

Ling 566

Oct 26, 2021

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.*

Some Terminology

- Binding: The association between a pronoun and an antecedent.
- Anaphoric: A term to describe an element (e.g. a pronoun) that derives its interpretation from some other expression in the discourse.
- Antecedent: The expression an anaphoric expression derives its interpretation from.
- Anaphora: The relationship between an anaphoric expression and its antecedent.

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 (would like?) a single list with both subject and complements.
- We introduce a feature ARG-ST, with the following property (to be revised later):

$$\left[\begin{array}{l} \text{SYN} \\ \text{ARG-ST} \end{array} \left[\begin{array}{l} \text{VAL} \\ \boxed{A} \oplus \boxed{B} \end{array} \left[\begin{array}{l} \text{SPR} \\ \text{COMPS} \end{array} \left[\begin{array}{l} \boxed{A} \\ \boxed{B} \end{array} \right] \right] \right] \right]$$

- 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.

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W How do you feel about ARG-ST?

Seems useful
and/or intuitive

Seems redundant
to SPR/COMPS

I'm reserving
judgment

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

- Principle A: A [MODE ana] element must be outranked by a coindexed element.
- Principle B: 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.

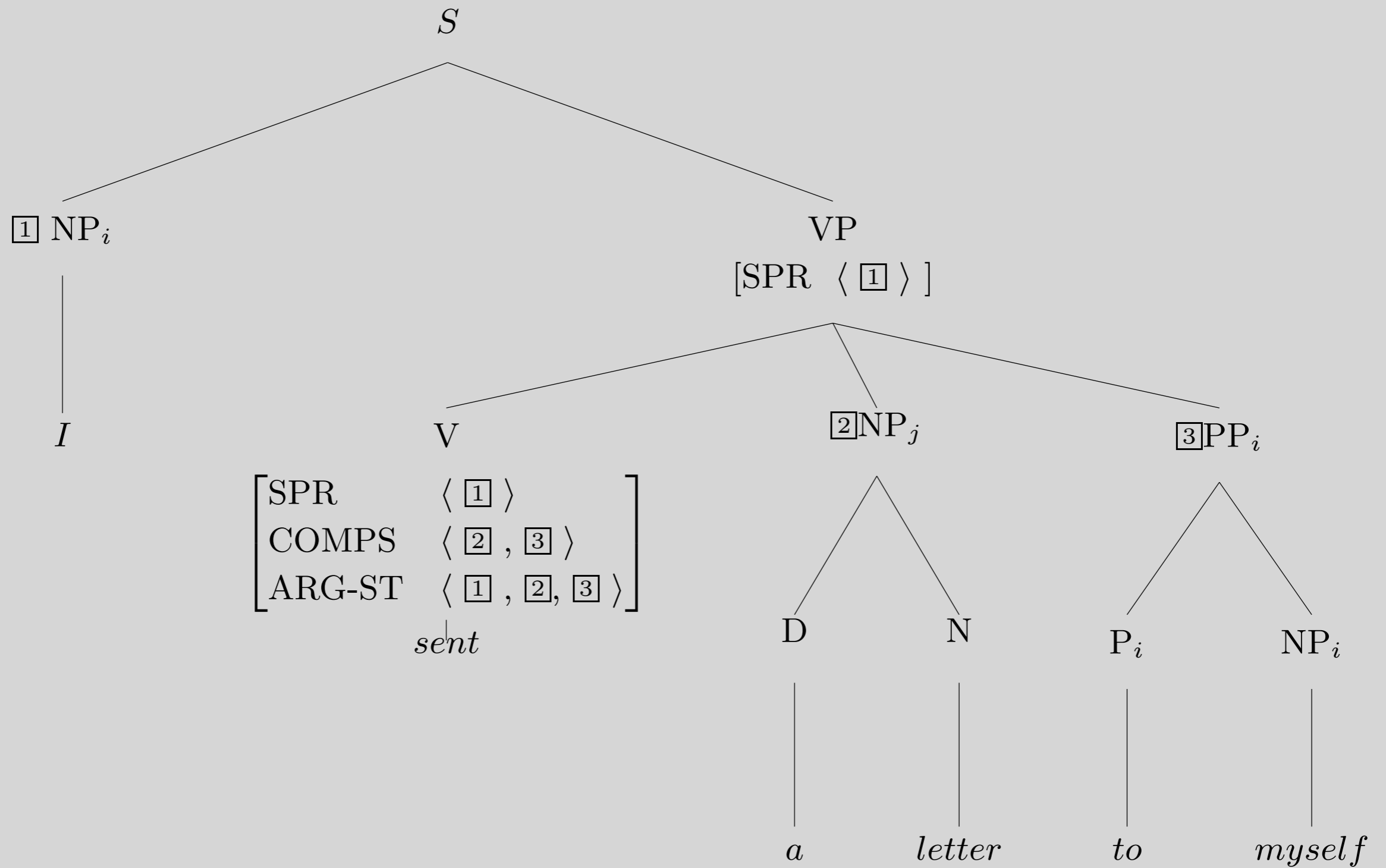
Two Types of Prepositions: a Formalization

