# Ling 566
# Oct 19, 2011

## Review

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# Overview

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

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# Reading Questions

- Are the grammar rules applied in some defined order of priority (e.g., HCR before HSR), or can they be applied in any order?
- Re (17) on p.179 the text says that the predications are listed "in the indicated order". To what extent is that order meaningful?

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# Reading Questions

- The lexical entry for *letter* has an ADDRESSEE role in its semantics, but in *They sent us a letter*, the text claims that nothing is coindexed with that role. Why isn't *us* coindexed with it?

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$$\left\langle \text{letter} \ , \left[\begin{array}{ll} \textit{word} & \\ \text{SYN} & \left[\begin{array}{ll} \text{HEAD} & \left[\begin{array}{ll} \textit{noun} & \\ \text{AGR} & \left[\begin{array}{ll} \textit{3sing} & \\ \text{GEND} & \text{neut} \end{array}\right] \end{array}\right] \\ \text{VAL} & \left[\begin{array}{ll} \text{SPR} & \left\langle \left[\begin{array}{ll} & \text{D} \\ \text{COUNT} & + \\ \text{INDEX} & k \end{array}\right] \right\rangle \\ \text{COMPS} & \langle\ (\text{PP}_m)\ \rangle \\ \text{MOD} & \langle\ \rangle \end{array}\right] \end{array}\right] \\ \text{SEM} & \left[\begin{array}{ll} \text{MODE} & \text{ref} \\ \text{INDEX} & k \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \textbf{letter} \\ \text{INST} & k \\ \text{ADDRESSEE} & m \end{array}\right] \right\rangle \end{array}\right] \end{array}\right] \right\rangle$$

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# Reading Questions

- Do the two structures for *We send two letters to Lee* have the same meaning?

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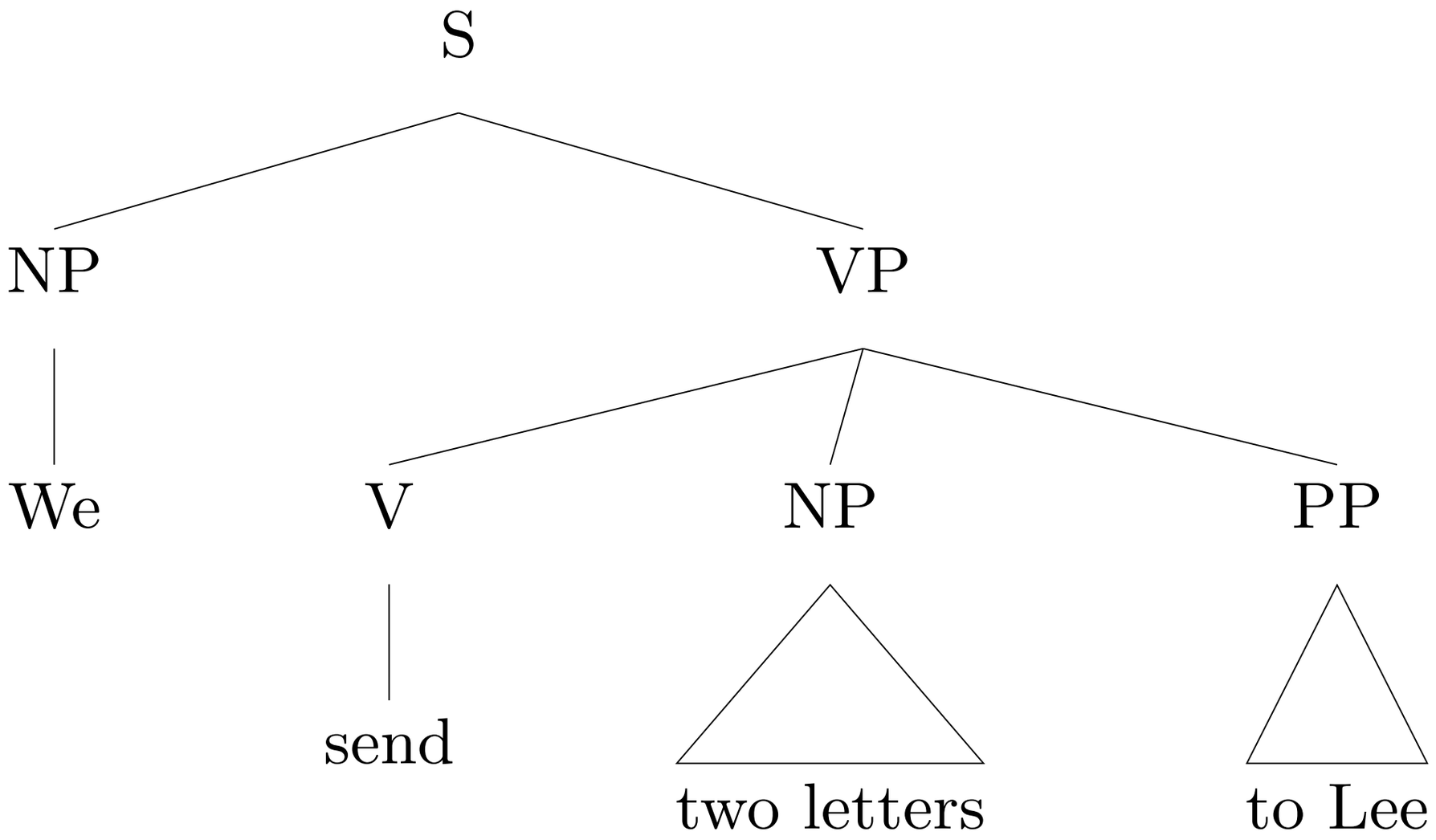


