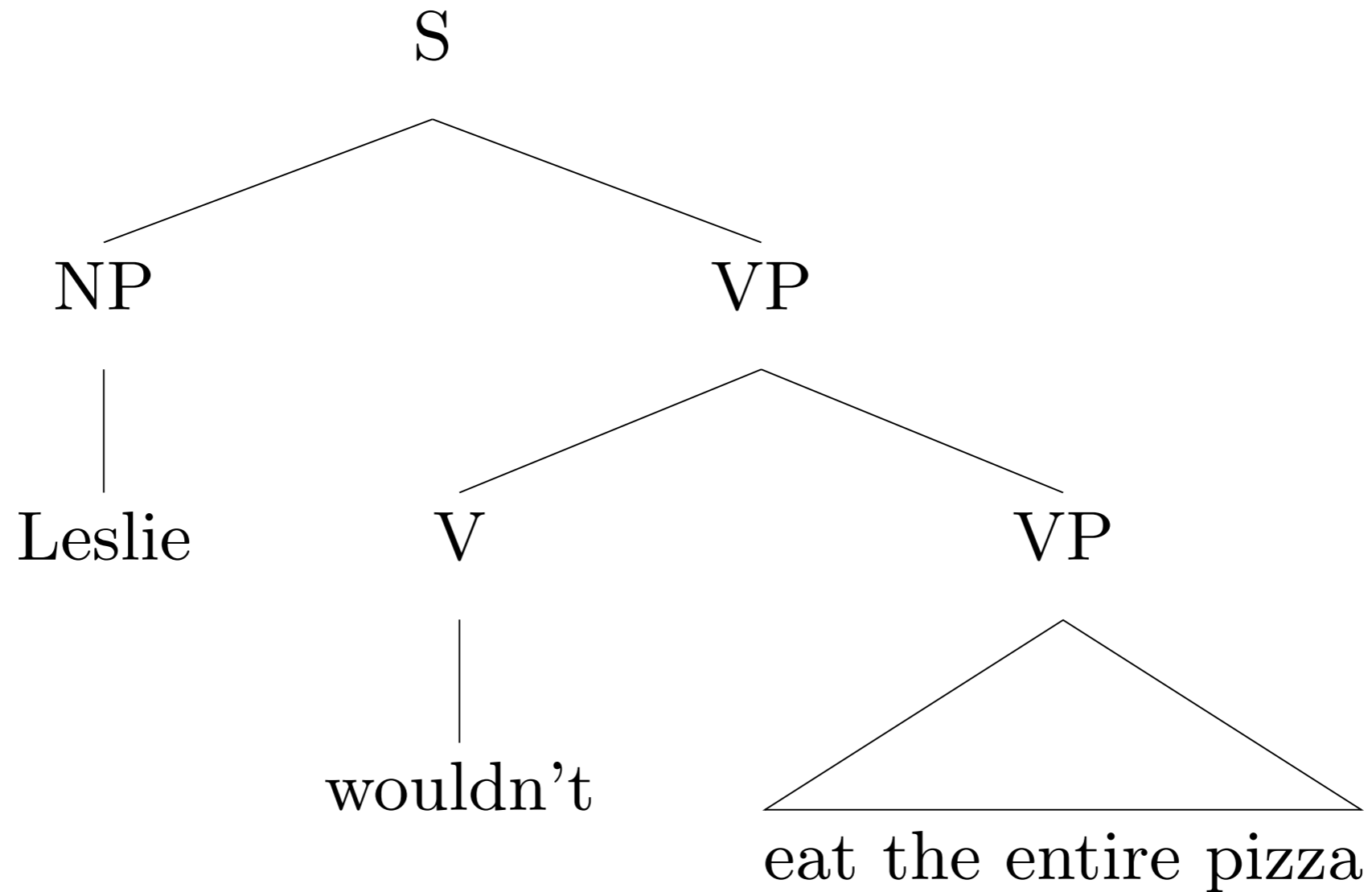
What does POL do?



**We can't stop*

**They won't TOO mind*

Contraction: Sample Tree



Ellipsis

- Ellipsis allows VPs to be omitted, so long as they would have been preceded by an auxiliary

* *Pat couldn't have been watching us, but
Chris*

- Unlike the other NICE properties, this holds of all auxiliaries, not just finite ones.
- What is the elliptical counterpart to a sentence with no auxiliary?

