

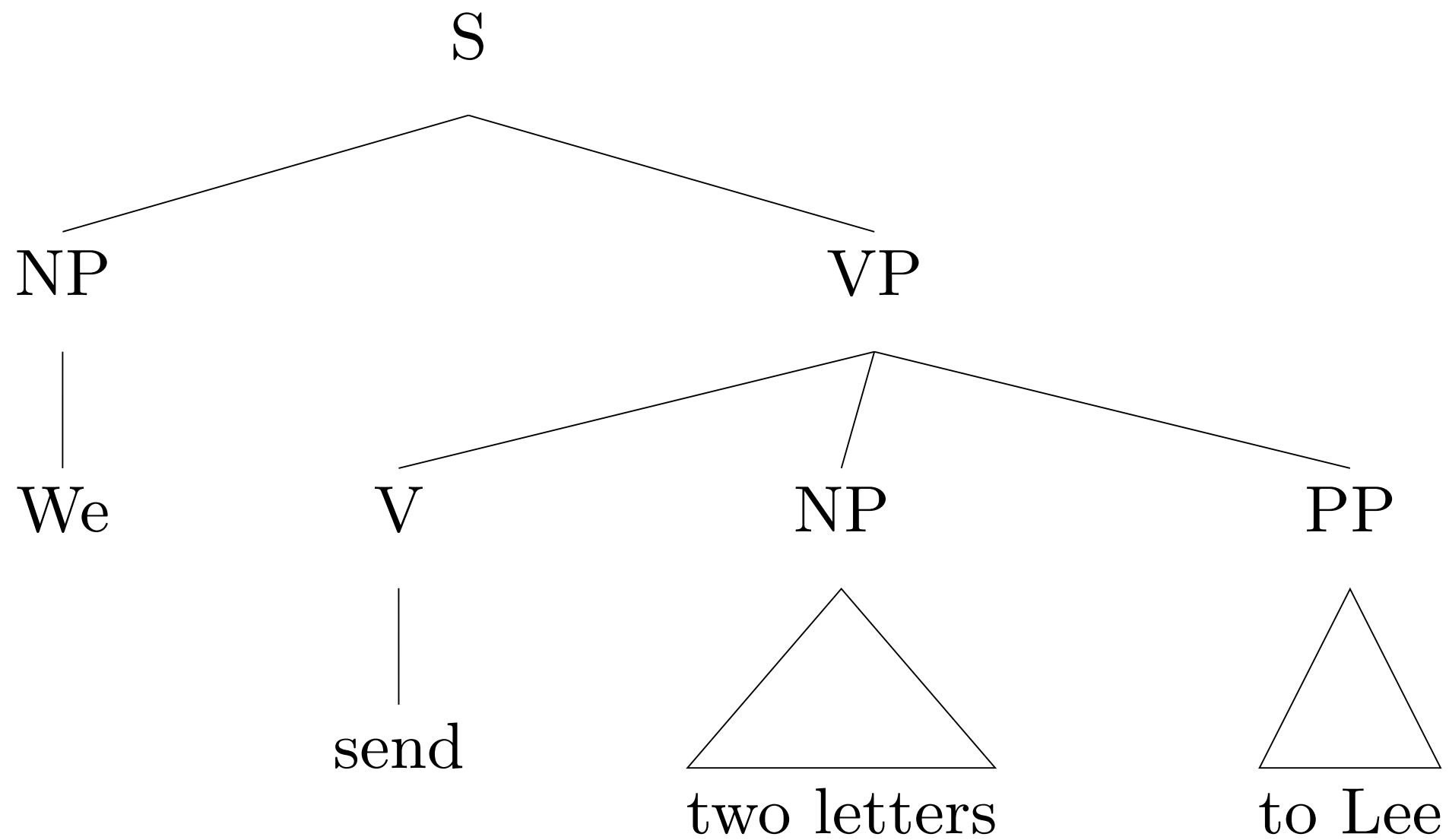
Ling 566
Oct 16, 2012
Review

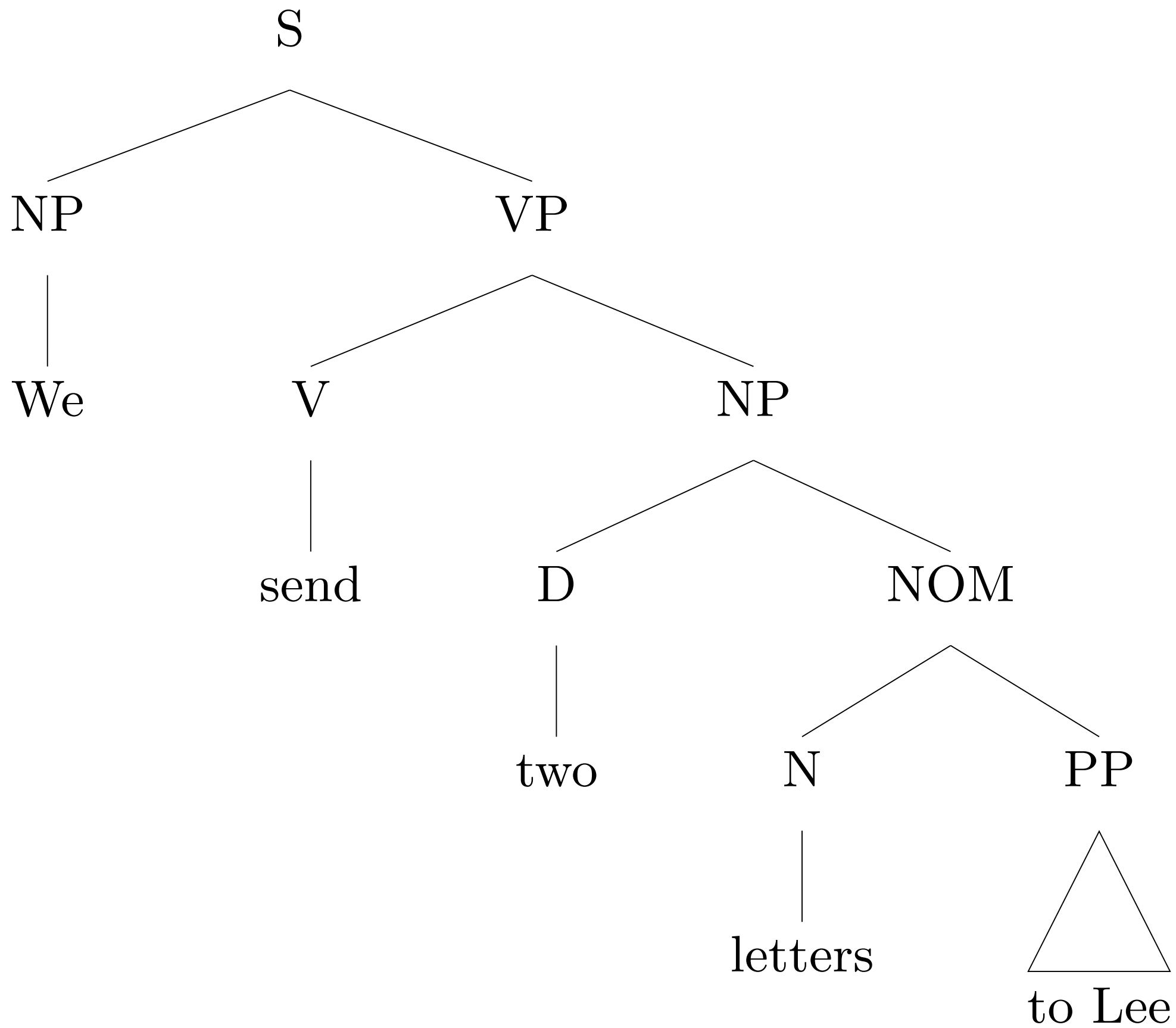
Overview

- Reading questions
- Homework tips
- SPR and COMPS
- Common mistakes
- Analogies to other systems you might know
- Problems 4.7, 4.9

Reading Questions

- In what way does the actual meaning of the two structures assigned to this sentence differ?
 - *We sent two letters to Lee.*
- Are they really both grammatical?





