Ling 566
Oct 18, 2012

Binding Theory, Imperatives

Overview

- Review of Ch 1 informal binding theory

- What we already have that's useful

- What we add in Ch 7 (ARG-ST, ARP)

- Formalized Binding Theory

- Binding and PPs

- Examples

- Imperatives

- Reading questions

Some Examples from Chapter 1

- *She likes herself*

- **She_i likes her_i.*

- *We gave presents to ourselves.*

- **We gave presents to us.*

- *We gave ourselves presents*

- **We gave us presents.*

- **Leslie told us about us.*

- *Leslie told us about ourselves.*

- **Leslie told ourselves about us.*

- **Leslie told ourselves about ourselves.*

The Chapter 1 Binding Theory Reformulated

- Old Formulation:
  - A reflexive pronoun must be an argument of a verb that has another preceding argument with the same reference.
  - A nonreflexive pronoun cannot appear as an argument of a verb that has a preceding coreferential argument.
- New Formulation:
  - Principle A (version I): A reflexive pronoun must be bound by a preceding argument of the same verb.
  - Principle B (version I): A nonreflexive pronoun may not be bound by a preceding argument of the same verb.

Some Challenges

- Replace notions of "bound" and "preceding argument of the same verb" by notions definable in our theory.

- Generalize the Binding Principles to get better coverage.

A Question

- What would be a natural way to formalize the notion of "bound" in our theory?

- Answer: Two expressions are bound if they have the same INDEX value ("are coindexed").

Two More Questions

- Where in our theory do we have information about a verb's arguments?

- Answer:　　In the verb's VALENCE features.

- What determines the linear ordering of a verb's arguments in a sentence?

- Answer:　　The interaction of the grammar rules and the ordering of elements in the COMPS list.

The Argument Realization Principle

- For Binding Theory, we need a single list with both subject and complements.

- We introduce a feature ARG-ST, with the following property (to be revised later):

$$\begin{bmatrix} \text{SYN} & \begin{bmatrix} \text{VAL} & \begin{bmatrix} \text{SPR} & \boxed{A} \\ \text{COMPS} & \boxed{B} \end{bmatrix} \end{bmatrix} \\ \text{ARG-ST} & \boxed{A} \oplus \boxed{B} \end{bmatrix}$$

- This is a constraint on the type word

Notes on ARG-ST

- It's neither in SYN nor SEM.

- It only appears on lexical heads (not appropriate for type *phrase*)

- No principle stipulates identity between ARG-STs.

Two Bits of Technical Machinery

- Definition: If *A* precedes *B* on some ARG-ST list, then *A* **outranks** *B*.

- Elements that must be anaphoric -- that is, that require an antecedent -- are lexically marked **[MODE ana]**. These include reflexive pronouns and reciprocals.

The Binding Principles

- <u>Principle A</u>:   A [MODE ana] element must be outranked by a coindexed element.

- <u>Principle B</u>: A [MODE ref] element must not be outranked by a coindexed element.

Pronoun-Antecedent Agreement

- The Binding Principles by themselves don't block:
  * *I amused yourself.*
  * *He amused themselves.*
  * *She amused himself.*
- Coindexed NPs refer to the same entity, and AGR features generally correlate with properties of the referent.
- The Anaphoric Agreement Principle (AAP): Coindexed NPs agree.

Binding in PPs

- What do the Binding Principles predict about the following?

  I brought a book with me.

  *I brought a book with myself.

  *I mailed a book to me.

  I mailed a book to myself.

Two Types of Prepositions: the Intuition

- "Argument-marking": Function like case-markers in other languages, indicating the roles of NP referents in the situation denoted by the verb.

- "Predicative": Introduce their own predication.

Two Types of Prepositions: a Formalization

- Argument-marking prepositions share their objects' MODE and INDEX values.
  - This is done with tagging in the lexical entries of such prepositions.
  - These features are also shared with the PP node, by the Semantic Inheritance Principle.
- Predicative prepositions introduce their own MODE and INDEX values.

Redefining Rank

- If there is an ARG-ST list on which *A* precedes *B*, then *A* outranks *B*.

- If a node is coindexed with its daughter, they are of equal rank -- that is, they outrank the same nodes and are outranked by the same nodes.