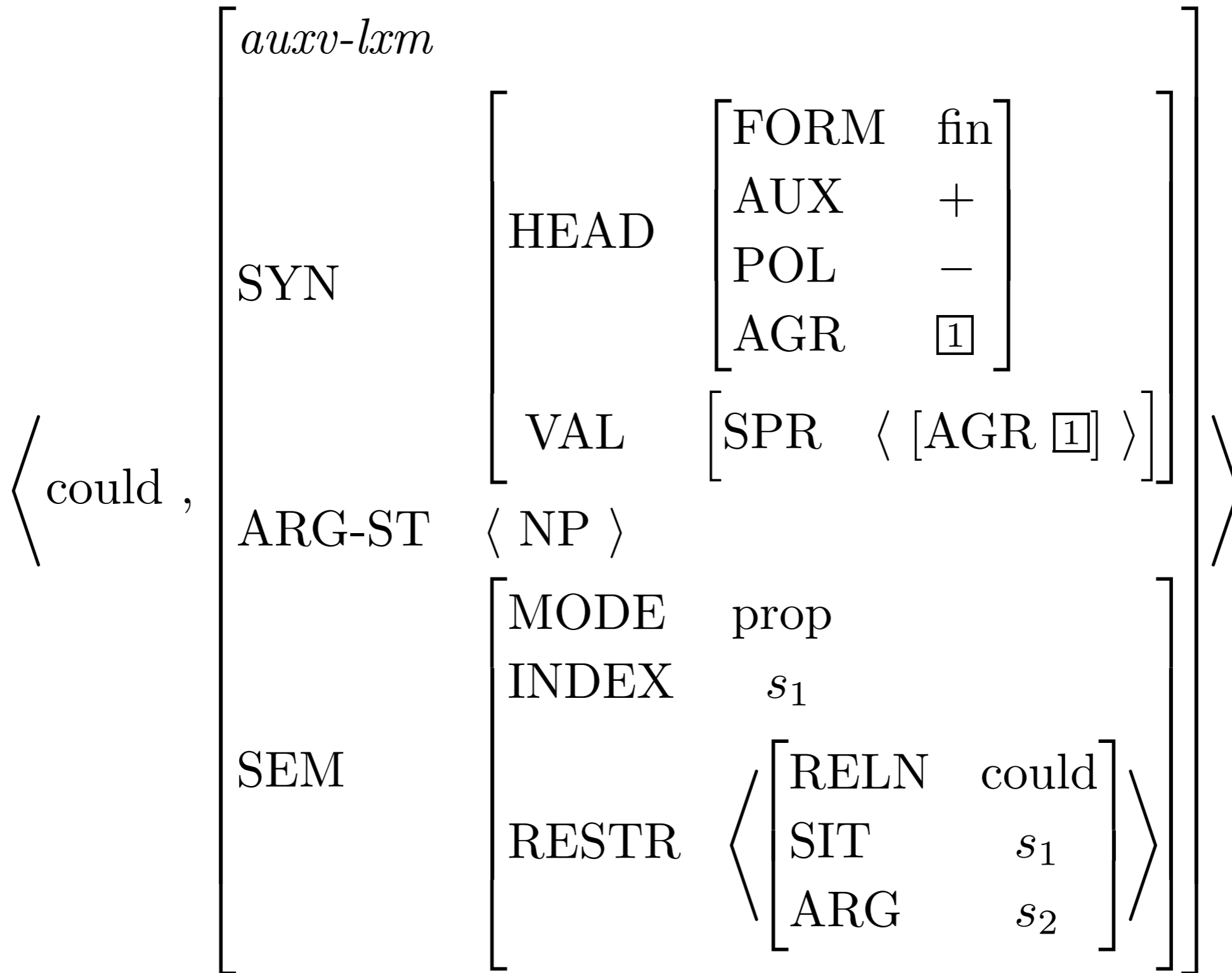
Whenever Pat watches TV, Chris watches TV
Whenever Pat watches TV, Chris does