- 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.
- Predicational 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

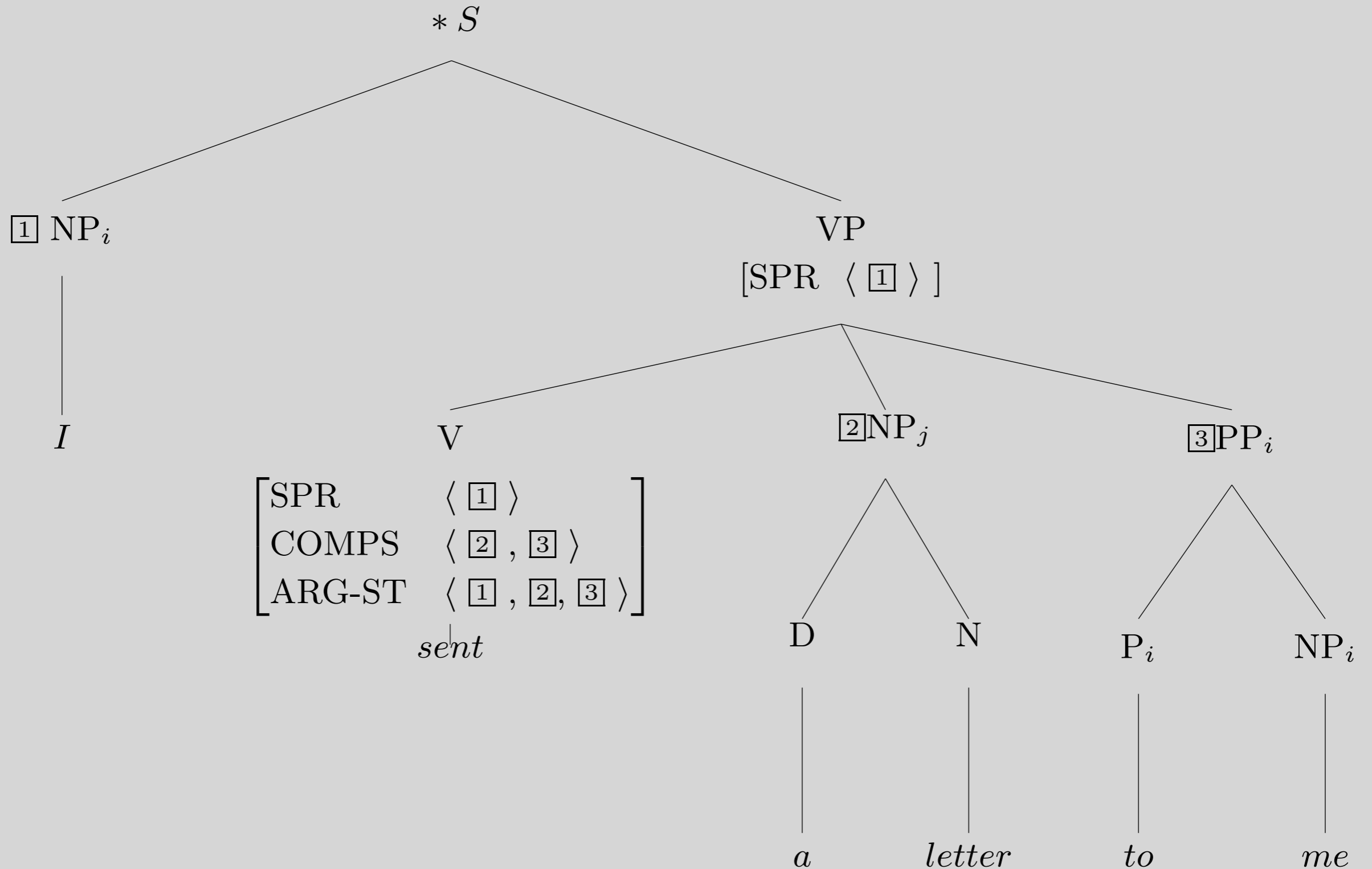


The ARG-ST