An Example

S

$\boxed{1}\,\mathrm{NP}_i$

VP
$[\mathrm{SPR}\ \langle\ \boxed{1}\ \rangle\ ]$

I

V

$$\begin{bmatrix}\mathrm{SPR} & \langle\ \boxed{1}\ \rangle \\ \mathrm{COMPS} & \langle\ \boxed{2}\ ,\ \boxed{3}\ \rangle \\ \mathrm{ARG\text{-}ST} & \langle\ \boxed{1}\ ,\ \boxed{2},\ \boxed{3}\ \rangle\end{bmatrix}$$

sent

$\boxed{2}\mathrm{NP}_j$

D

N

$\boxed{3}\mathrm{PP}_i$

P_i

NP_i

a

letter

to
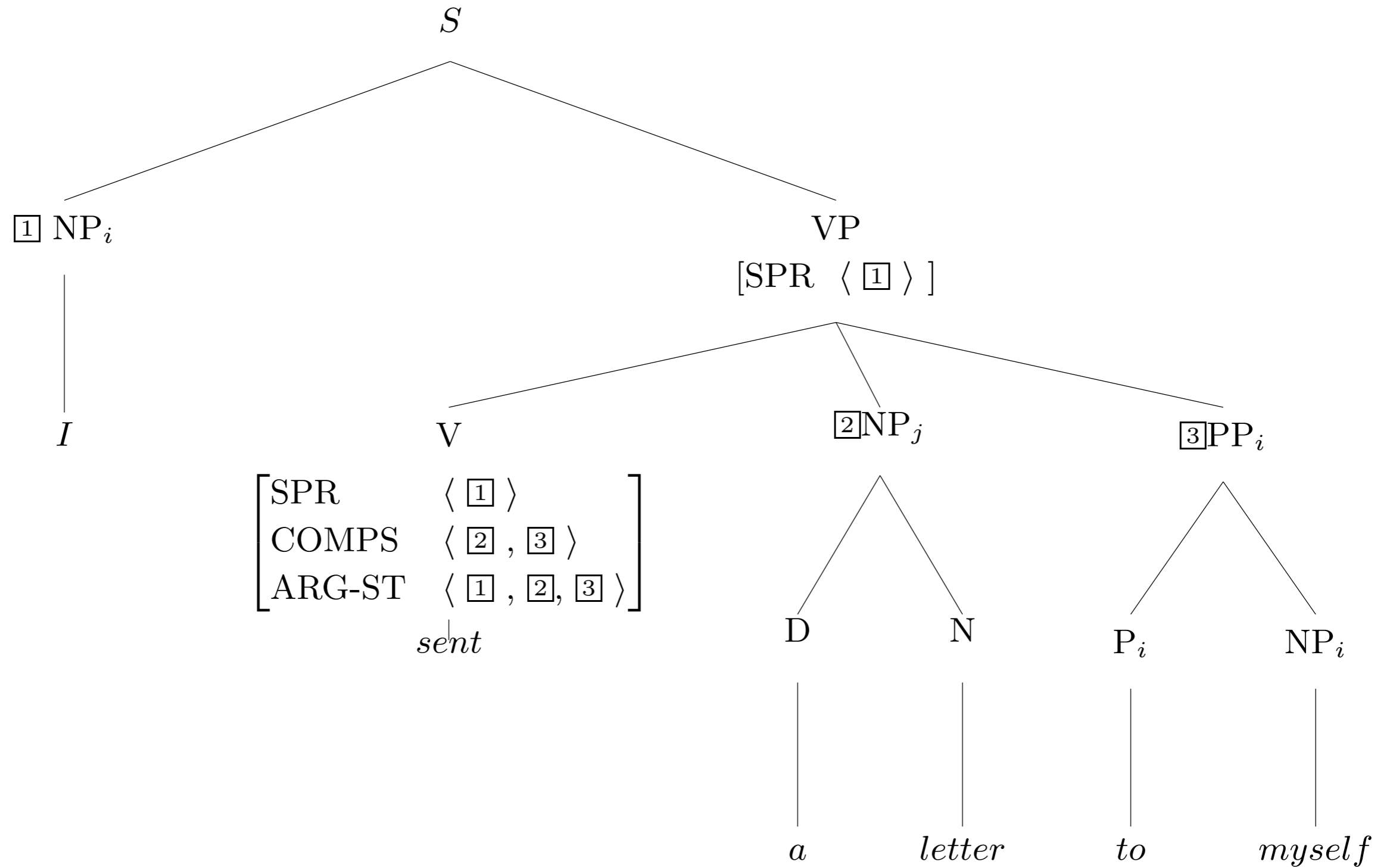
myself

The ARG-ST

$$\left[\text{ARG-ST} \left\langle \begin{array}{c} \text{NP}_i \\ \left[\text{MODE ref}\right] \end{array}, \begin{array}{c} \text{NP}_j \\ \left[\text{MODE ref}\right] \end{array}, \begin{array}{c} \text{PP}_i \\ \left[\text{MODE ana}\right] \end{array} \right\rangle \right]$$

- The PP is outranked by the first NP. (Why?)
- *myself* has the same rank as the PP. (Why?)
- So, *myself* is outranked by the first NP. (Why?)
- Therefore, Principle A is satisfied.