The Ellipsis Lexical Rule

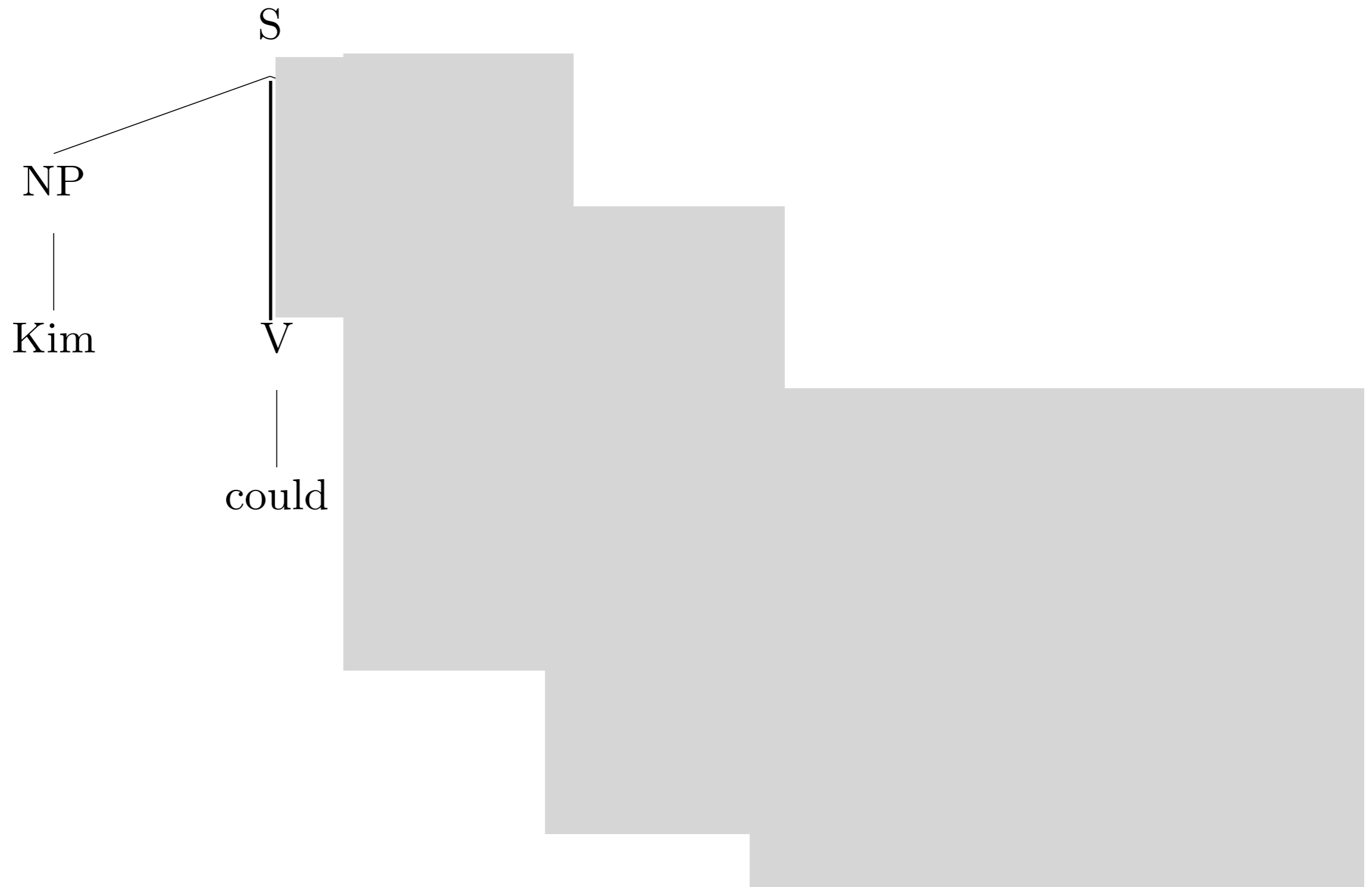
$$\left[\begin{array}{l}
 d\text{-rule} \\
 \text{INPUT} \quad \left\langle \boxed{1}, \left[\begin{array}{l}
 \text{auxv-lxm} \\
 \text{ARG-ST} \langle \boxed{2} \rangle \oplus \boxed{A}
 \end{array} \right] \right\rangle \\
 \text{OUTPUT} \quad \left\langle \boxed{1}, \left[\begin{array}{l}
 \text{dervv-lxm} \\
 \text{ARG-ST} \langle \boxed{2} \rangle
 \end{array} \right] \right\rangle
 \end{array} \right]$$