$$\begin{bmatrix} \text{RELN} & \mathbf{group} \\ \text{INST} & i \end{bmatrix}, \begin{bmatrix} \text{RELN} & \mathbf{speaker} \\ \text{INST} & l \end{bmatrix}, \begin{bmatrix} \text{RELN} & \mathbf{member} \\ \text{SET} & i \\ \text{ELEMENT} & l \end{bmatrix},$$

$$\begin{bmatrix} \text{RELN} & \mathbf{send} \\ \text{SIT} & s_7 \\ \text{SENDER} & i \\ \text{SENDEE} & j \\ \text{SENT} & k \end{bmatrix}, \begin{bmatrix} \text{RELN} & \mathbf{two} \\ \text{BV} & k \end{bmatrix}, \begin{bmatrix} \text{RELN} & \mathbf{letter} \\ \text{INST} & k \\ \text{ADDRESSEE} & m \end{bmatrix},$$

$$\begin{bmatrix} \text{RELN} & \mathbf{name} \\ \text{NAME} & \text{Lee} \\ \text{NAMED} & j \end{bmatrix}$$

$$\left[\begin{array}{ll} \text{RELN} & \mathbf{group} \\ \text{INST} & i \end{array} \right], \left[\begin{array}{ll} \text{RELN} & \mathbf{speaker} \\ \text{INST} & l \end{array} \right], \left[\begin{array}{ll} \text{RELN} & \mathbf{member} \\ \text{SET} & i \\ \text{ELEMENT} & l \end{array} \right],$$

$$\left[\begin{array}{ll} \text{RELN} & \mathbf{send} \\ \text{SIT} & s_7 \\ \text{SENDER} & i \\ \text{SENDEE} & j \\ \text{SENT} & k \end{array} \right], \left[\begin{array}{ll} \text{RELN} & \mathbf{two} \\ \text{BV} & k \end{array} \right], \left[\begin{array}{ll} \text{RELN} & \mathbf{letter} \\ \text{INST} & k \\ \text{ADDRESSEE} & m \end{array} \right],$$

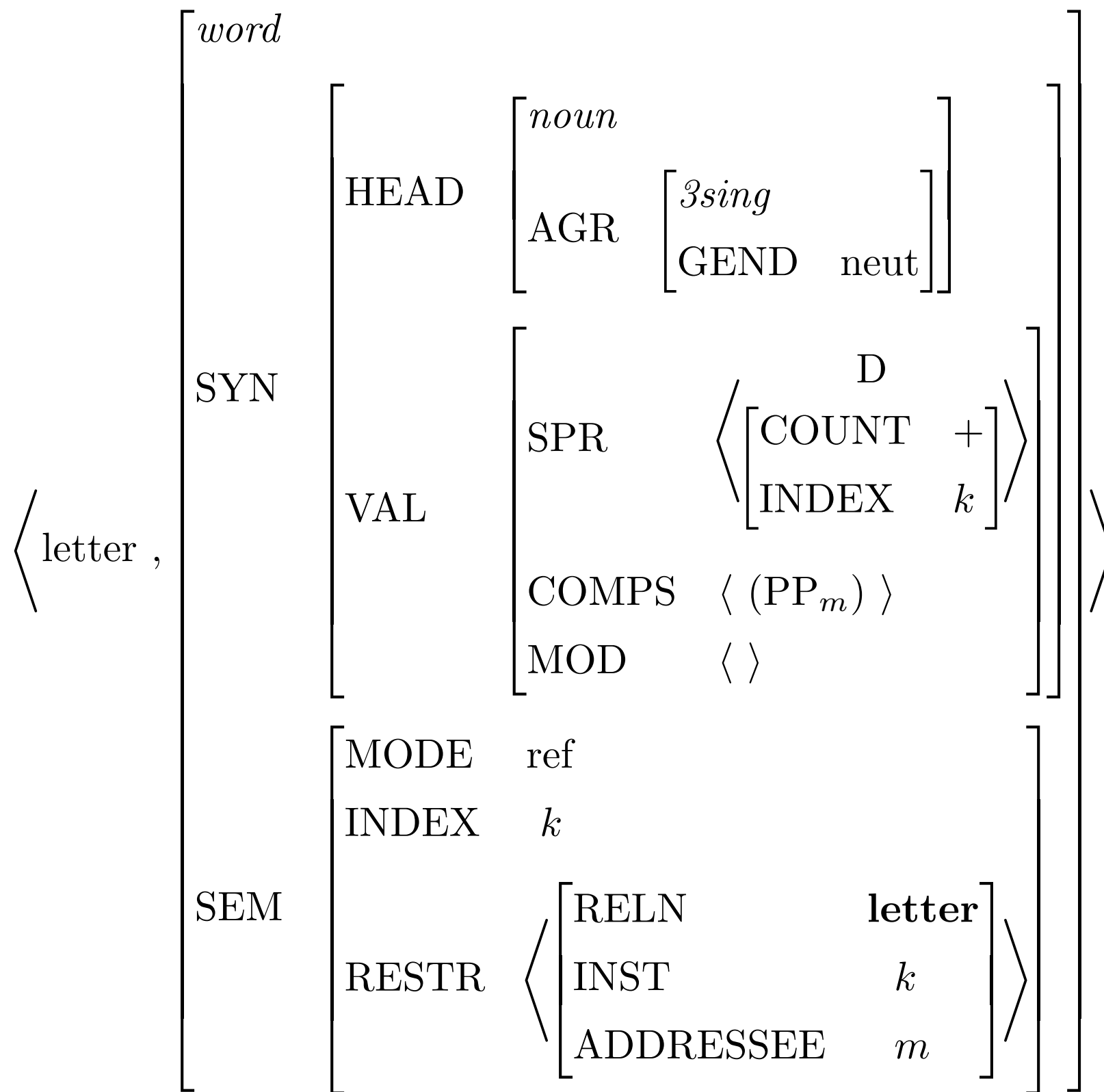
$$\left[\begin{array}{ll} \text{RELN} & \mathbf{name} \\ \text{NAME} & \text{Lee} \\ \text{NAMED} & m \end{array} \right]$$

Reading Questions

- How do we know what features to put into a *predication*?
- Would *letters* as in letters of the alphabet have the same lexical entry as *letters* like what's usually sent in the mail?
- How do we represent the difference in meaning between *send* and *sent*?

Reading Questions

- How do we get enough different INDEX values for a whole dictionary?
- Why sometimes s and sometimes s_n , and not t , u , v ?
- How can *to* be semantically empty and still have a meaningful INDEX value?
- How can the head of a phrase be semantically empty?
- Why does *letter* share its INDEX with its SPR?



Reading Questions

- Does set of well-formed structures correspond exactly to the set of well-formed English sentences?
- Do we have to understand the squiggly bits?
- Why bother formalizing?
- Don't these feature structures get ridiculously large?

Reading Questions

- Does English have dative case?
- Is it redundant to have a feature CASE for English given that we mostly use prepositions to mark 'case'?
- English nouns (other than pronouns) are underspecified for CASE. How do we figure out their particular CASE values when they are used in a tree?

Reading Questions

- Is position alone enough to tell whether something is SPR or COMPS?
- Will this approach work for morphologically complex languages as well?
- What ever happened to NOM?
- Is it worth memorizing the rules now?
- Why aren't we using NumP?

Reading Questions

- Is top-down or bottom-up more efficient in actual processing?
- How can we possibly do "simultaneous satisfaction" of all constraints?
- What are the best practices for writing trees going bottom-up (order of things to put in)?