Replacing *myself* with *me*

$* S$

$\boxed{1}\,\text{NP}_i$

VP
$[\text{SPR} \ \langle \ \boxed{1} \ \rangle \ ]$

I

V

$$\begin{bmatrix} \text{SPR} & \langle \ \boxed{1} \ \rangle \\ \text{COMPS} & \langle \ \boxed{2} \ , \ \boxed{3} \ \rangle \\ \text{ARG-ST} & \langle \ \boxed{1} \ , \ \boxed{2}, \ \boxed{3} \ \rangle \end{bmatrix}$$

sent

$\boxed{2}\text{NP}_j$

D

N

a

letter

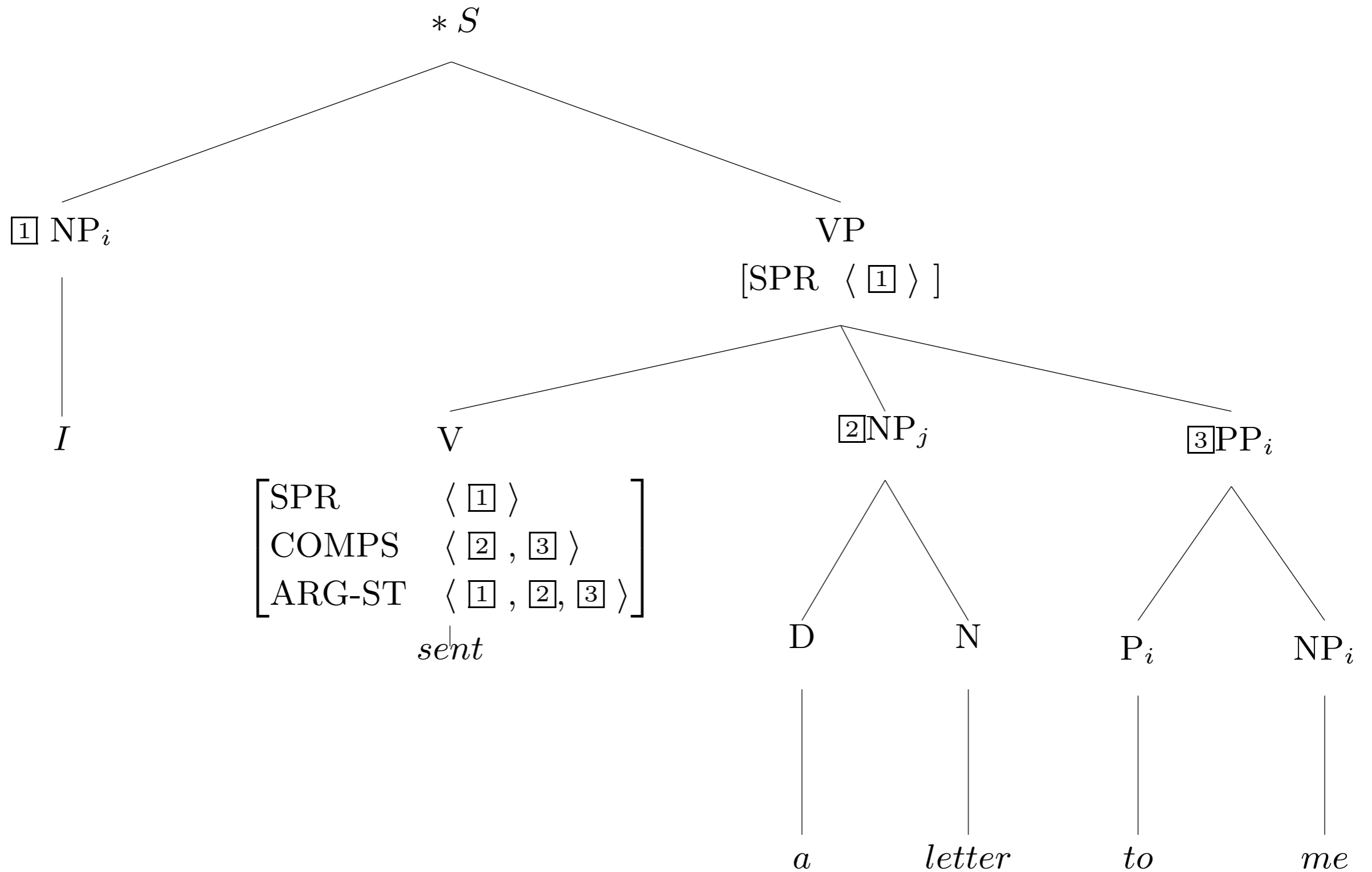$\boxed{3}\text{PP}_i$

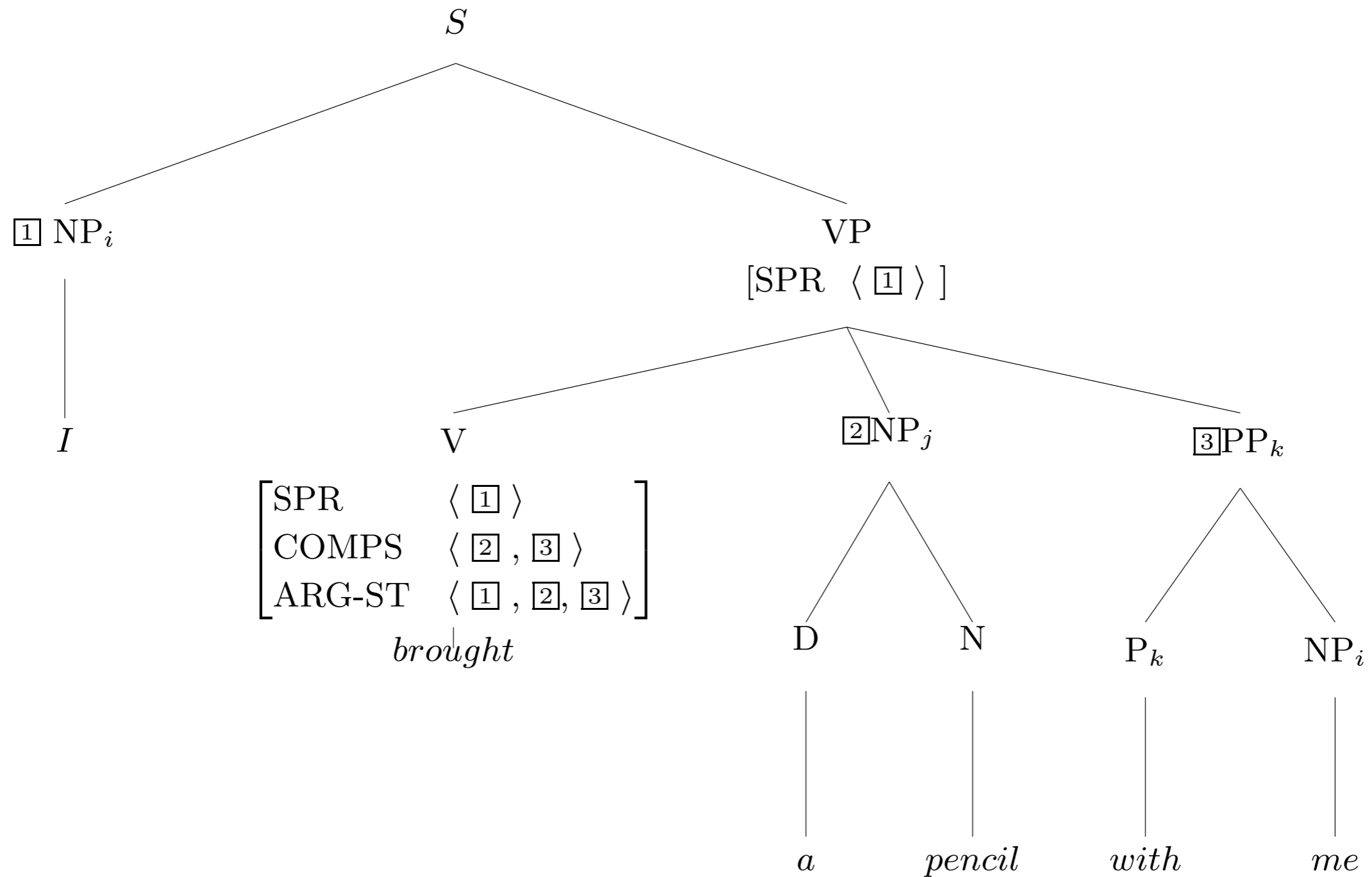P_i

NP_i

to

me

The ARG-ST