- Note that this is a derivational LR (*d-rule*) -- that is, lexeme-to-lexeme
- This means that SYN and SEM are unchanged, by default

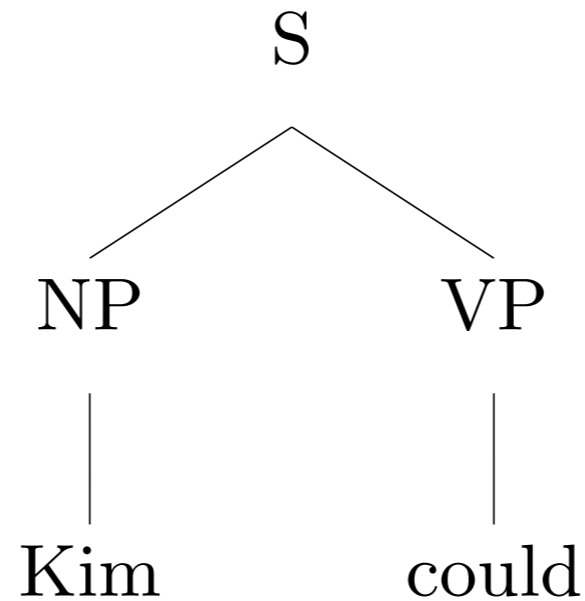
Ellipsis: A Sample Output



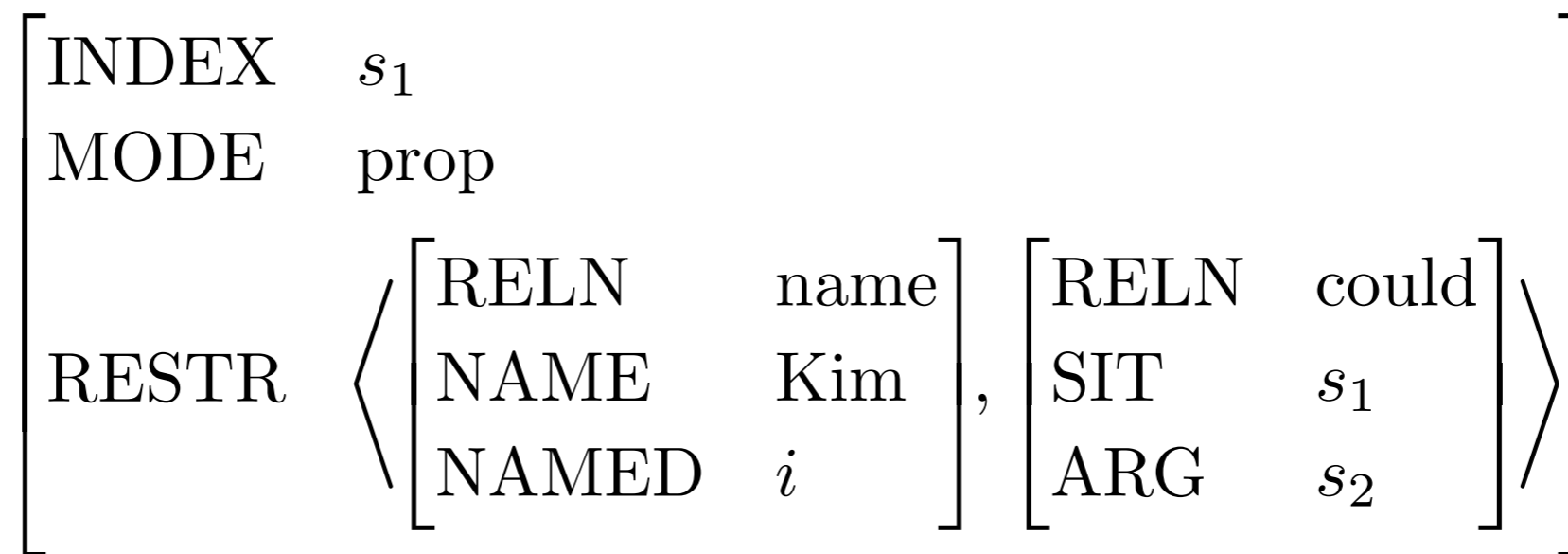
Ellipsis: A Sample Tree



Semantics of Ellipsis



What is the SEM value of the S node of this tree?