Reading Questions

- Does not having to realize semantic roles mean we can license semantically weird sentences?
- Can we build a grammar that works with more than one sentence at a time? (I.e., paragraphs)

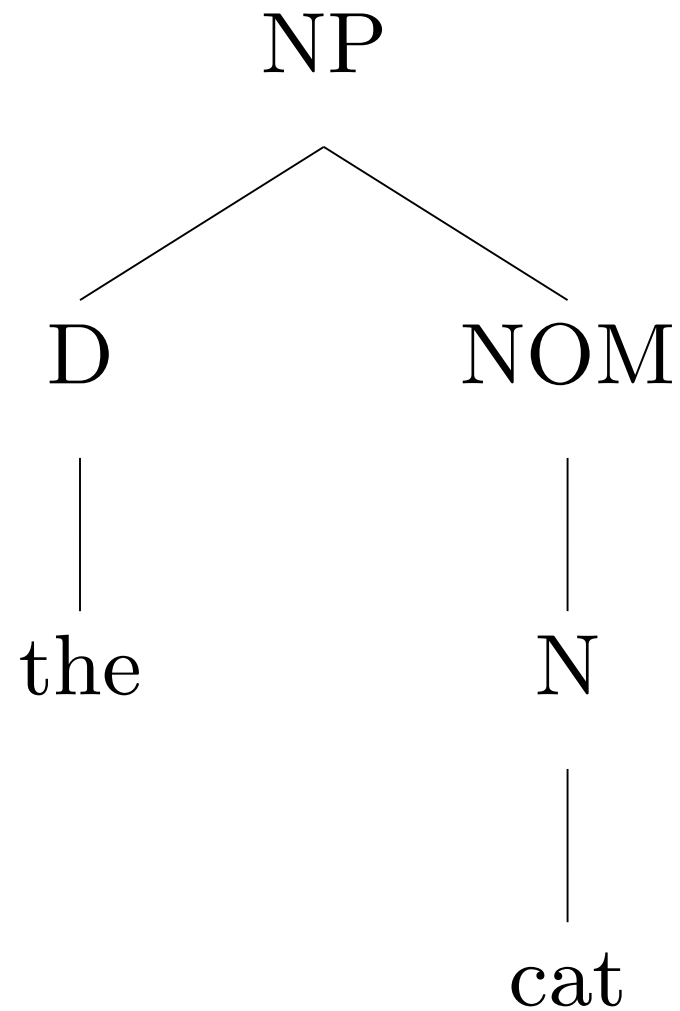
Homework tips/requests

- Type whenever possible
- Answer each part of each question separately
- Be sure to answer each part of each question, and follow the directions!
- Look over the problems early and ask questions
- Check your work
- Monitor GoPost
- WORK TOGETHER

SPR value on AP/PP?

- Kim grew fond of baseball.
- Kim and Sandy ate lunch in the park.
- Kim and Sandy are in the park.

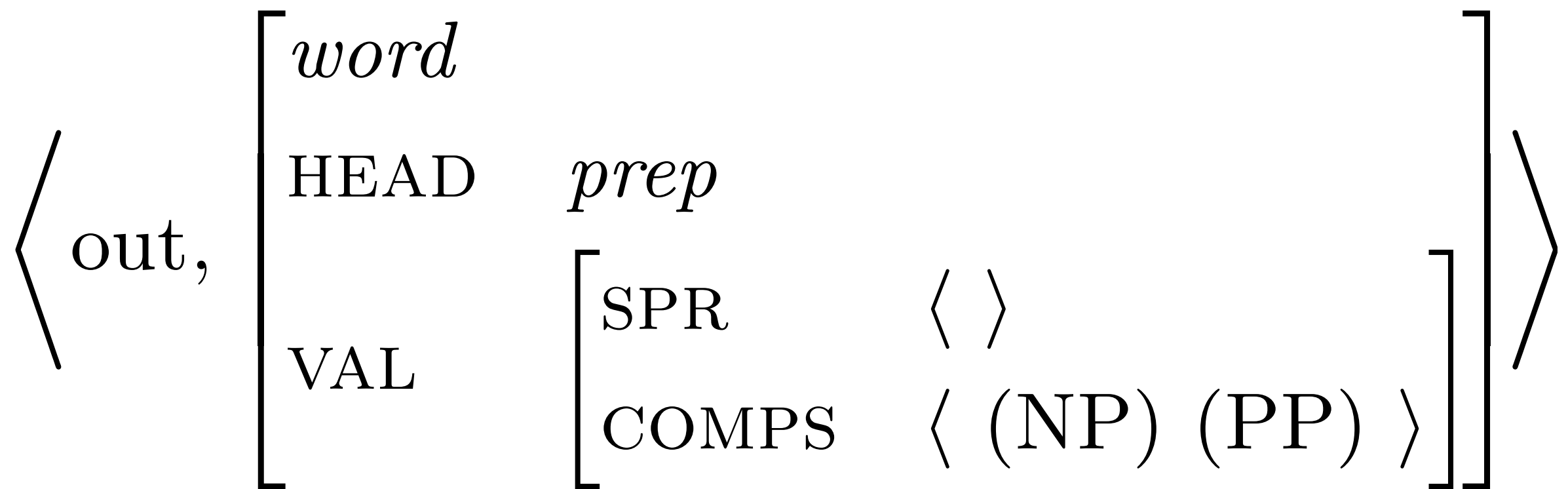
Which grammar does this tree go with?



What's wrong with this?

$$\left\langle \text{out}, \left[\begin{array}{ll} \textit{word} & \\ \text{HEAD} & \textit{prep} \\ \text{VAL} & \left[\begin{array}{ll} \text{SPR} & \langle \text{VP} \rangle \\ \text{COMPS} & \langle (\text{PP} \mid \text{NP}) \rangle \end{array} \right] \end{array} \right] \right\rangle$$

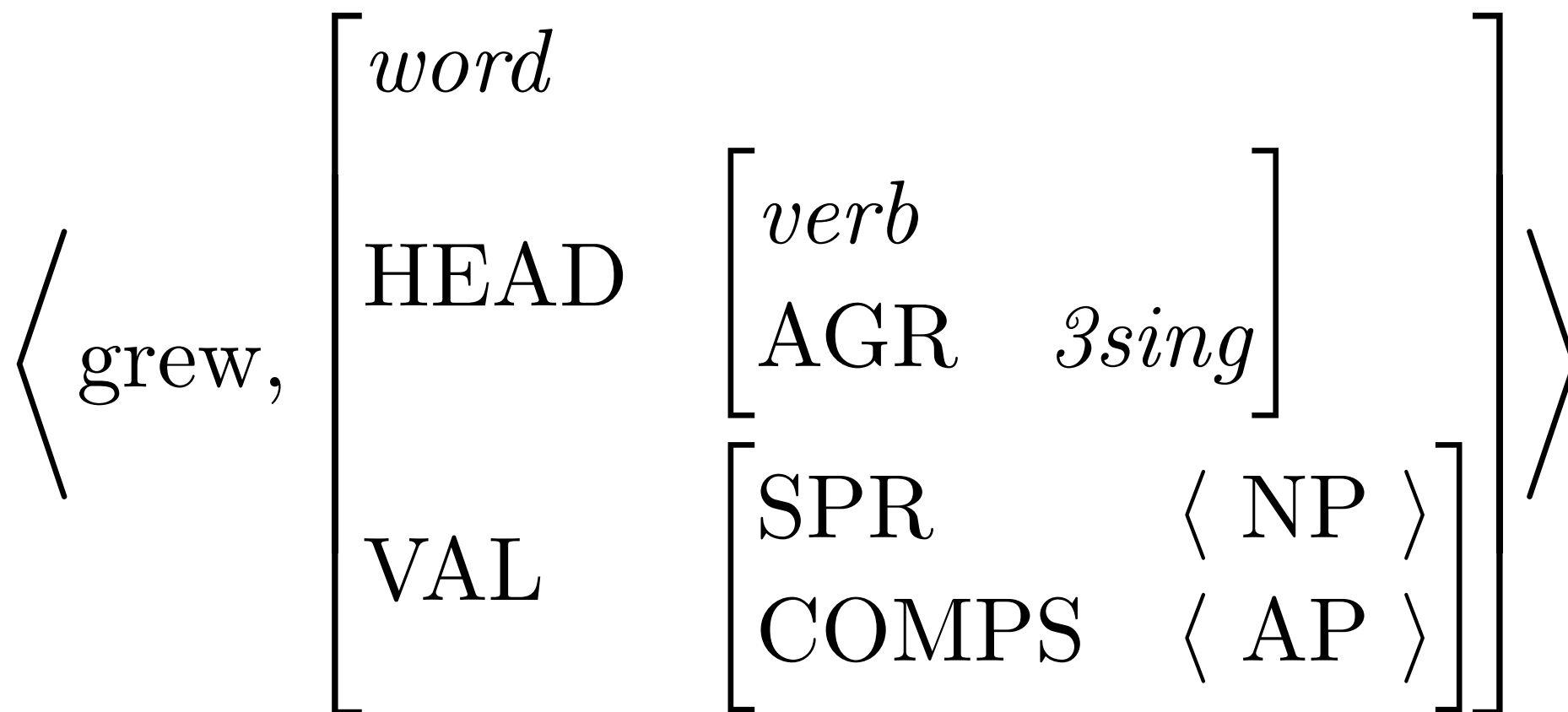
What's wrong with this?