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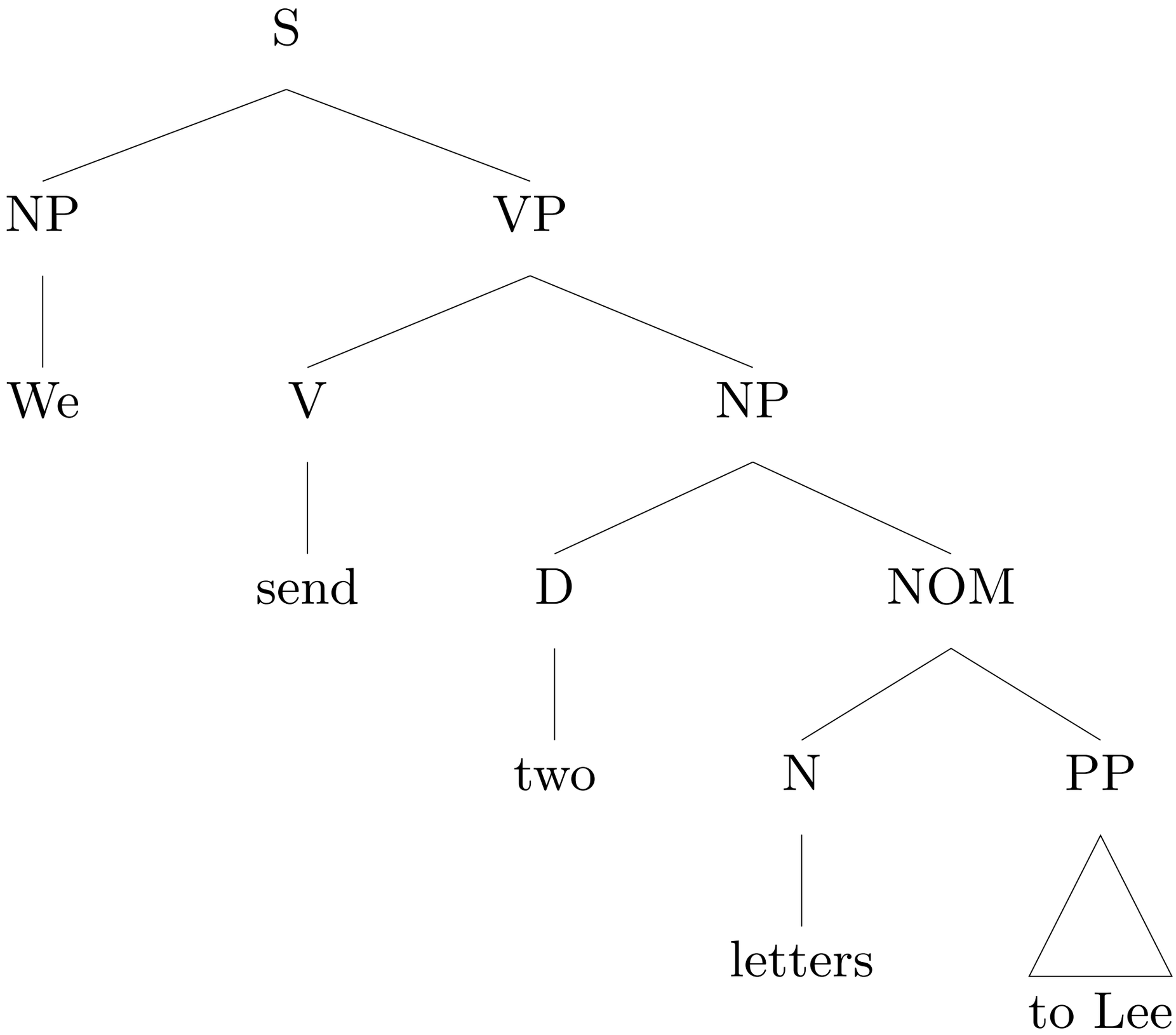


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$$\begin{bmatrix} \text{RELN} & \textbf{group} \\ \text{INST} & i \end{bmatrix}, \begin{bmatrix} \text{RELN} & \textbf{speaker} \\ \text{INST} & l \end{bmatrix}, \begin{bmatrix} \text{RELN} & \textbf{member} \\ \text{SET} & i \\ \text{ELEMENT} & l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

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

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

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

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

$$\begin{bmatrix} \text{RELN} & \textbf{name} \\ \text{NAME} & \text{Lee} \\ \text{NAMED} & m \end{bmatrix}$$

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# Reading Questions

- How much of the lexical entries will we be expected to include in our assignments? Will this be specified in the problems? To what extent can we use abbreviations?
- Should this be called “lexically driven phrase structure grammar” instead?
- Is it feasible to show complete trees of complex sentences in any reasonable amount of space?

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# Reading Questions

- Page 173: (10) obeys the Valence Principle. Doesn't that apply to all of VAL? Shouldn't the phrase have [2] in its SPR list? It says here that because of the Head Specifier rule, the mother's SPR list is empty. Do rules overtake principles? Furthermore, it appears to be completely contradicted on page 177, where it says (14) obeys the Head Complement Rule, so that the specifier bubbles up but the mother's COMPS list is empty. How can both happen at the same time, and what's the point of the Valence Principle if we're ignoring it because of these rules?