$$\left[\text{ARG-ST} \left\langle \begin{array}{c} \text{NP}_i \\ \left[\text{MODE ref} \right] \end{array}, \begin{array}{c} \text{NP}_j \\ \left[\text{MODE ref} \right] \end{array}, \begin{array}{c} \text{PP}_i \\ \left[\text{MODE ref} \right] \end{array} \right\rangle \right]$$
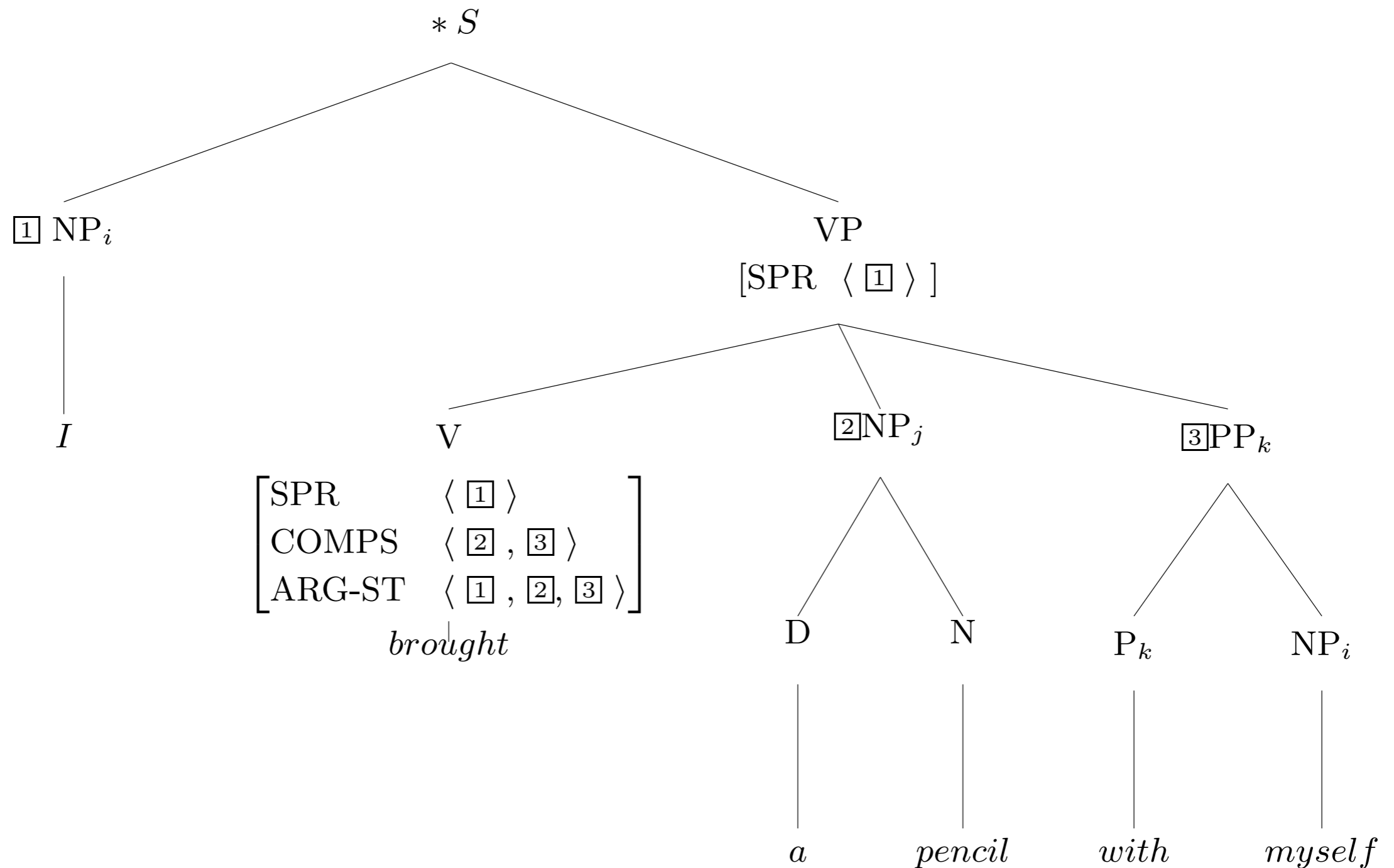
- The PP is outranked by the first NP.
- *me* has the same rank as the PP.
- So, *me* is outranked by the first NP.
- Therefore, Principle B is violated.

Another Example

$$S$$

Tree structure:

- S
  - $\boxed{1}\,\text{NP}_i$
    - I
  - VP $[\text{SPR}\ \langle\ \boxed{1}\ \rangle]$
    - V
      $$\begin{bmatrix} \text{SPR} & \langle\ \boxed{1}\ \rangle \\ \text{COMPS} & \langle\ \boxed{2}\ ,\ \boxed{3}\ \rangle \\ \text{ARG-ST} & \langle\ \boxed{1}\ ,\ \boxed{2},\ \boxed{3}\ \rangle \end{bmatrix}$$
      brought
    - $\boxed{2}\text{NP}_j$
      - D — *a*
      - N — *pencil*
    - $\boxed{3}\text{PP}_k$
      - P_k — *with*
      - NP_i — *me*

- Here *I* does not outrank *me*, so Principle B is satisfied.