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

- 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*

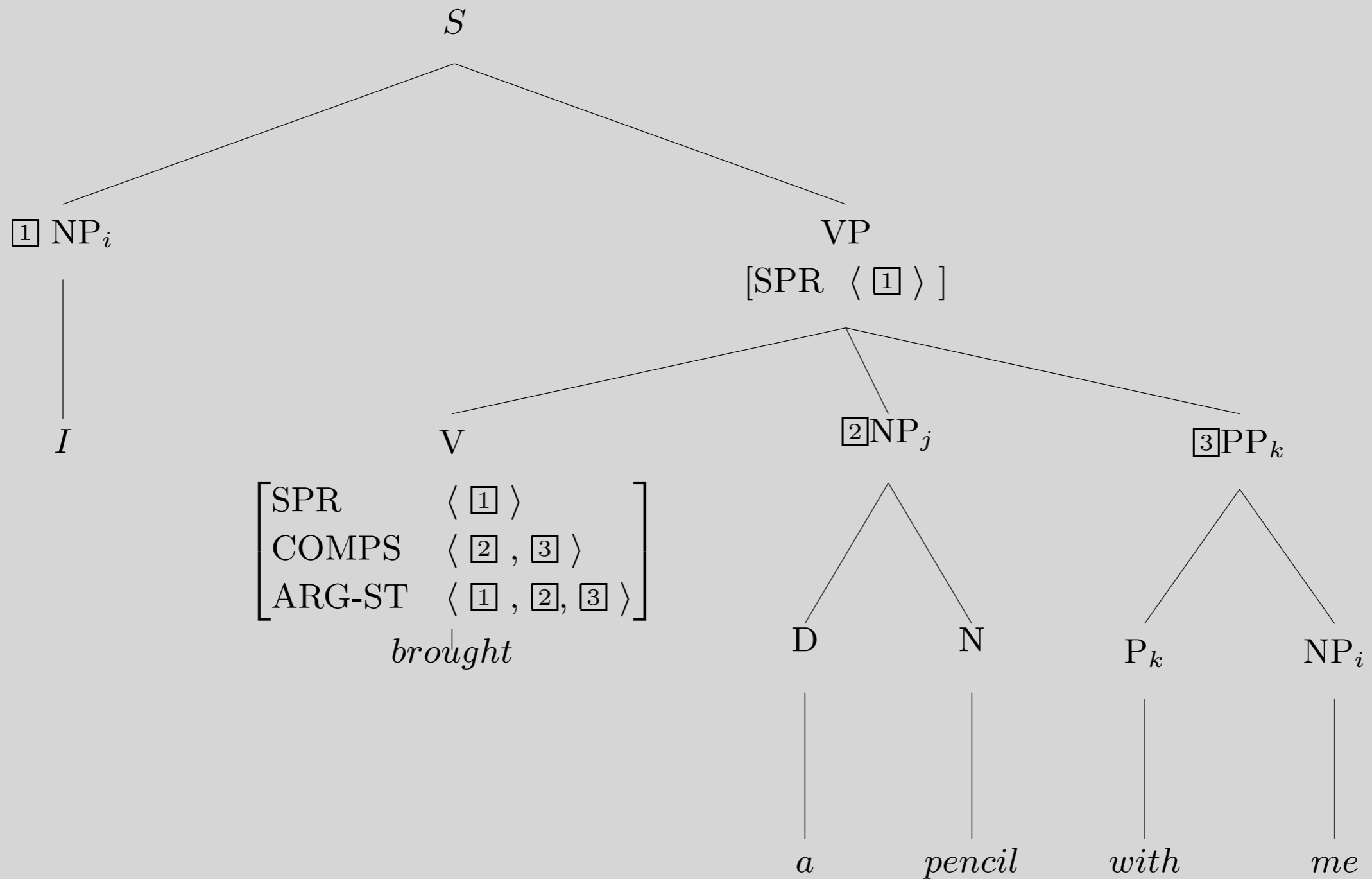


The ARG-ST

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