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# Reading Questions

- **Valence Principle**: Unless the rule says otherwise, the mother's values for the VAL features (SPR, COMPS, and MOD) are identical to those of the head daughter.

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# Reading Questions

- It seems strange to have an ADDRESSEE in the semantics for *letter*. Are we saying that "letter *to* someone" is more common than "letter *from* someone"?
- What are we still striving to improve? Is the main issue with the grammar at this point improving the system of syntactic/semantic relationships for creating grammatical sentences?

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# Reading Questions

- "When these two words [*a* and *letter*] are combined via the HSR, the INDEX of the specifier of *letter* and the INDEX of *a* are identified." (p.173) What is meant by identified?

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# 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

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# 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.

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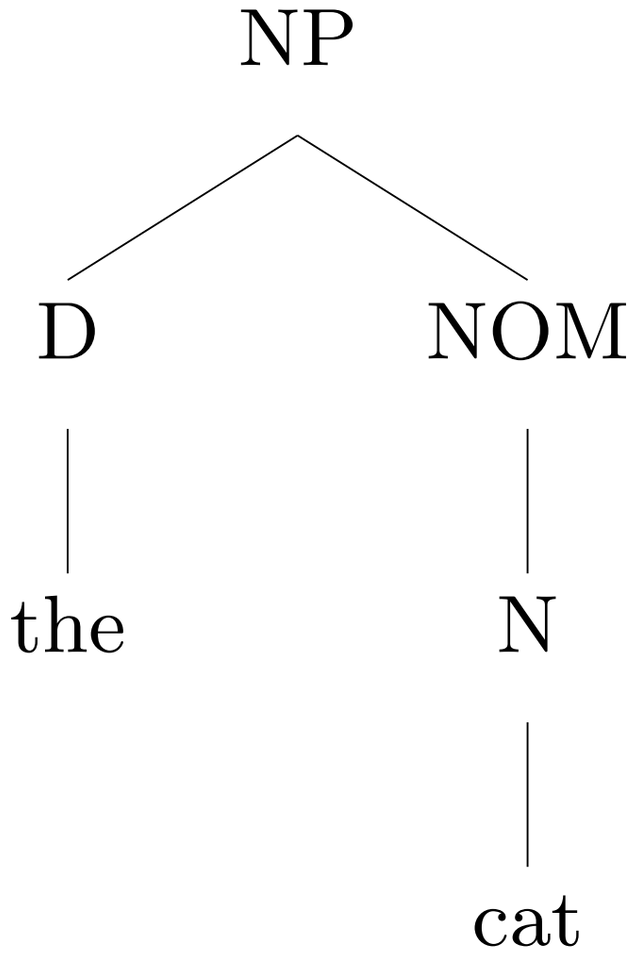
# Which grammar does this tree go with?

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# What's wrong with this?

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

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# What's wrong with this?

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

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# What's wrong with this?

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

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# What's wrong with this?

$$\left\langle \text{grew}, \begin{bmatrix} word \\ \text{HEAD} & \begin{bmatrix} verb \\ \text{AGR} & 3sing \end{bmatrix} \\ \text{VAL} & \begin{bmatrix} \text{SPR} & \langle\ \text{NP}\ \rangle \\ \text{COMPS} & \langle\ \text{AP}\ \rangle \end{bmatrix} \end{bmatrix} \right\rangle$$

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# What's wrong with this?

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

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# What's wrong with this?

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

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# Tags & lists

- What's the difference between these two?

$$\begin{bmatrix} \text{SPR} & \boxed{1}\langle\ \text{NP}\ \rangle \end{bmatrix}$$

$$\begin{bmatrix} \text{SPR} & \langle\ \boxed{1}\text{NP}\ \rangle \end{bmatrix}$$

- When does it matter?