Replacing *me* with *myself*

∗ S

① NP$_i$

VP
[SPR ⟨ ① ⟩]

I

V

$\begin{bmatrix} \text{SPR} & \langle\ ①\ \rangle \\ \text{COMPS} & \langle\ ②\ ,\ ③\ \rangle \\ \text{ARG-ST} & \langle\ ①\ ,\ ②,\ ③\ \rangle \end{bmatrix}$

brought

②NP$_j$

D

N

a

pencil

③PP$_k$

P$_k$

NP$_i$

with

myself

- Here *I* does not outrank *myself*, so Principle A is violated.

Imperatives

- Have the internal structure of a VP

  Leave!

  Read a book!

  Give the dog a treat!

  Put the ice cream in the freezer!
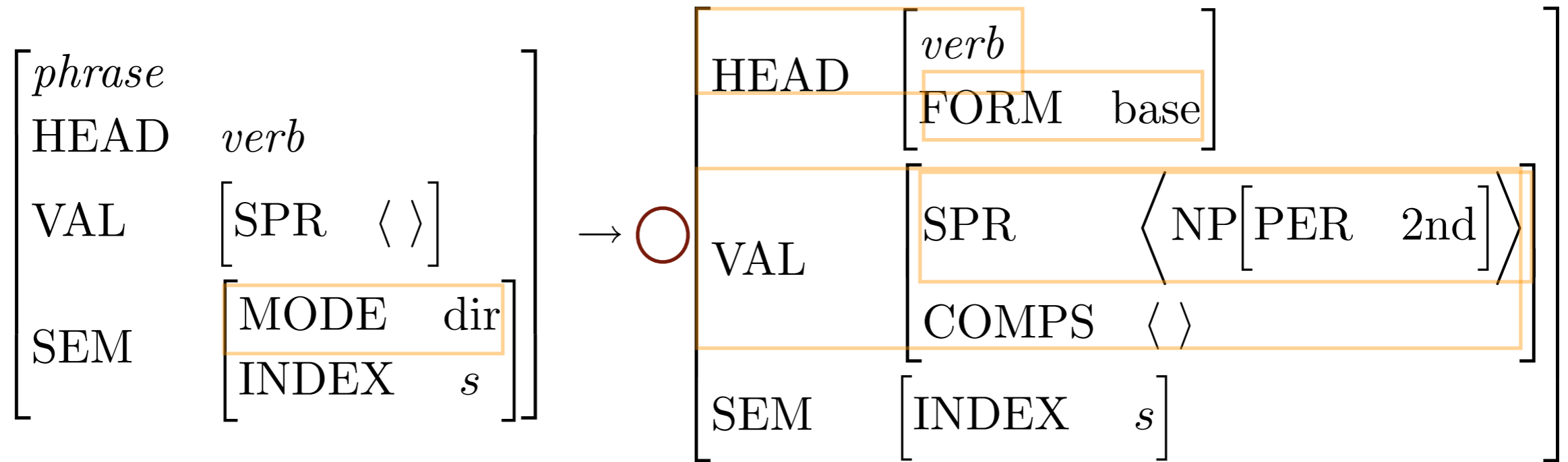
- Function as **directives**

- Have the verb in base form

  Be careful! not **Are careful!*

- Allow 2nd person reflexives, and no others

  Defend yourself! vs. **Defend myself/himself!*

The Imperative Rule

$$
\begin{bmatrix}
phrase \\
\text{HEAD} \quad verb \\
\text{VAL} \quad \begin{bmatrix} \text{SPR} \quad \langle\,\rangle \end{bmatrix} \\
\text{SEM} \quad \begin{bmatrix} \text{MODE} \quad dir \\ \text{INDEX} \quad s \end{bmatrix}
\end{bmatrix}
\rightarrow \bigcirc
\begin{bmatrix}
\text{HEAD} \quad \begin{bmatrix} verb \\ \text{FORM} \quad base \end{bmatrix} \\
\text{VAL} \quad \begin{bmatrix} \text{SPR} \quad \langle \text{NP}\begin{bmatrix}\text{PER} \quad 2nd\end{bmatrix}\rangle \\ \text{COMPS} \quad \langle\,\rangle \end{bmatrix} \\
\text{SEM} \quad \begin{bmatrix} \text{INDEX} \quad s \end{bmatrix}
\end{bmatrix}
$$

- Internal structure of a VP
- Directive function
- Base form
- Only 2nd person reflexives

- Note that this is not a headed rule. Why?
- Answer: It would violate the HFP and the SIP.