Note: s_2 has to be filled in by context.

Infinitival *to* Revisited

- VP Ellipsis can occur after *to*:

We didn't find the solution, but we tried to.

- This is covered by our Ellipsis LR if we say *to* is [AUX +].
- Since AUX is declared on type *verb*, it follows that *to* is a verb.

do Revisited

- Chomsky's old analysis: in sentences w/o auxiliaries...
 - Tense can get separated from the verb in various ways
 - Negation/Reaffirmation inserts something between Tense and the following verb
 - Inversion moves Tense to the left of the subject NP
 - Ellipsis deletes what follows Tense
 - When this happens, *do* is inserted to support Tense
- Our counterpart:
 - NICE properties hold only of auxiliaries
 - *do* is a semantically empty auxiliary, so negated, reaffirmed, inverted, and elliptical sentences that are the semantic counterparts to sentences w/o auxiliaries are ones with *do*.

Summary

- Our analysis employs straightforward mechanisms
 - Lexical entries for auxiliaries
 - 3 new features (AUX, POL, INV)
 - 4 lexical rules
- We handle a complex array of facts
 - co-occurrence restrictions (ordering & iteration)
 - the NICE properties
 - auxiliary *do*
 - combinations of NICE constructions

Overview

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Reading Questions

- Is the sentence *Sandy so did not write that.* grammatical? Is the ADV(pol) *not* constituent or sentential negation?
- I definitely use and have heard the construction in (a) with "too," but I'm not sure about the one in (b) with "so." Is the construction in (b) supposed to mean the same thing as that in (a)?

(a) Pat will too leave.

(b) Pat will so leave.

Reading Questions

- I often hear sentences with 'so not' where the 'so' seems to emphasize the 'not' aspect of the sentence.

Kim is so not happy.

Sandy is so not mad at you.

- Are these examples of constituent negation?
Or are 'so' and 'not' both ADV_pol?
- Is the language changing with respect to "so",
and if so, can our grammar keep up?

Reading Questions

- I can't seem to differentiate between a constituent negation and a negation placed only in the verb. How do you differentiate between them?
- Can a sentence like *He can not smoke.* be interpreted as exhibiting either kind of negation, with the following senses:
 - (i) He is able to not smoke. [constituent negation]
 - (ii) He is not able to smoke. [sentential negation]

Reading Questions

- How will the grammar handle cases like *He'll go downtown tomorrow?* Will it be similar to contraction?
- Wouldn't contractions like "it's" for "it is" or "you're" for "you are" not work with our Contraction Lexical Rule since those contractions aren't negations?

Reading Questions

- I feel like it would be that truer to the morphological history of the word to have some sort of phrasal rule to morph a phrase into a word. Wouldn't it?
- It strikes me as a little odd to have two separate lexical rules that add negation to auxiliary verbs - both the ADVpol-Addition Lexical Rule and the Contraction Lexical Rule. Intuitively, I feel like I want this to only be a pronunciation difference, outside of the realm of what we're tackling. Does this mean that we also want our grammar to have rules that account for phonological shortenings like "gimme", "wanna", and "dunno"?