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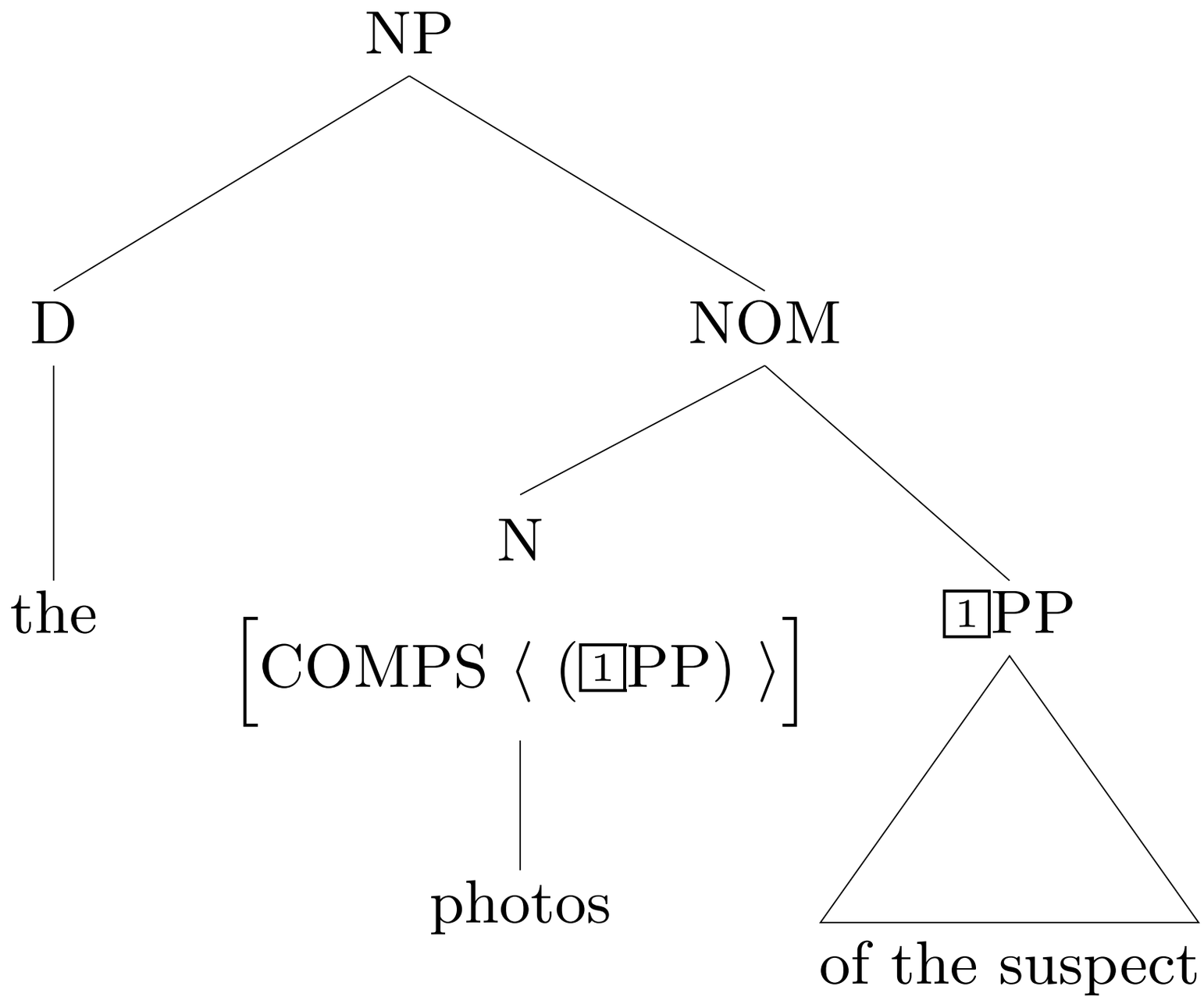
# What's wrong with this tree?

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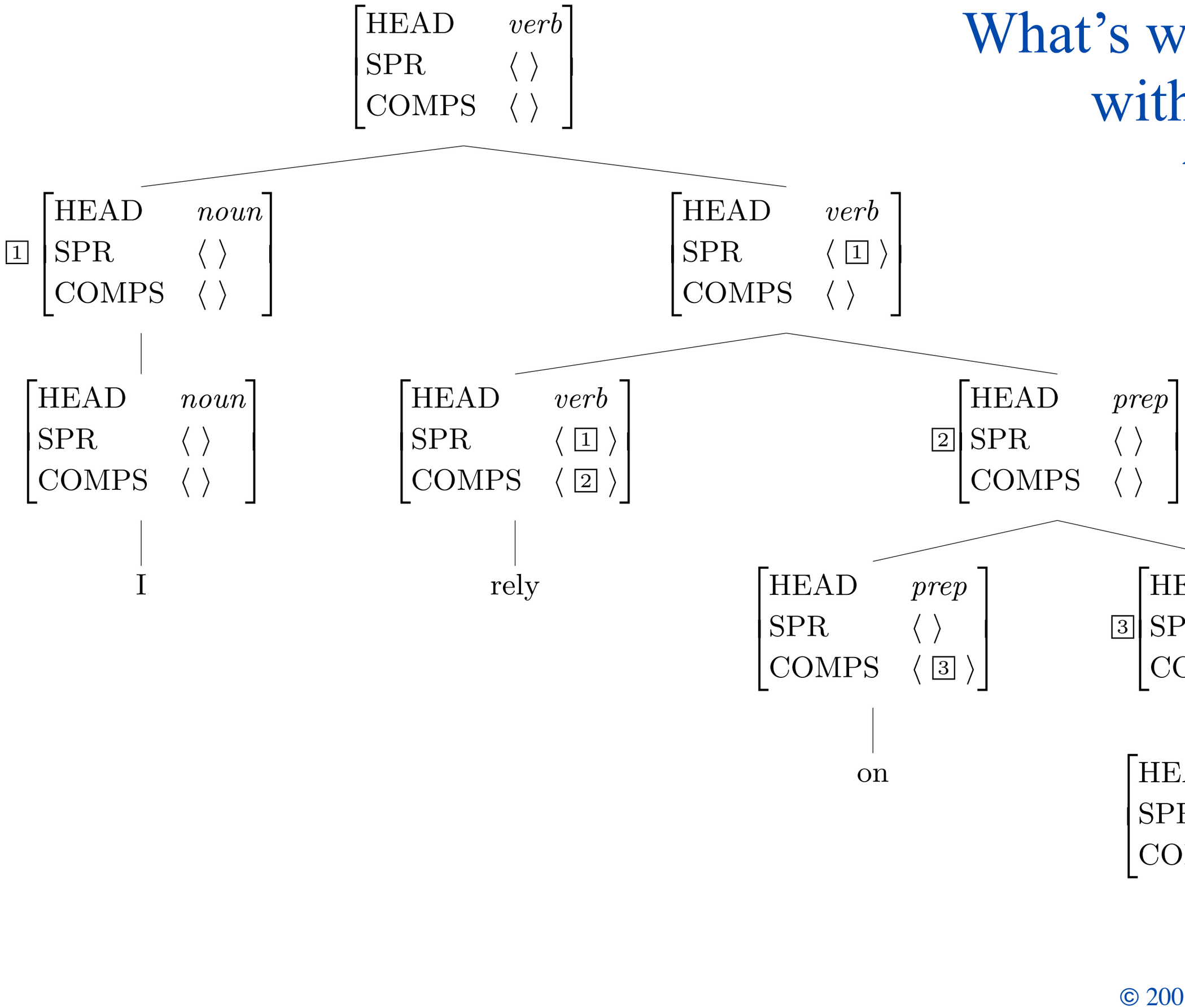