Imperative example
(Combining constraints again)
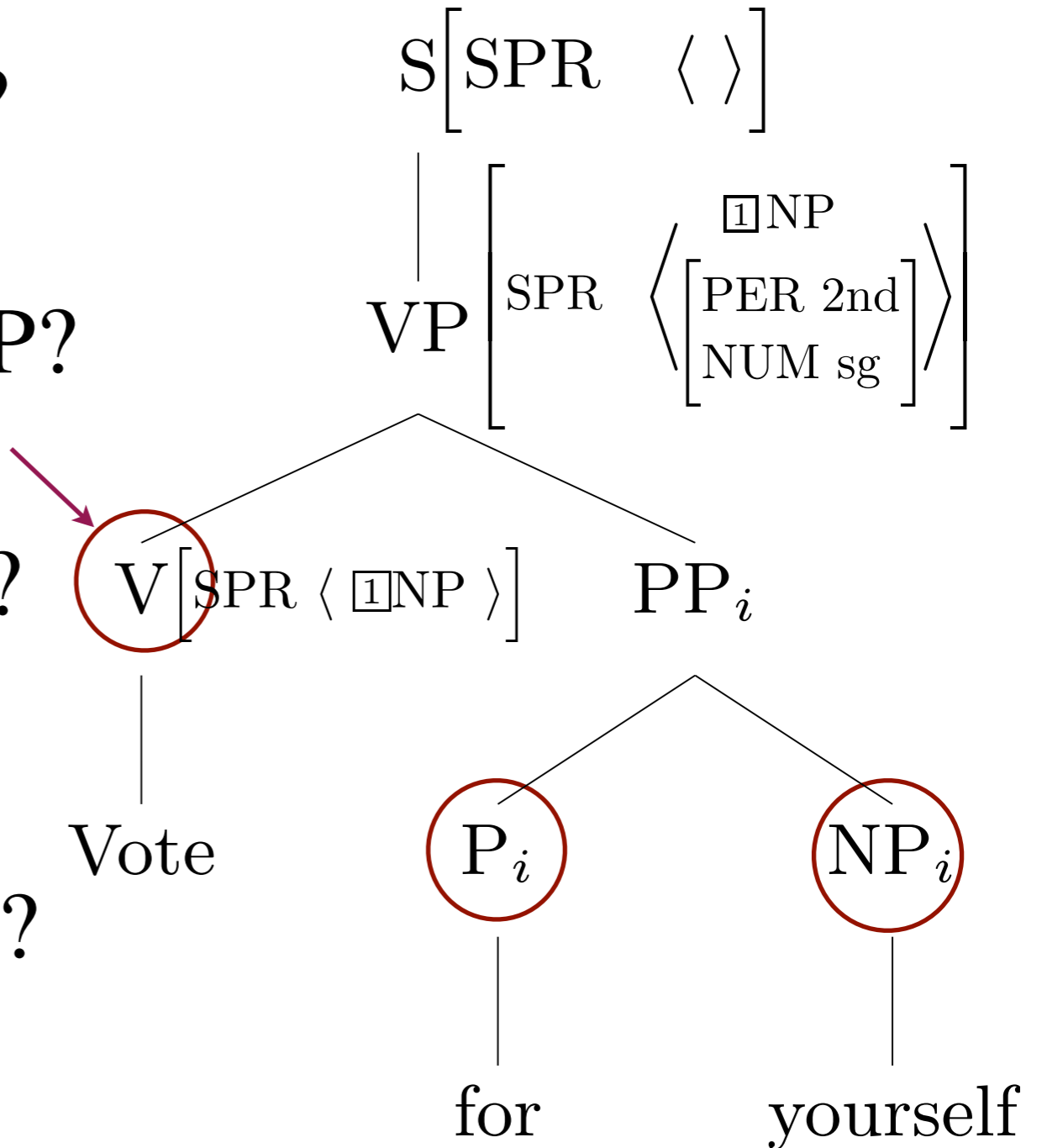
What's the SPR value on S?

Why?