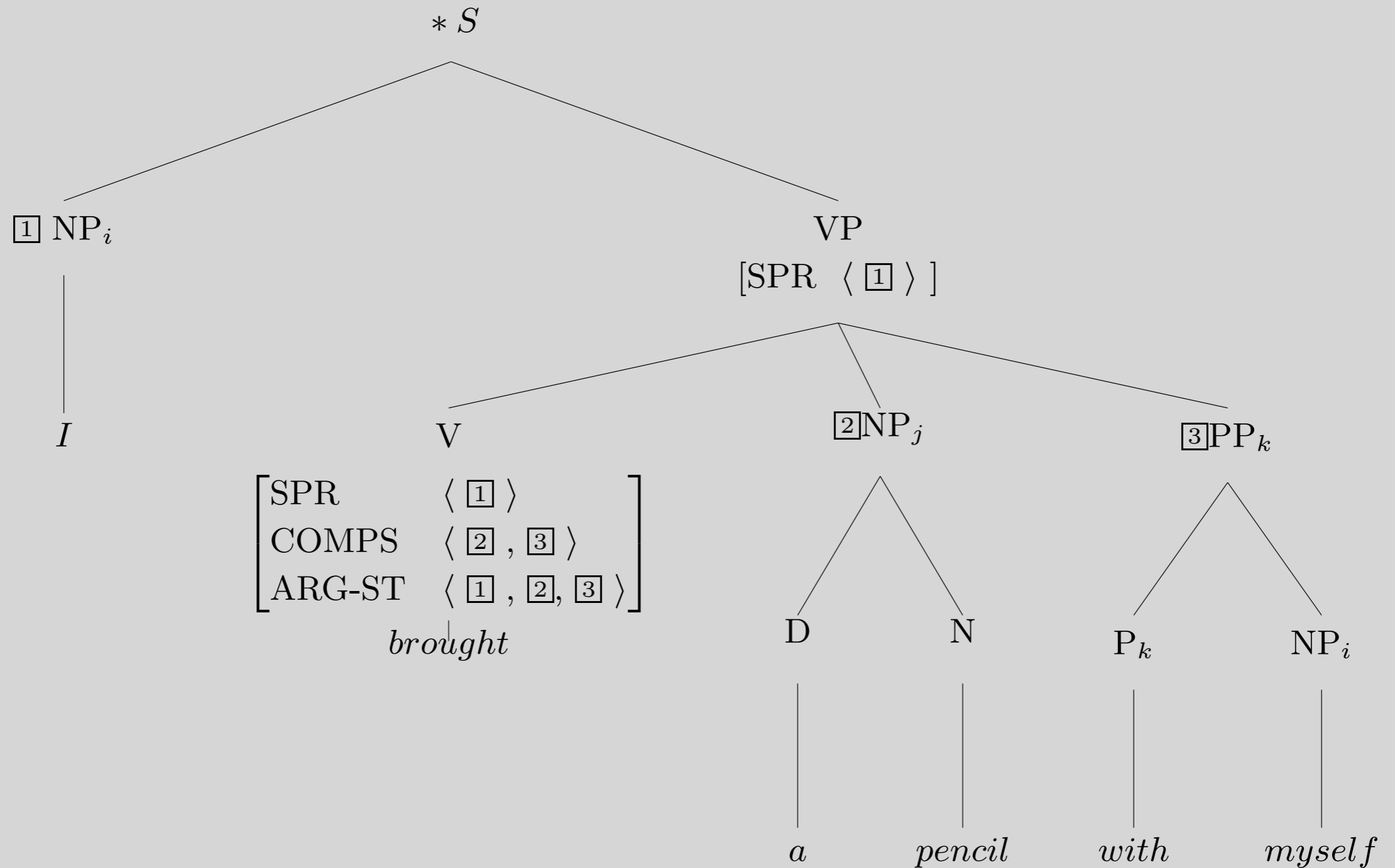
- The PP is outranked by the first NP.
- *me* has the same rank as the PP.
- So, *me* is outranked by the first NP.
- Therefore, Principle B is violated.