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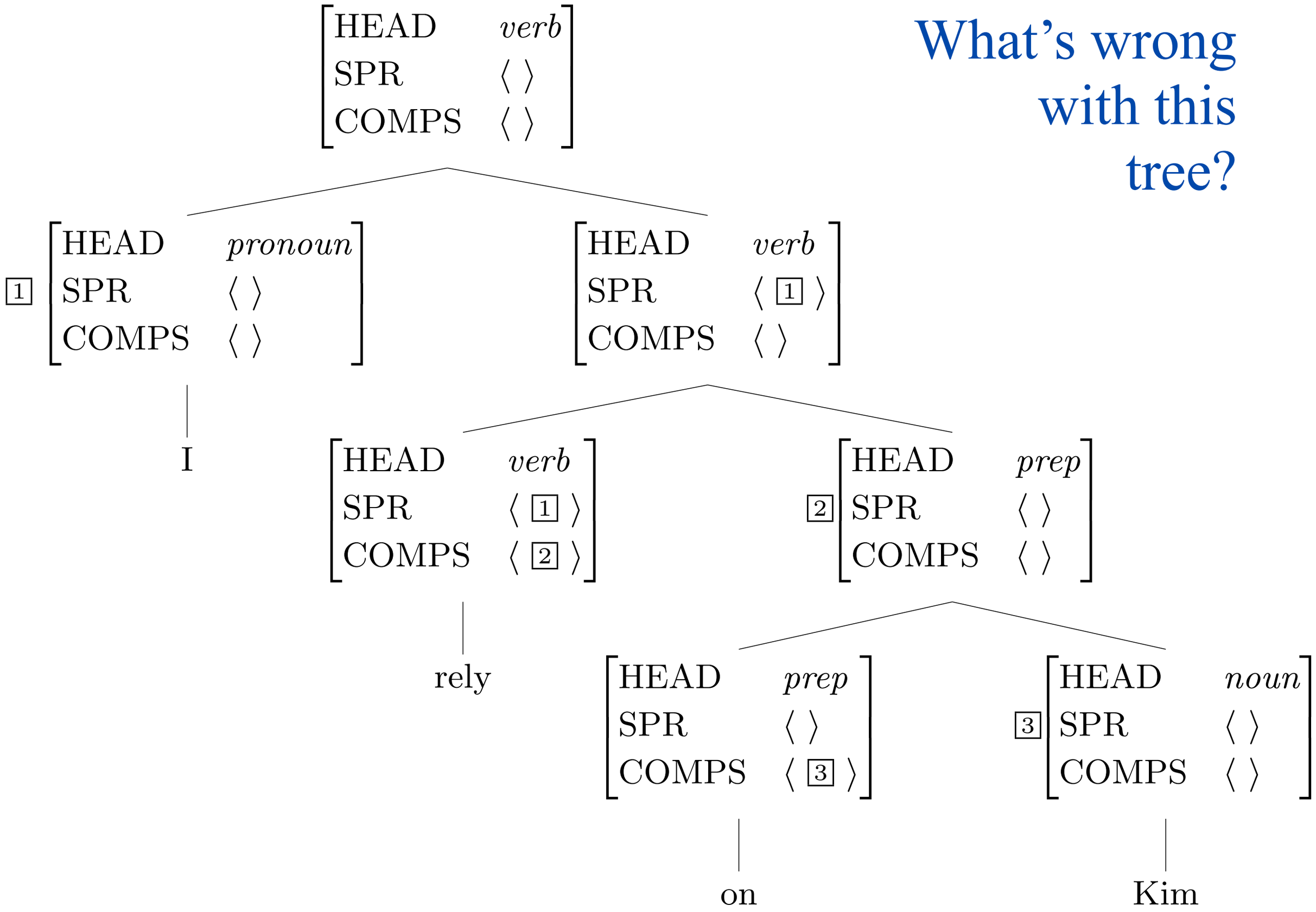