What's wrong with this?

$\left\langle \text{out}, \begin{bmatrix} \textit{word} \\ \text{HEAD} & \textit{prep} \\ \text{VAL} & \begin{bmatrix} \text{SPR} & \langle \rangle \\ \text{COMPS} & (\text{NP} \mid \text{PP}) \end{bmatrix} \end{bmatrix} \right\rangle$

What's wrong with this?



What's wrong with this?

$$\left\langle \text{out}, \left[\begin{array}{ll} \textit{word} & \\ \text{HEAD} & \textit{preposition} \\ \text{VAL} & \left[\begin{array}{ll} \text{SPR} & \langle \rangle \\ \text{COMPS} & \langle (\text{NP} \mid \text{PP}) \rangle \end{array} \right] \end{array} \right] \right\rangle$$

What's wrong with this?

$\left\langle \text{there,} \left[\begin{array}{l} \textit{phrase} \\ \text{HEAD} \\ \text{VAL} \end{array} \begin{array}{l} \textit{prep} \\ \left[\begin{array}{l} \text{SPR} \\ \text{COMPS} \end{array} \right] \begin{array}{l} \langle \rangle \\ \langle \rangle \end{array} \end{array} \right] \right\rangle$

Tags & lists

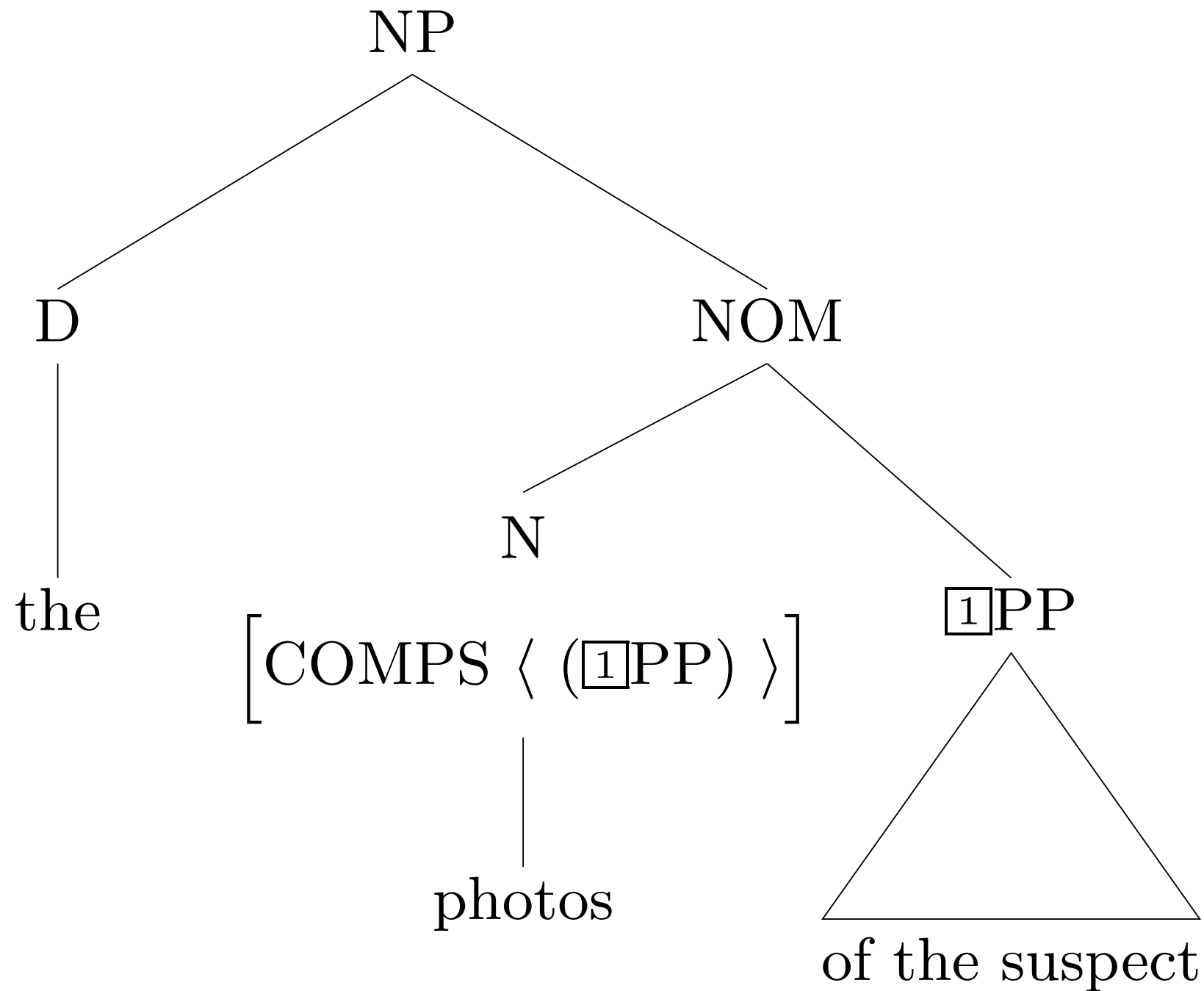
- What's the difference between these two?

$$\left[\text{SPR} \quad \boxed{1} \langle \text{NP} \rangle \right]$$

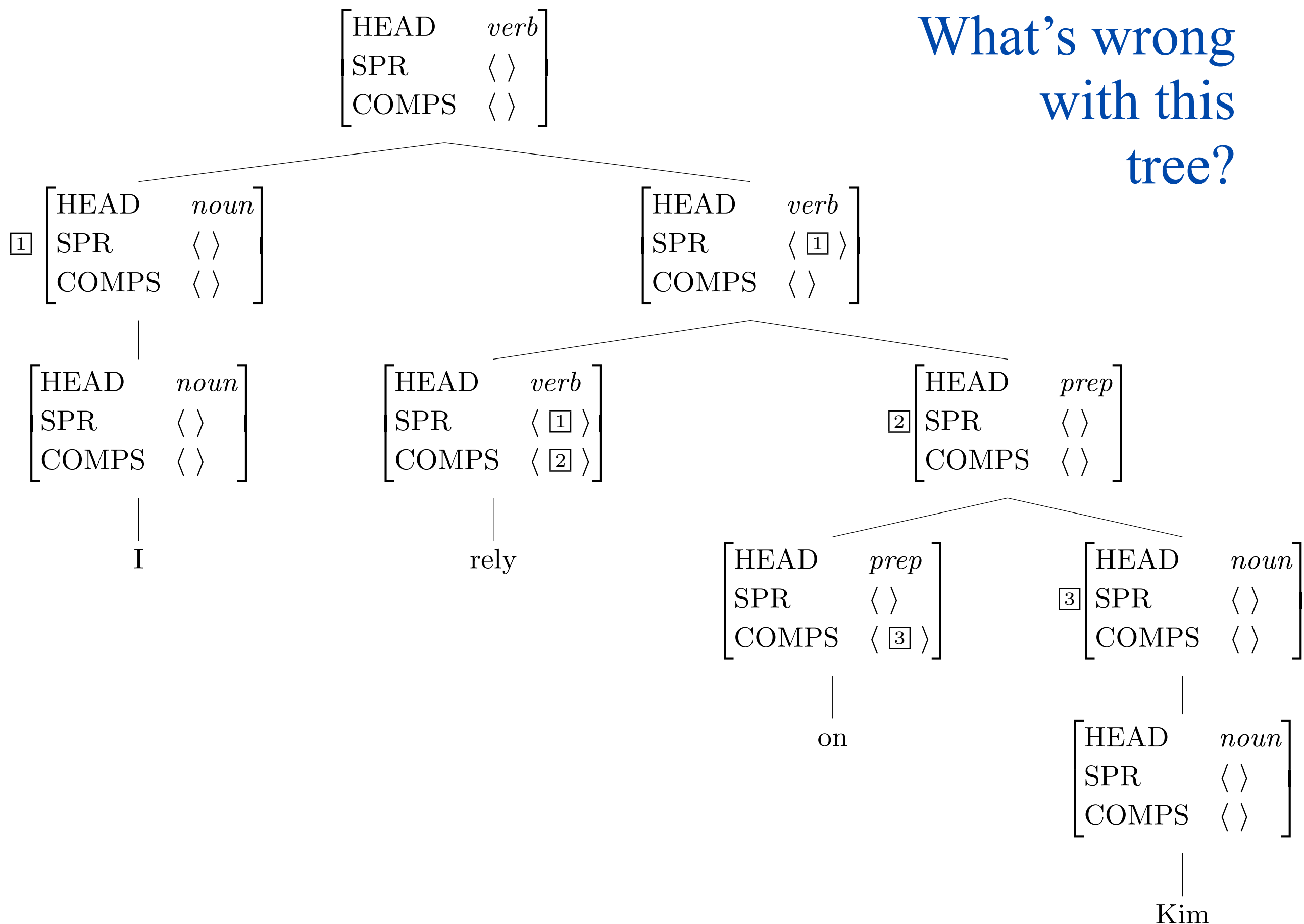
$$\left[\text{SPR} \quad \langle \boxed{1} \text{NP} \rangle \right]$$

- When does it matter?