What's the SPR value on VP?
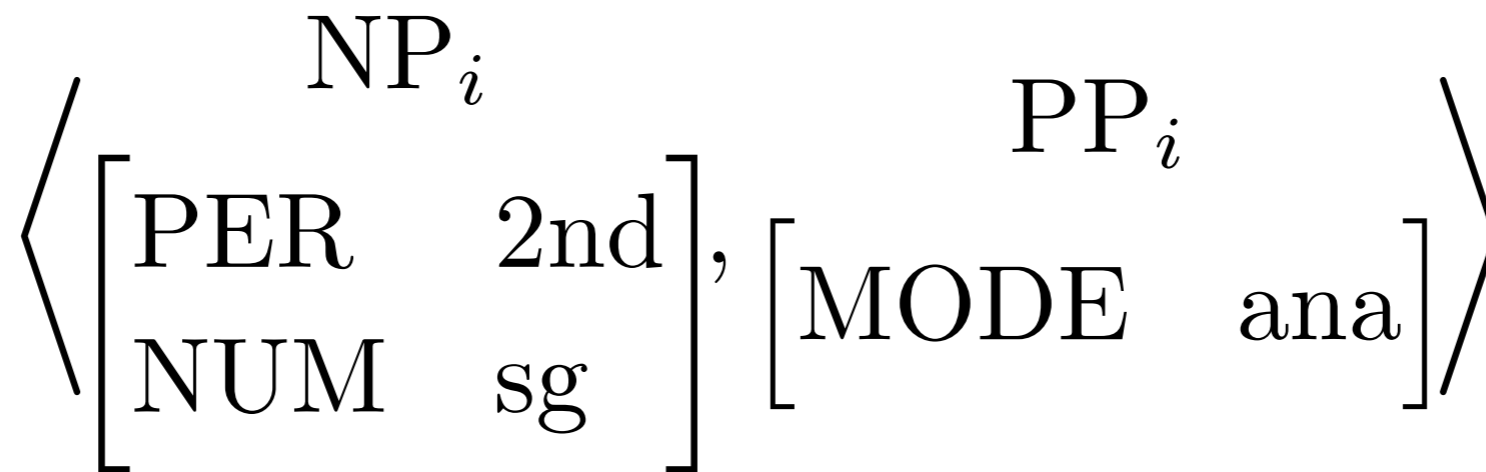
Why?

What's the SPR value on V?

Why?

Which nodes have ARG-ST?

Which ARG-ST matters for the licensing of yourself?

$$S\left[\text{SPR} \quad \langle\ \rangle\right]$$

$$VP\left[\text{SPR} \quad \left\langle\begin{bmatrix}\boxed{1}NP \\ \begin{bmatrix}\text{PER 2nd} \\ \text{NUM sg}\end{bmatrix}\end{bmatrix}\right\rangle\right]$$

$$V\left[\text{SPR}\ \langle\ \boxed{1}NP\ \rangle\right] \qquad PP_i$$

Vote

P_i NP_i

for   yourself

ARG-ST on *vote*

$$\left\langle \begin{array}{c} \text{NP}_i \\ \begin{bmatrix} \text{PER} & \text{2nd} \\ \text{NUM} & \text{sg} \end{bmatrix} \end{array}, \begin{array}{c} \text{PP}_i \\ \begin{bmatrix} \text{MODE} & \text{ana} \end{bmatrix} \end{array} \right\rangle$$

- Is Principle A satisfied?

- How?

- Is Principle B satisfied?

- How?

Day 1 Revisited

- Recall

  F---- yourself!   *F---- you!*
  Go f--- yourself!   **Go f---- you!*

- *F--- NP!* has two analyses
  - As an imperative
  - As a truly subjectless fixed expression.

- *Go f---- NP!* can only be analyzed as an imperative.

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Reading Questions

- Why do we need ARG-ST separate from VAL (or SPR + COMPS)?

- Why do we need ARG-ST separate from RESTR?

- Why isn't ARG-ST inside VAL?

Reading Questions

- How do you decide what coindexation to evaluate?

- What do we mean by: "Indices are like variables; thus Binding Theory constrains variable identity, not the assignments of values to variables"?

- What kind of preposition doesn't copy up MODE & INDEX of its complement?

- How do we tell which kind of preposition a given one is?

Reading Questions

- Does the AAP apply across multiple sentences?

- How about coordinated NPs: *Persephone and I like ourselves*.

- If modifiers aren't on ARG-ST, how do we handle: *I cleaned the kitchen by myself*.

Reading Questions

- Why does the ARG-ST feature apply at the word level when it only comes into play for verbs? Couldn't it be placed at the verb level?

- Why would we need ARG-ST on nouns?

- In a fully specified tree, will all nodes of type word have ARG-ST?

- What does "the ARP holds only of words" mean? Aren't NP and PP on ARG-ST (sometimes) phrases?

Reading Questions

- The imperative rule sanctions phrases with no head. Is that allowed?

- Don't we want imperatives to be headed?

- Why aren't imperatives licensed by our existing grammar rules?

Reading Questions

- How do we handle imperatives with subjects:

  - *You get out of here!*

  - *You be careful.*

  - *Damn kids get off my lawn!*

  - *Everybody rise.*

Reading Questions

- How do we handle:

(a) *Vote for us!*

(b) **Vote for ourselves!*

(c) *We would like to hear from our important customers such as you.*

(d) *We would like to hear from our important customers such as yourself.*