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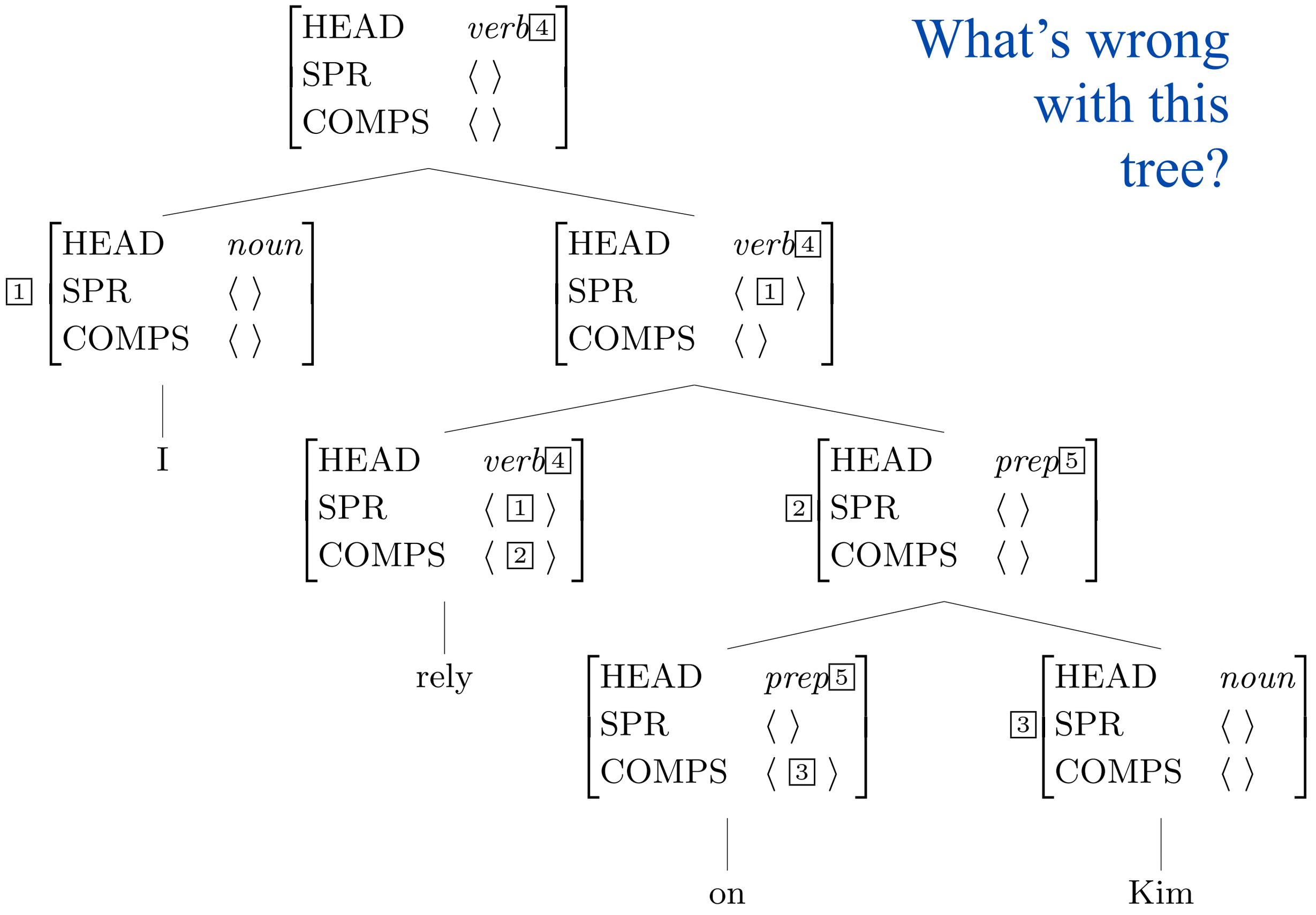