Another Example



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

Replacing *me* 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*

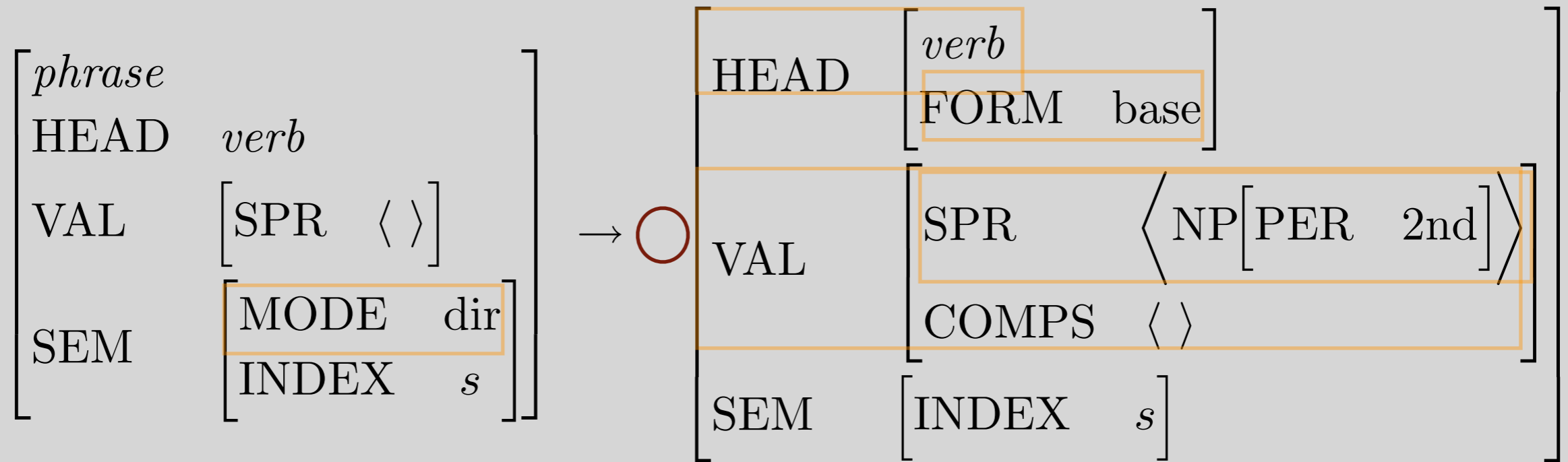
- Have the verb in base form

Be careful! not **Are careful!*

- Allow 2nd person reflexives, and no others

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

The Imperative Rule



- 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?