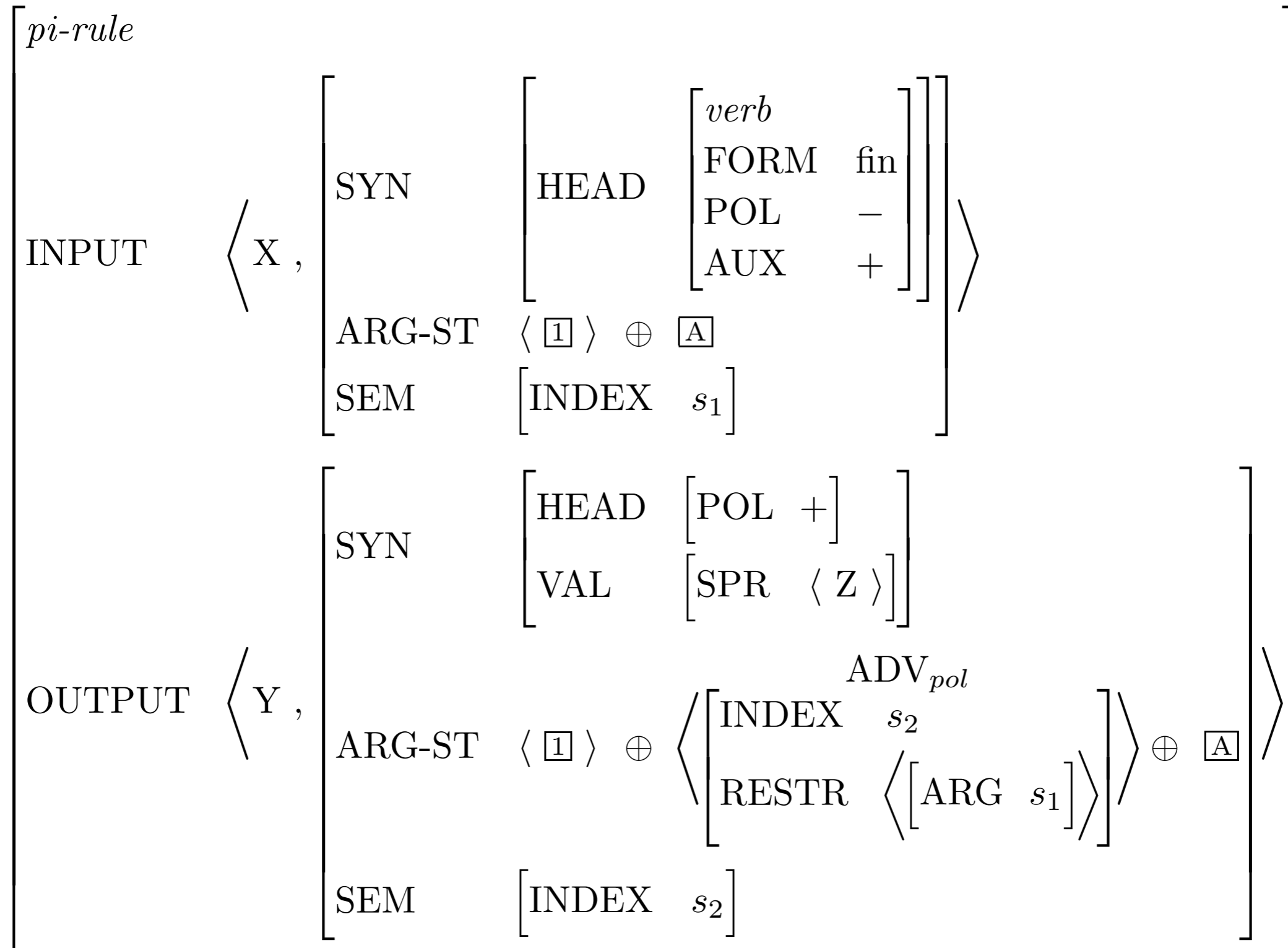
Reading Questions

- Is "better" really an auxiliary verb? I can see it in the sentences, but I've always thought of it as a contraction of some sort. Maybe of "would be better off...".

Reading Questions

- Why do we have SPR $\langle Z \rangle$ instead of nothing or SPR $\langle [1] \rangle$ in the output of the ADVpol Addition LR?
- Is it possible to have an INPUT to these rules with 0 elements on the SPR list, and then... uninvert them?
- Why don't we need to say SPR $\langle X \rangle$ on the input?

The ADV_{pol} -Addition Lexical Rule



Reading Questions

- The Ellipsis Lexical Rule and the ADVpol-Addition Lexical Rule both involve 'factoring' the ARG-ST. What guarantees that only the first item on the list is taken out? Can the tag **ONLY** contain one item (i.e. the specifier, or one complement)? Is this also the reason for the first tag being a number (because it is inside of the a list), and the second being a letter (which seems to be used to convey a list, rather than an item on a list)?