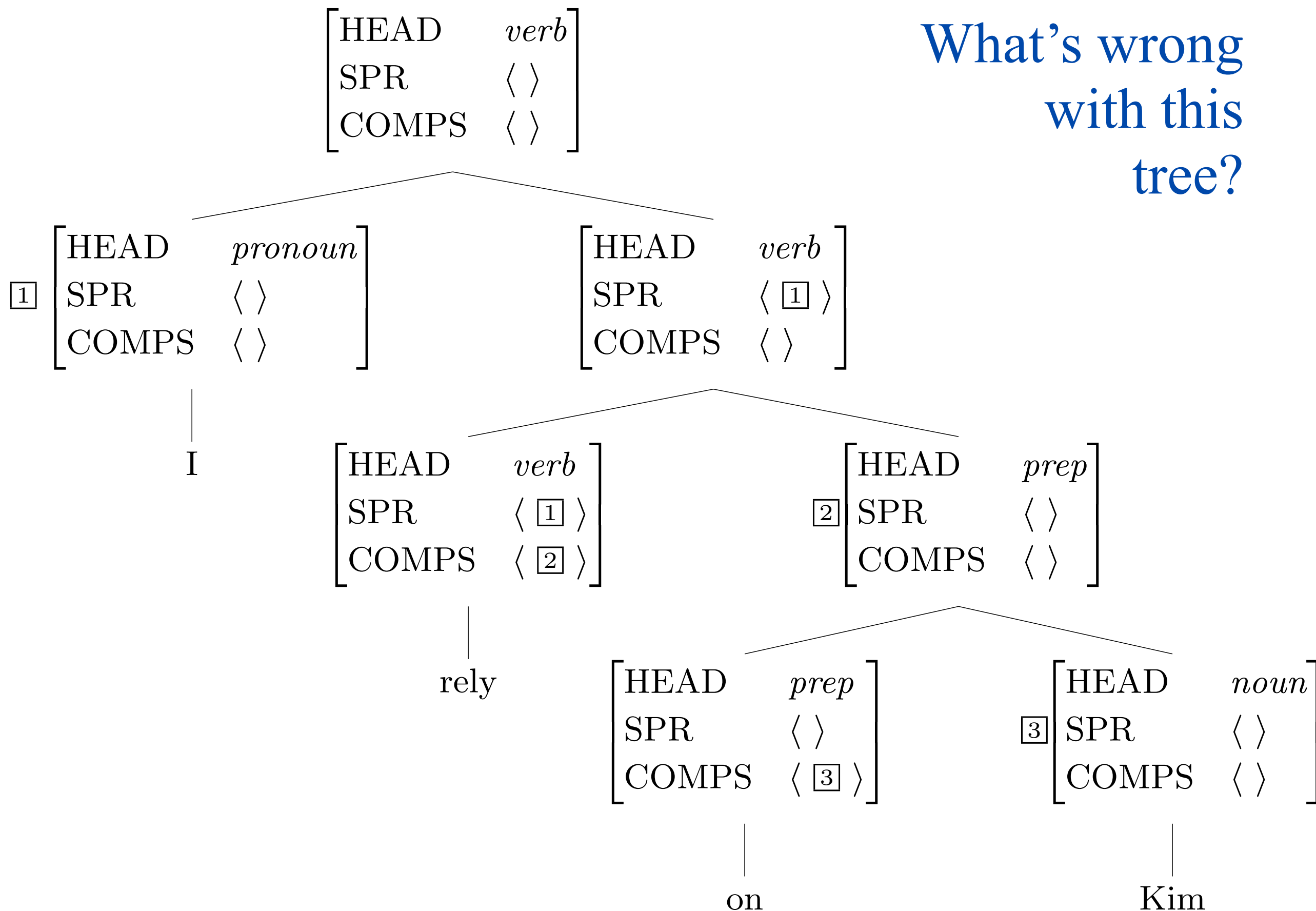
What's wrong with this tree?



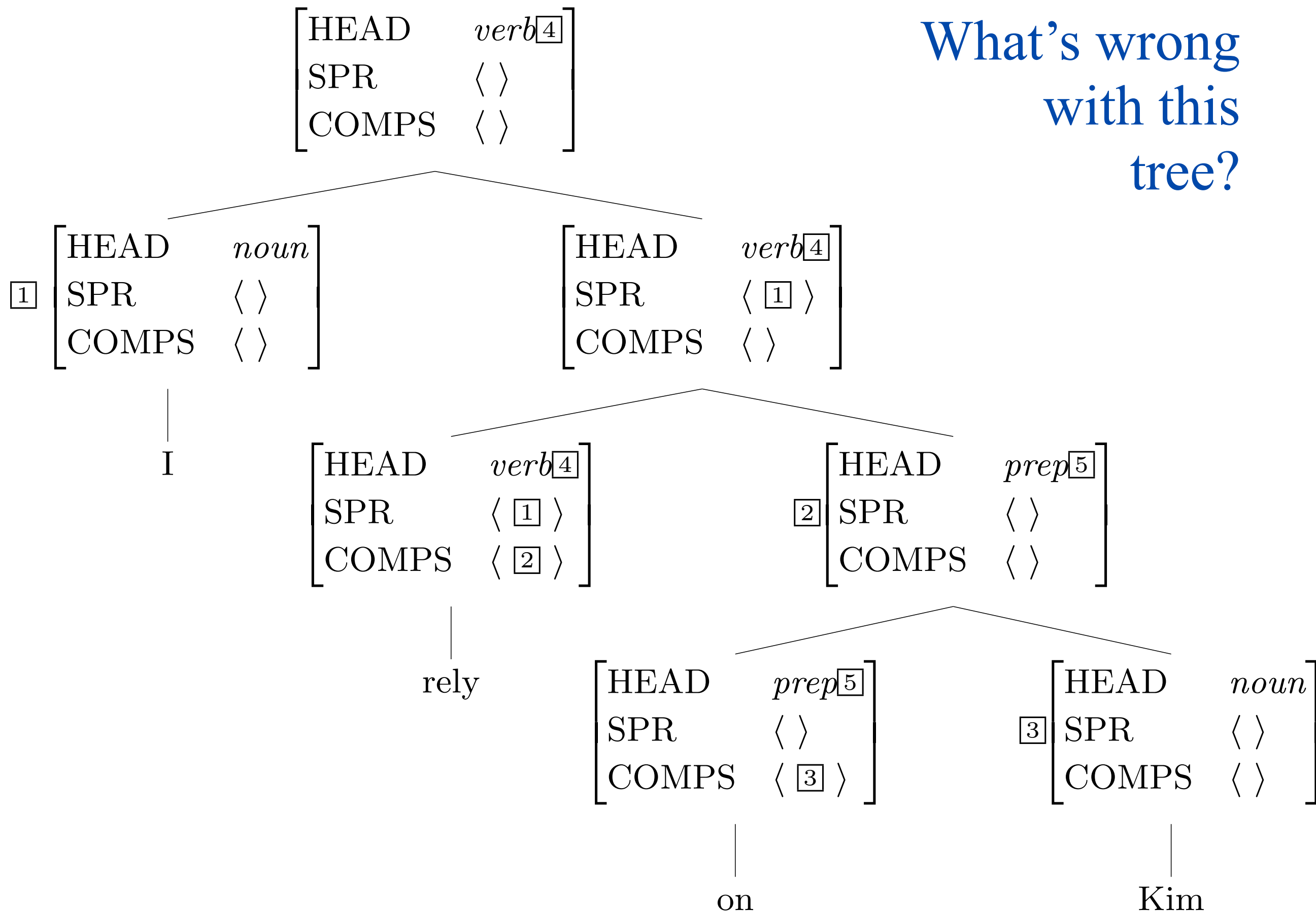
What's wrong
with this
tree?