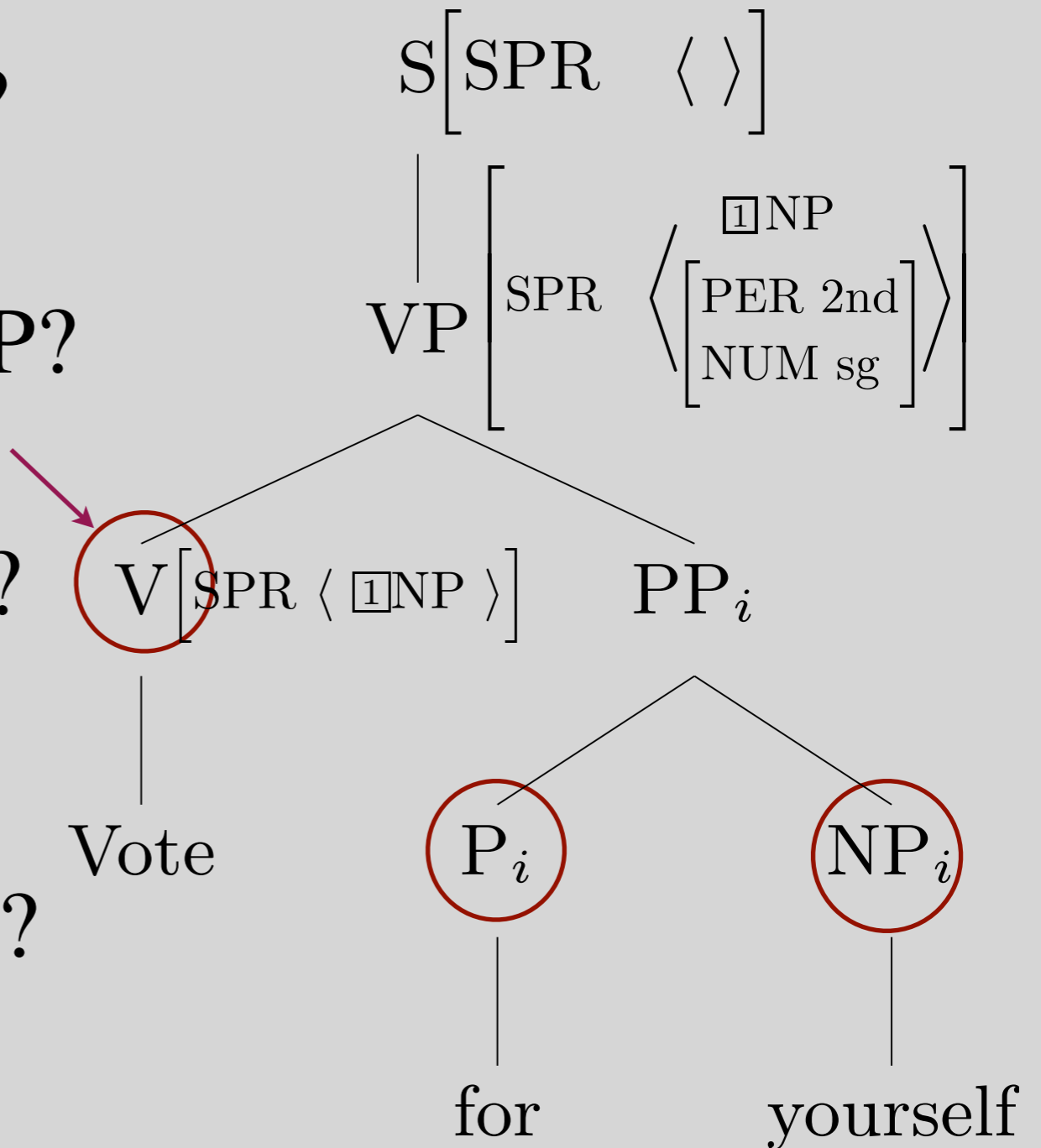
Why?