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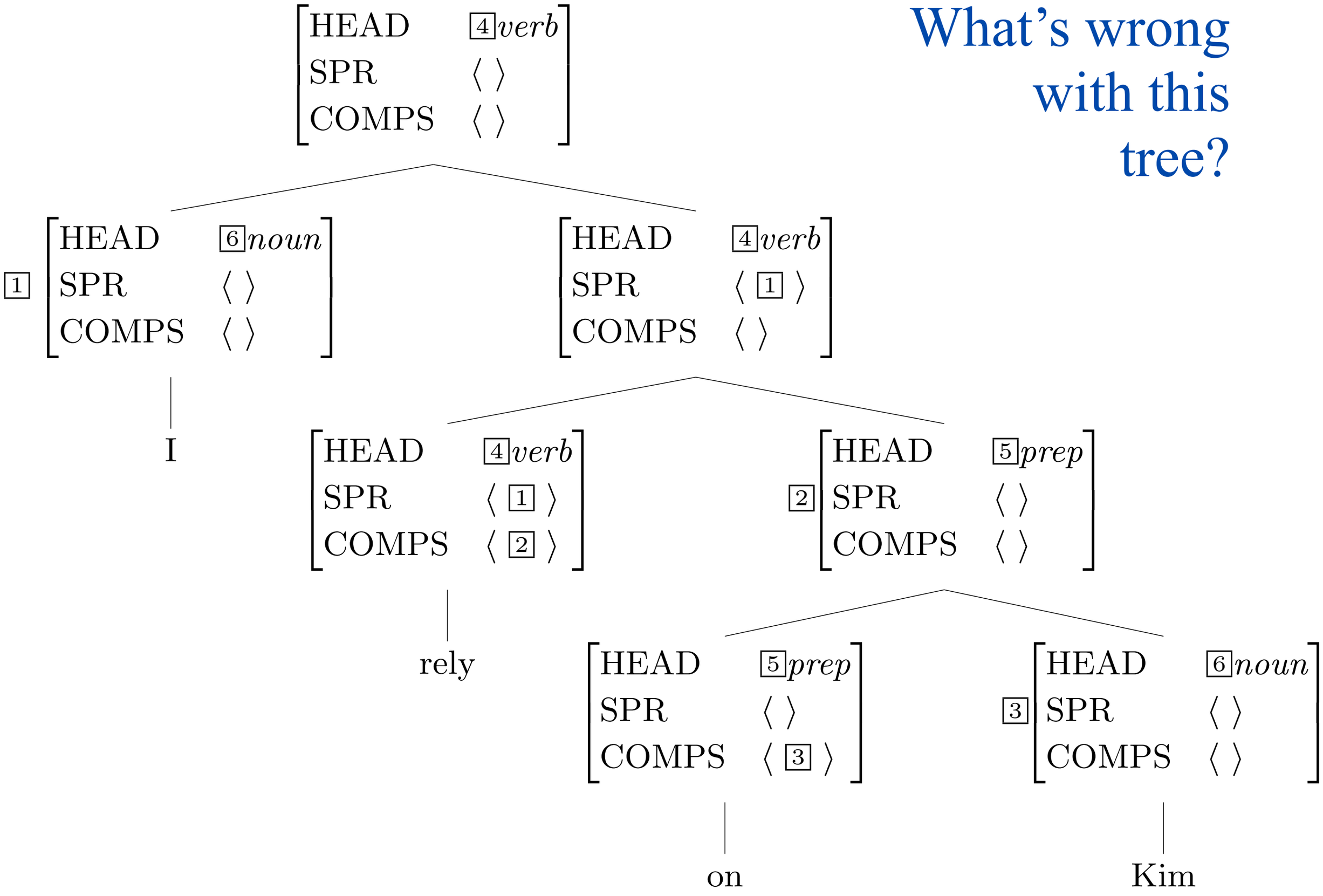


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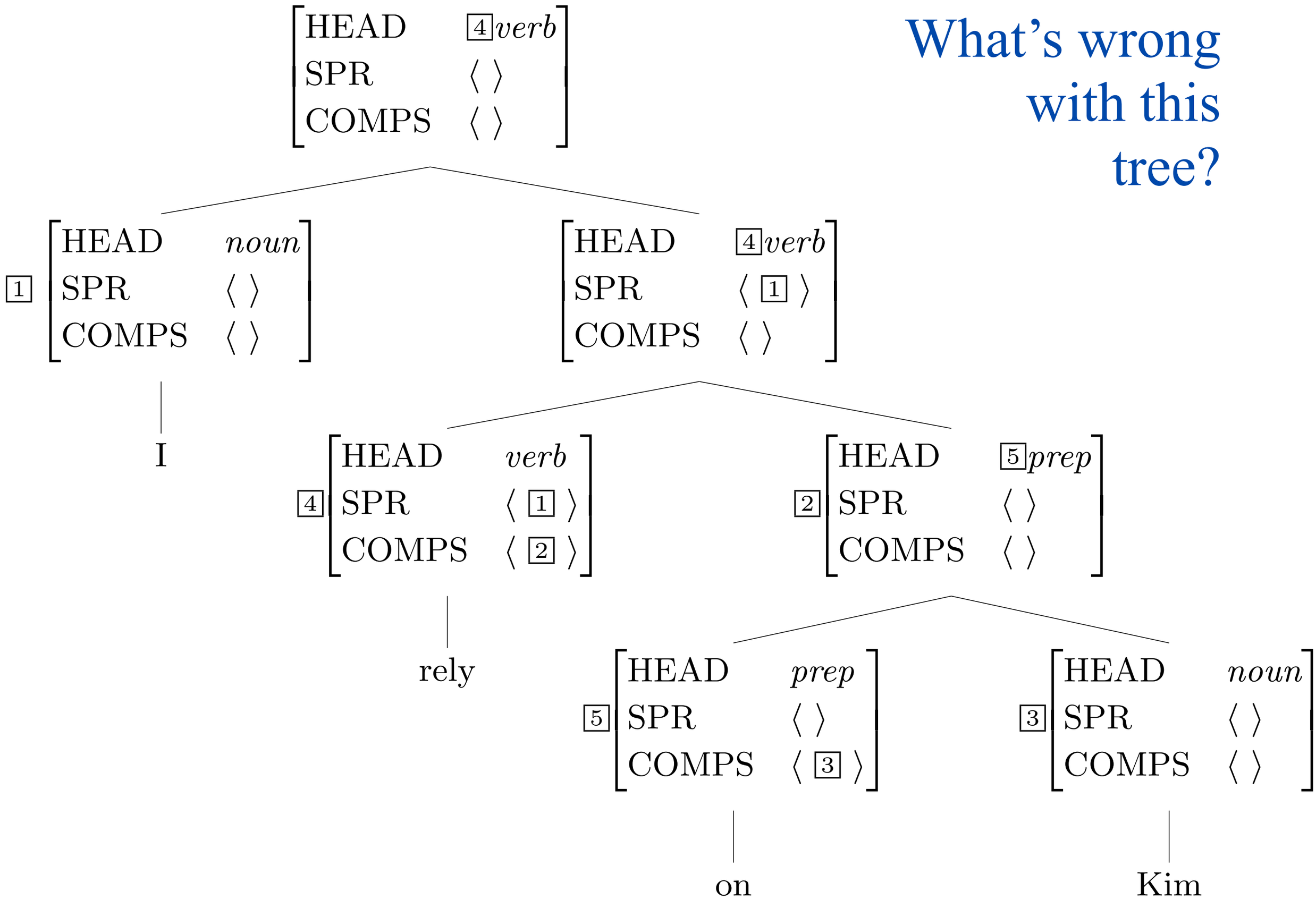