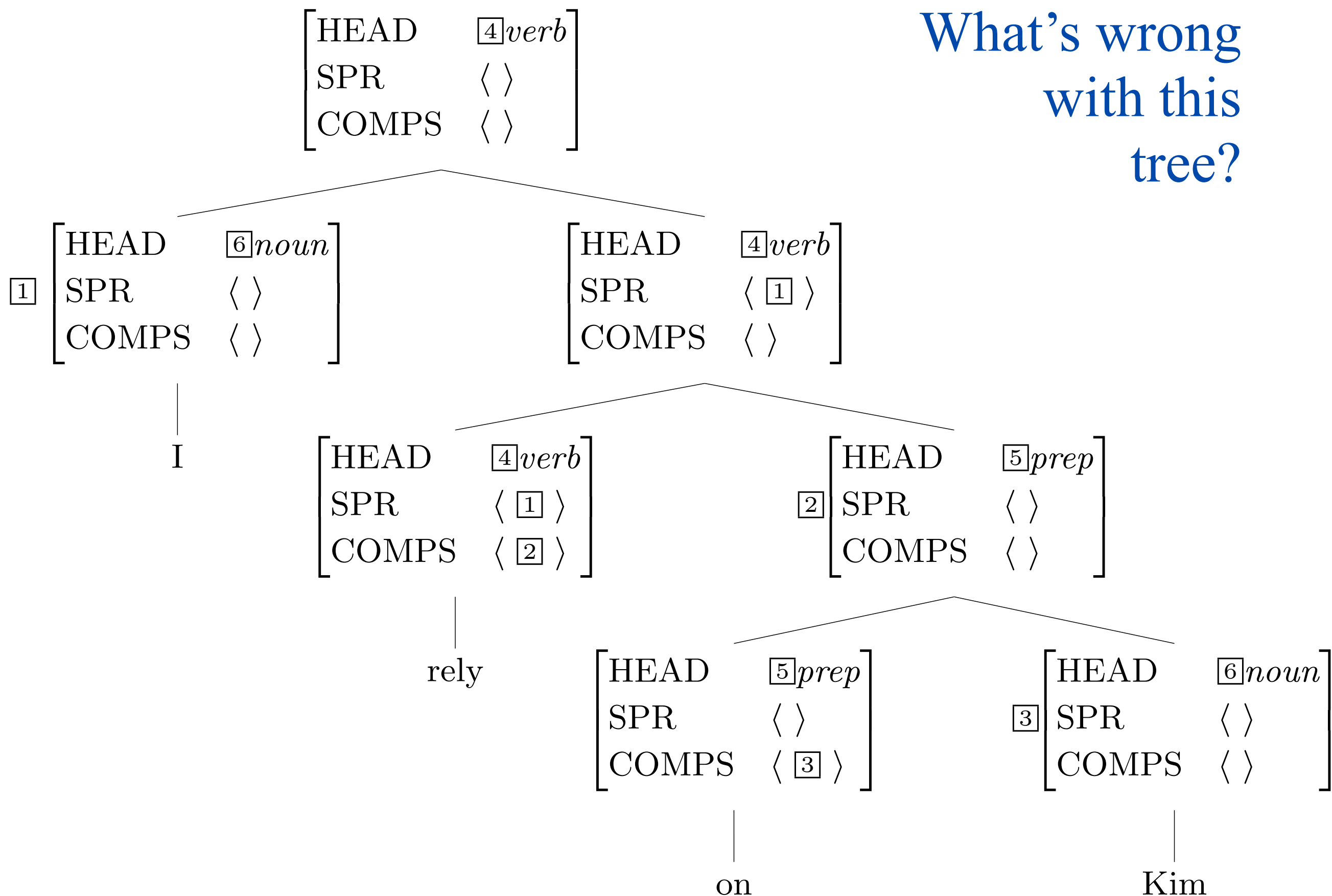
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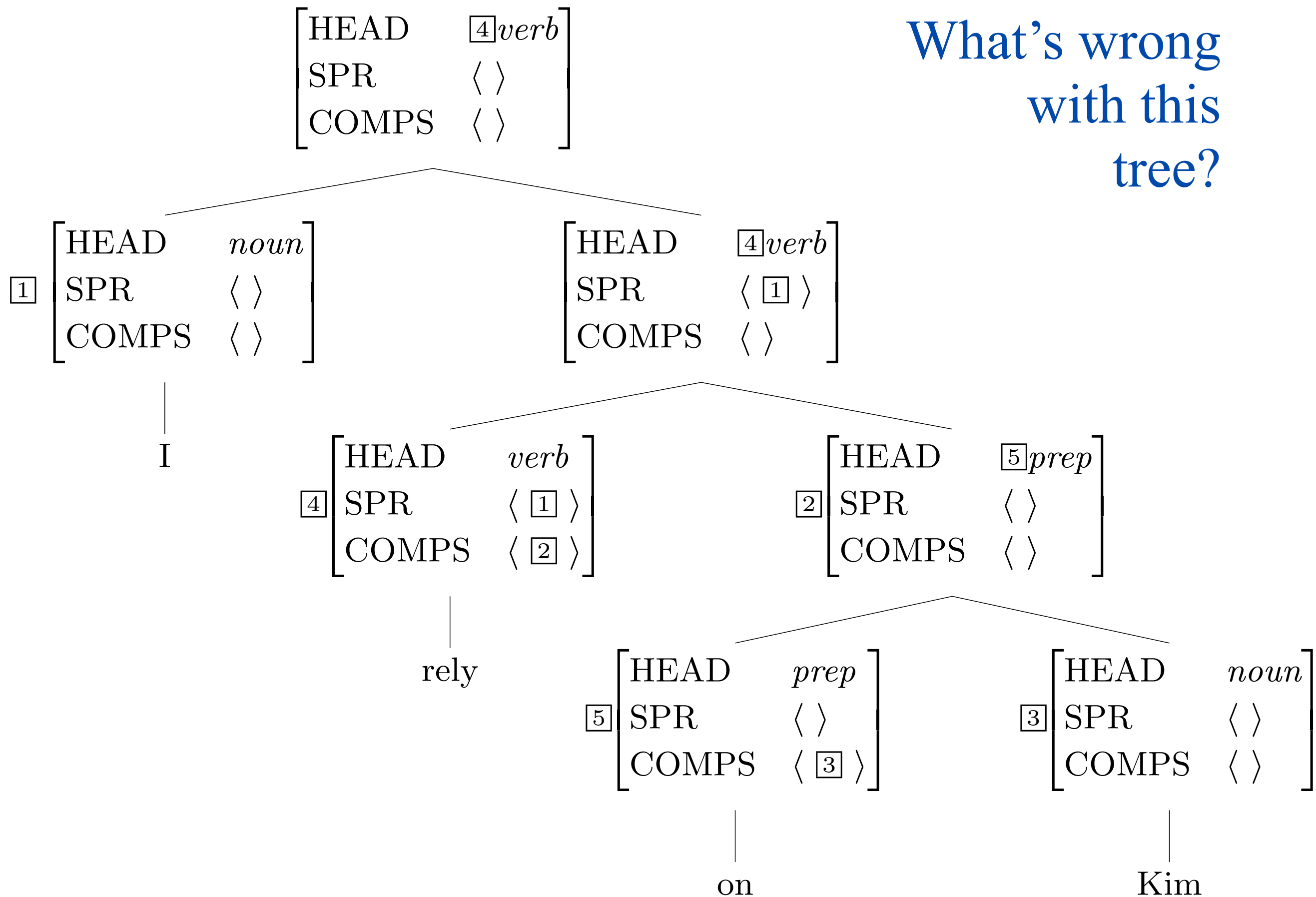
What's wrong
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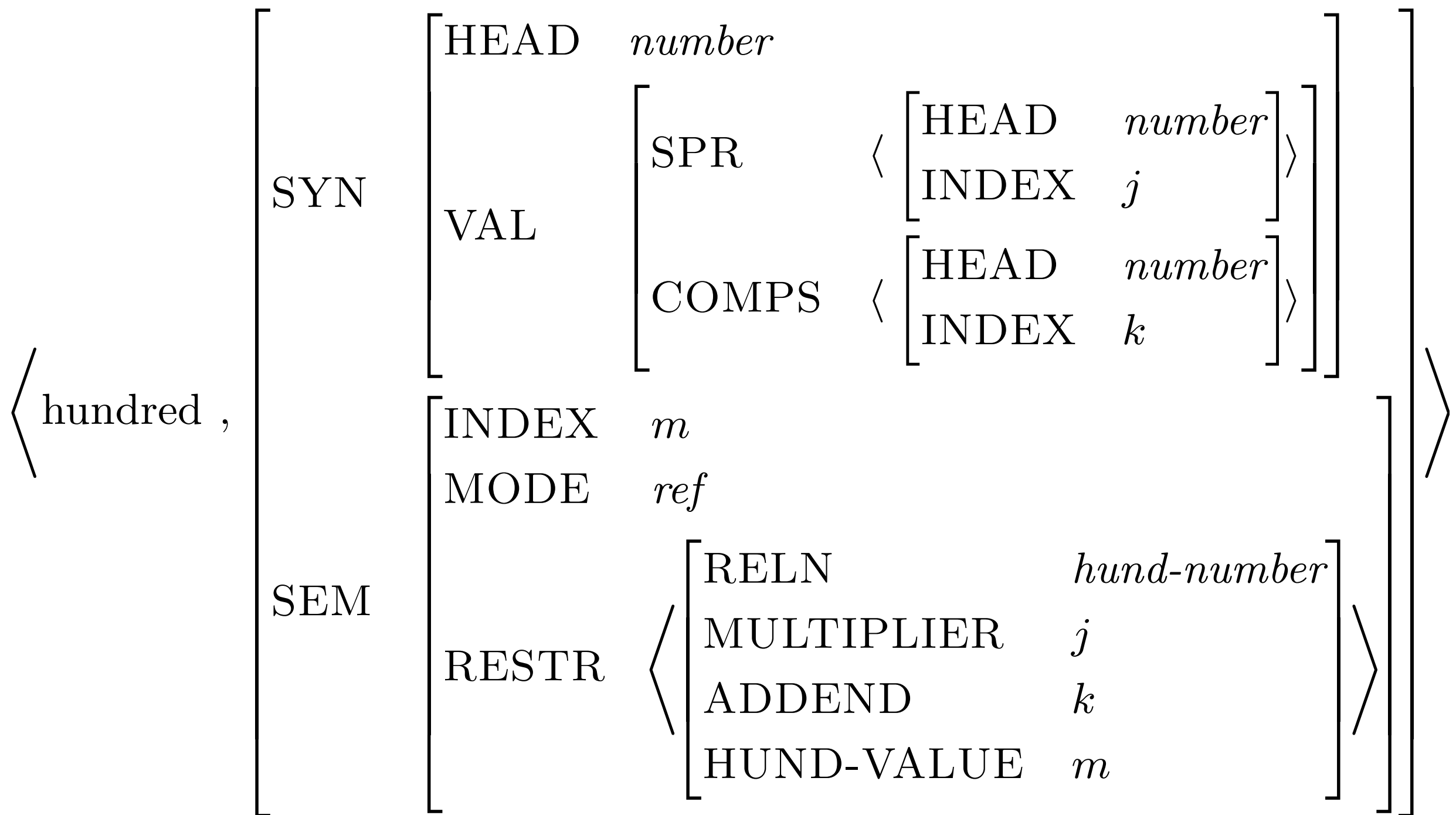