What's the SPR value on V?

Why?

Which nodes have ARG-ST?

Which ARG-ST matters for
the licensing of yourself?



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W The Imperative Rule just does away with that SPR requirement, without providing an overt constituent:

Sneaky!

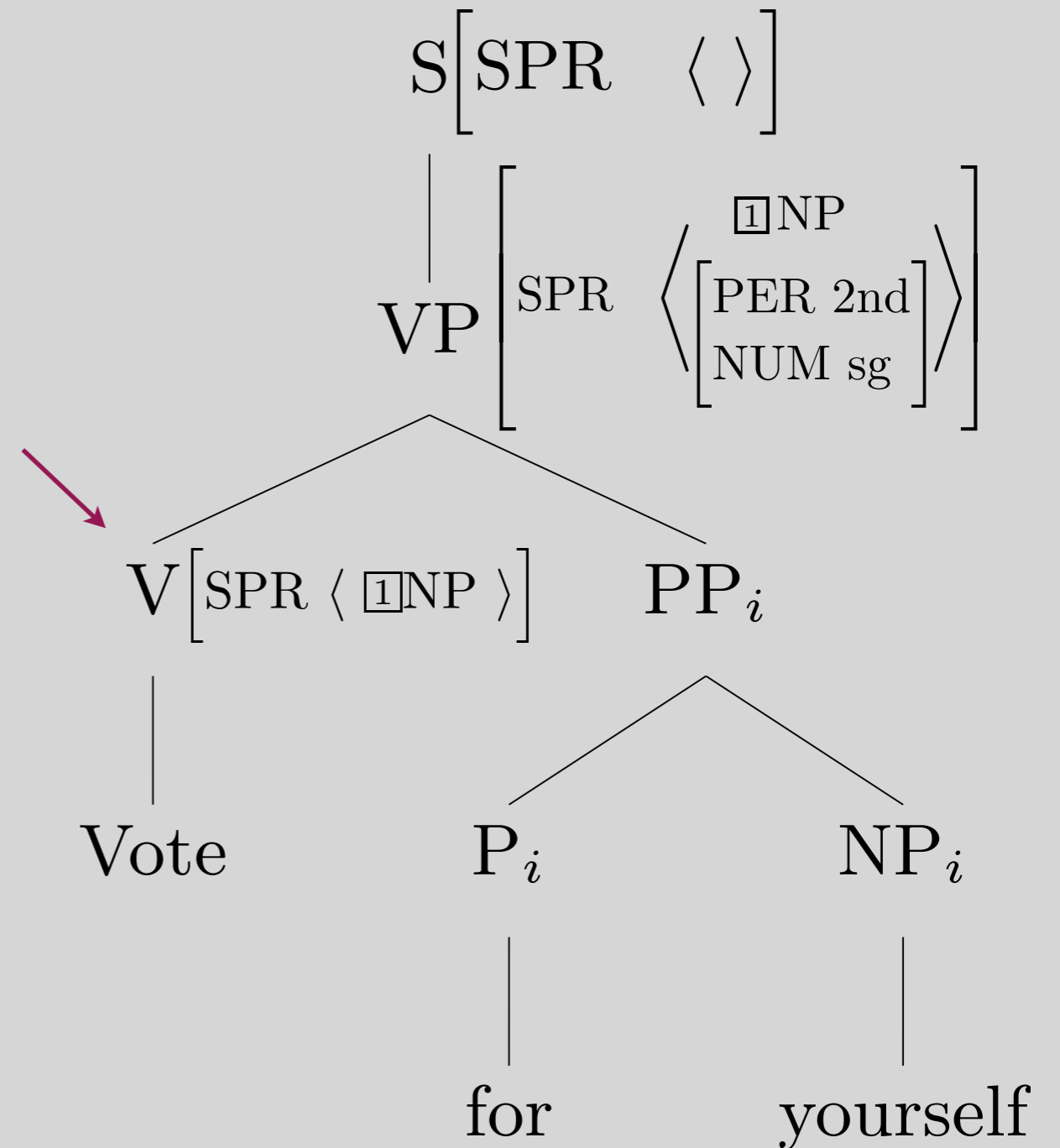
Unfair! The verb needed
that SPR!