Reading Questions

- Why there is X and Y difference in the definition of ADVPOL-Addition Lexical Rule (51)? Aren't they supposed to be the same? (It is same index [0] in (52).)

Reading Questions

- The Inversion Lexical Rule only accounts for yes-no questions, and it seems that we wouldn't want to get rid of the specifier for all cases of inversion. Wouldn't we want to posit a pi-rule that licenses the final argument of the verb, or predp-lxm even, from the INPUT as a wh-pronoun in the SPR position of the OUTPUT?

What are you eating?

Who will you be going to the movies with?

Reading Questions

- Are there similarities of the Inversion Lexical Rule to producing an active or passive sentence from the other? Do we have something like an "Active to Passive Lexical Rule" or vice versa?
- Why did we limit the Inversion Lexical Rule such that a MODE ques verb can not be the input to produce the inverted sentence with MODE prop? i.e. "Is Kim Happy?" -> "Kim is Happy" Which would then provide a Rule that can be reversed on it's own.

Reading Questions

- We need *dervv-lxm* because the ARG-ST has only one element as compared to the *your-SPR-is-my-SPR* in the ARG-ST for *auxv-lxm*. For the Imperative Lexical Rule, we say that there is SPR <NP[PER 2nd]> but it is never realized. Why can't we do that with the *dervv-lxm*?
- Is limiting the input the only legit way of controlling the order of pi-rules that apply to a word?

Reading Questions

- I'm wondering why it is that the ADVpol-Addition Lexical Rule is formulated as a pi-rule instead of a d-rule (certainly not an i-rule, since the ARG-ST list must be changed). Is one possible reason that we don't want outputs of the ADVpol rule to be able to feed into certain inflectional or derivational rules, and therefore want it to have an output of type word?

Reading Questions

- In footnote 18 in section 13.5.4 it is mentioned that the absent constituent in the elliptical condition is interpreted as a VP but in the AUX alternative what is missing is the part of the AUX plus the following VP. Could you explain what is happening here further?
- This section on elliptical constructions leaves a lot of questions unanswered regarding the semantic relations of elliptical constructions if there's time could you explain a little more about how this is handled in HPSG.

Reading Questions

- Why is POL a feature of verb-lxm rather than auxv-lxm? Does it ever apply to a non-auxiliary verb?
- Where is the aux verb in:

(74)a. We asked them to open the window,
and they tried to.
- Is our process for negation compatible with ellipsis, or is it not?

Reading Questions

- The Inversion Lexical Rule makes me wonder about the distinction between specifier and complement. The book defines specifiers as 'subjects of clauses, determiners of noun phrases, and certain other constituents that are neither heads of the phrases they appear in nor complements to the heads' (p. 569), and specifically states that 'subjects... are arguments that are not complements, but specifiers' (p. 557). Cross-linguistically this seems to be how we're dealing with them (that is, whether we call something a 'specifier' is based on its role in the constituent rather than its location). However, the ILR handily dumps the specifier into the COMPS phrase in order to get the proper word order. Does the role of this word change? If not, why not just call the categories 'pre-head args' and 'post-head args' and not have the distinction above at all? If so, how and why?

Reading Questions

- Would it be possible to instead introduce a second Head-Specifier Rule that acts on [INV +] words or phrases? For example:
- [*phrase* SPR < >] -> H[INV +, SPR <[1]>] [1]

Reading Questions

- Does the book analyze this question?
- What about ain't? Is it the output of one of these rules?
- How do we handle:

Kleptomaniacs can not NOT steal.

Reading Questions

- Don't we need posit "your specifier is my first-complement"-kind of rule somewhere in Inversion? (Or is it already taken care of with auxv-lxm + ARP?)
- In (60) (word structure for *will* as output of Inversion LR) where does [CASE nom] on the first ARG-ST element come from?

Reading Questions

- Lastly, can you give some comments on implementing NICE properties in terms of CFG in the class? It seems like implementing NICE properties with CFG (using AUX) will soon make us to introduce new rules and things get hairy pretty quickly, I believe.