What's wrong
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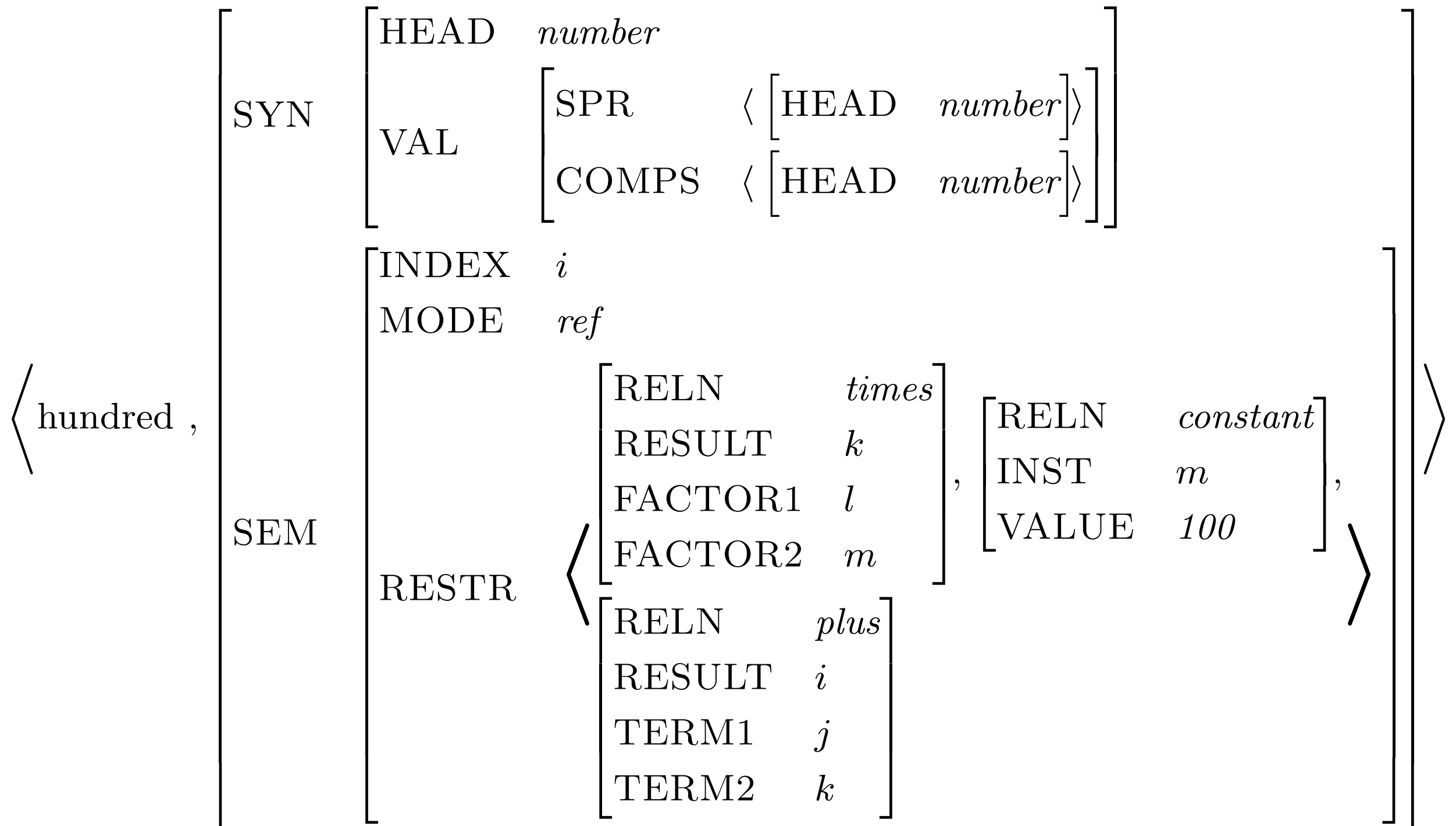
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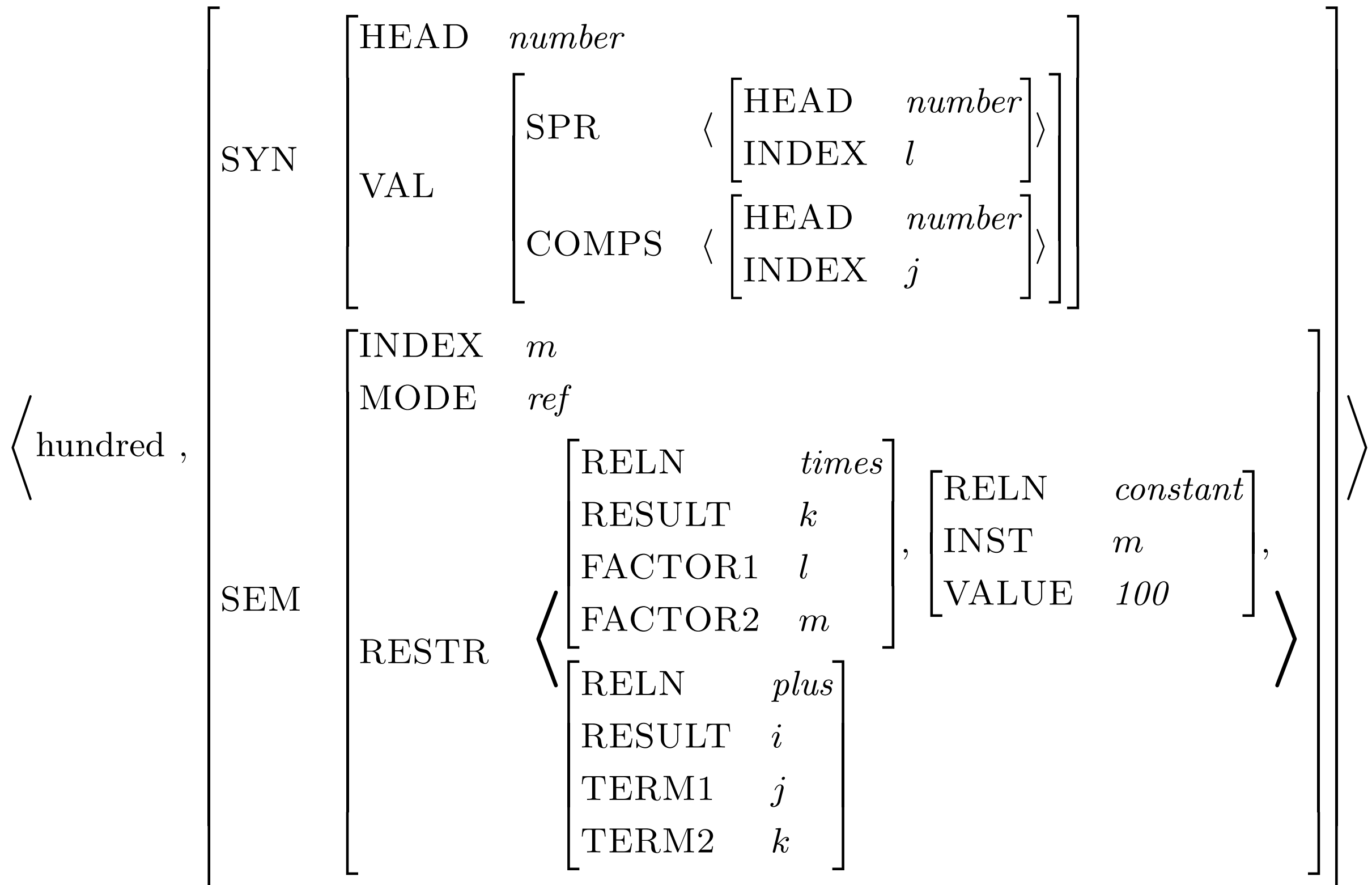
What's wrong with this?