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# What's wrong with this?

$$\left\langle \text{hundred}\ ,\ \begin{bmatrix} \text{SYN} & \begin{bmatrix} \text{HEAD} & \textit{number} \\ \text{VAL} & \begin{bmatrix} \text{SPR} & \left\langle \begin{bmatrix} \text{HEAD} & \textit{number} \\ \text{INDEX} & j \end{bmatrix} \right\rangle \\ \text{COMPS} & \left\langle \begin{bmatrix} \text{HEAD} & \textit{number} \\ \text{INDEX} & k \end{bmatrix} \right\rangle \end{bmatrix} \end{bmatrix} \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & m \\ \text{MODE} & \textit{ref} \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \textit{hund-number} \\ \text{MULTIPLIER} & j \\ \text{ADDEND} & k \\ \text{HUND-VALUE} & m \end{bmatrix} \right\rangle \end{bmatrix} \end{bmatrix} \right\rangle$$

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# And this?

$$\left\langle \text{hundred}\ , \left[\begin{array}{ll} \text{SYN} & \left[\begin{array}{ll} \text{HEAD} & number \\ \text{VAL} & \left[\begin{array}{lll} \text{SPR} & \langle & \left[\text{HEAD}\quad number\right]\rangle \\ \text{COMPS} & \langle & \left[\text{HEAD}\quad number\right]\rangle \end{array}\right] \end{array}\right] \\ \text{SEM} & \left[\begin{array}{ll} \text{INDEX} & i \\ \text{MODE} & ref \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & times \\ \text{RESULT} & k \\ \text{FACTOR1} & l \\ \text{FACTOR2} & m \end{array}\right], \left[\begin{array}{ll} \text{RELN} & constant \\ \text{INST} & m \\ \text{VALUE} & 100 \end{array}\right], \left[\begin{array}{ll} \text{RELN} & plus \\ \text{RESULT} & i \\ \text{TERM1} & j \\ \text{TERM2} & k \end{array}\right] \right\rangle \end{array}\right] \end{array}\right] \right\rangle$$

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# How about this?

$$\left\langle \text{hundred} , \left[ \begin{array}{ll} \text{SYN} & \left[ \begin{array}{ll} \text{HEAD} & \textit{number} \\ \text{VAL} & \left[ \begin{array}{ll} \text{SPR} & \left\langle \left[ \begin{array}{ll} \text{HEAD} & \textit{number} \\ \text{INDEX} & l \end{array} \right] \right\rangle \\ \text{COMPS} & \left\langle \left[ \begin{array}{ll} \text{HEAD} & \textit{number} \\ \text{INDEX} & j \end{array} \right] \right\rangle \end{array} \right] \end{array} \right] \\ \text{SEM} & \left[ \begin{array}{ll} \text{INDEX} & m \\ \text{MODE} & \textit{ref} \\ \text{RESTR} & \left\langle \left[ \begin{array}{ll} \text{RELN} & \textit{times} \\ \text{RESULT} & k \\ \text{FACTOR1} & l \\ \text{FACTOR2} & m \end{array} \right], \left[ \begin{array}{ll} \text{RELN} & \textit{constant} \\ \text{INST} & m \\ \text{VALUE} & \textit{100} \end{array} \right], \left[ \begin{array}{ll} \text{RELN} & \textit{plus} \\ \text{RESULT} & i \\ \text{TERM1} & j \\ \text{TERM2} & k \end{array} \right] \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

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# Better version

$$\left\langle \text{hundred}\ , \left[\begin{array}{ll}
\text{SYN} & \left[\begin{array}{ll}
\text{HEAD} & number \\
\text{VAL} & \left[\begin{array}{ll}
\text{SPR} & \left\langle \left[\begin{array}{ll} \text{HEAD} & number \\ \text{INDEX} & l \end{array}\right] \right\rangle \\
\text{COMPS} & \left\langle \left[\begin{array}{ll} \text{HEAD} & number \\ \text{INDEX} & j \end{array}\right] \right\rangle
\end{array}\right]
\end{array}\right] \\
\text{SEM} & \left[\begin{array}{ll}
\text{INDEX} & i \\
\text{MODE} & ref \\
\text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & times \\ \text{RESULT} & k \\ \text{FACTOR1} & l \\ \text{FACTOR2} & m \end{array}\right], \left[\begin{array}{ll} \text{RELN} & constant \\ \text{INST} & m \\ \text{VALUE} & 100 \end{array}\right], \left[\begin{array}{ll} \text{RELN} & plus \\ \text{RESULT} & i \\ \text{TERM1} & j \\ \text{TERM2} & k \end{array}\right] \right\rangle
\end{array}\right]
\end{array}\right] \right\rangle$$

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# 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?

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# Overview

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

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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.'

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# 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.

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