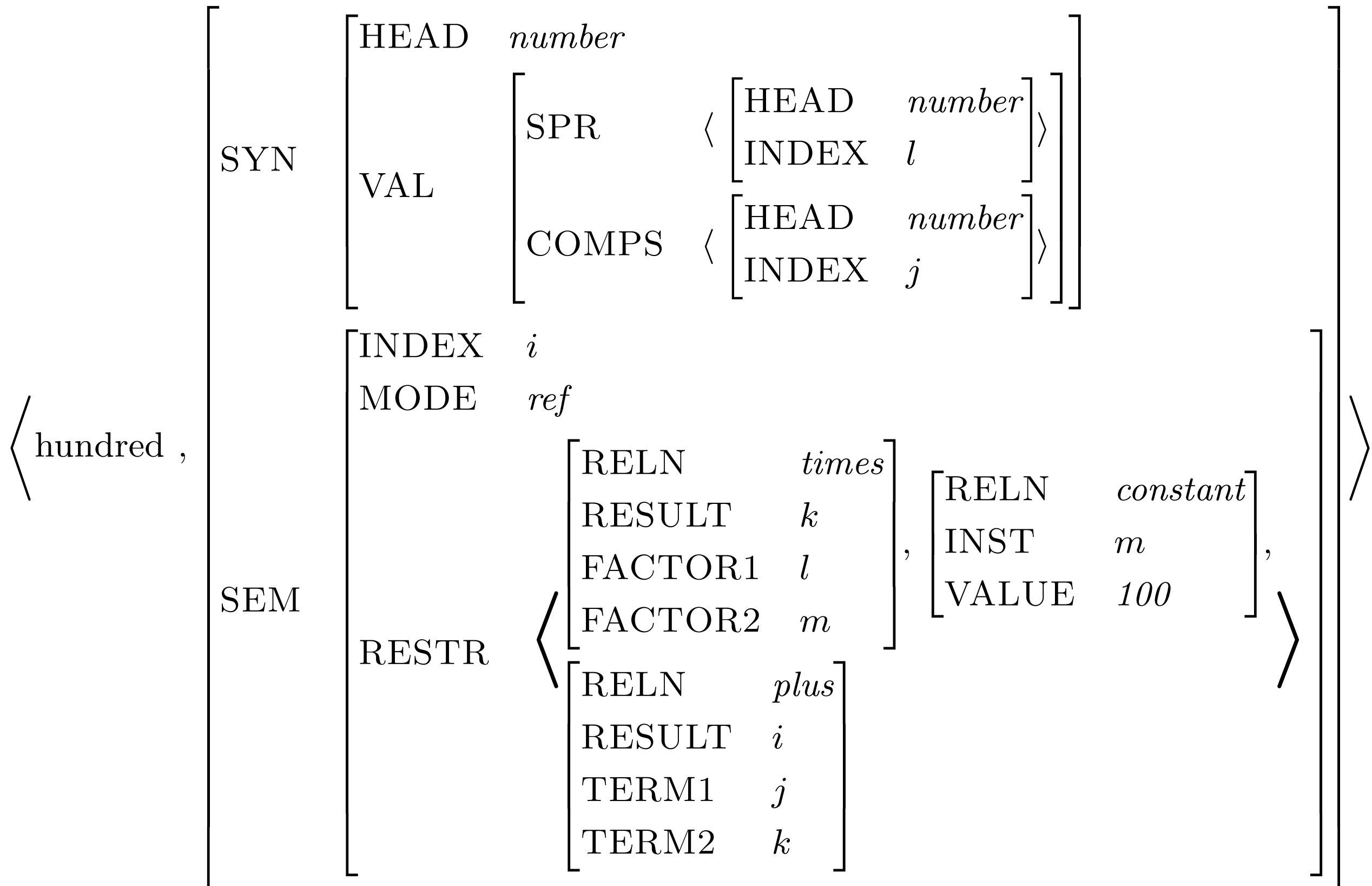
And this?



How about this?



Better version



Type hierarchy analogies

- How is this formalism like OOP?
- How is it different?
- How is the type hierarchy like an ontology?
- How is it different?
- How is this formalism like the MP's formalism?
- How is it different?

Overview

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4.7 Icelandic Case

- How do the following support the analysis of case marking as a lexical phenomenon?

- (i) Drengurinn kyssti stúlkuna.
the-boy.NOM kissed the-girl.ACC
'The boy kissed the girl.'
- (ii) Drengina vantar mat.
the-boys.ACC lacks food.ACC
'The boys lack food.'
- (iii) Verkjanna gaetir ekki.
the-pains.GEN is-noticeable not
'The pains are not noticeable.'
- (iv) Barninu batnathi veikin.
the-child.DAT recovered-from the-disease.NOM
'The child recovered from the disease.'

4.9 Agreement in NP coord

- What is the NUM value of NPs coordinated with *and*?
- How does the PER value of coordinated NPs get computed from the PER value of the coordinands? Use examples like the following:

You and she distinguished yourselves/
*themselves/*ourselves.