Confusing! How can a
requirement just go away?

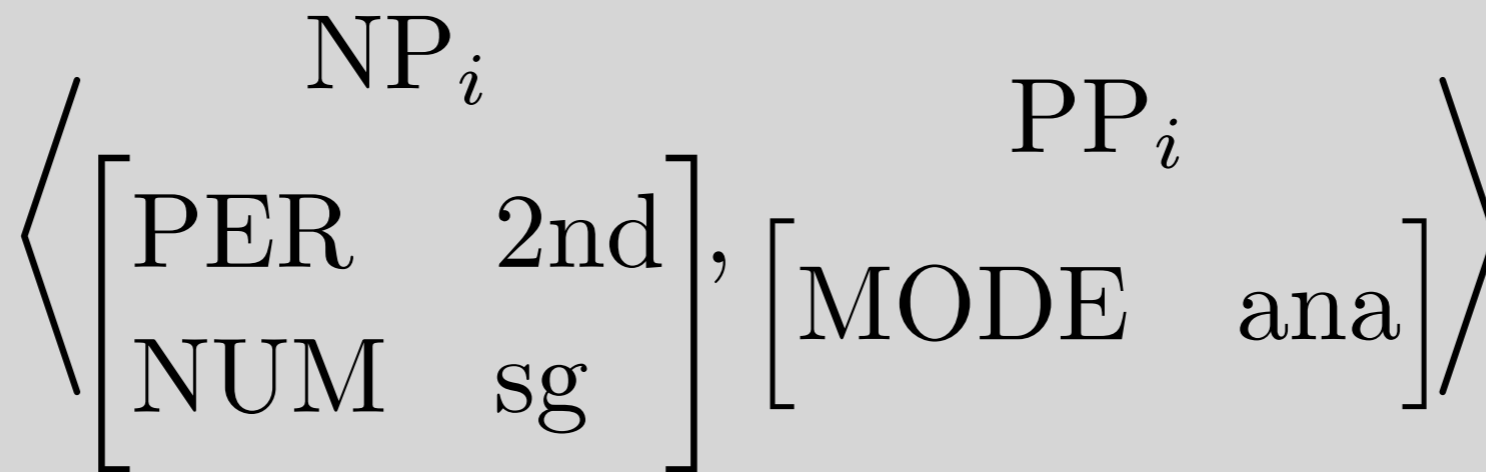
Subtle! I can see it works,
but it's still surprising

Elegant!

Imperative example (Combining constraints again)



ARG-ST on *vote*



- 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

- On page 206, the Argument Realization Principle uses the \oplus symbol. What does the symbol mean in this context? And when does \oplus differ from a comma-delimited list?

$$\left[\begin{array}{l} \text{SYN} \\ \text{ARG-ST} \end{array} \left[\begin{array}{l} \text{VAL} \\ \boxed{A} \oplus \boxed{B} \end{array} \left[\begin{array}{l} \text{SPR} \\ \text{COMPS} \end{array} \left[\begin{array}{l} \boxed{A} \\ \boxed{B} \end{array} \right] \right] \right] \right]$$

Reading Questions

- “There is no need to copy the information up to higher levels of the tree, and so ARG-ST is posited only as a feature of words, not phrases.” Since only word structures can have the feature ARG-ST, I was wondering what other word structures have this feature except for verbs and prepositions. Will there be any disadvantages having this type of restriction?
- Why is ARG-ST only a feature of word structures? I thought the difference between word and phrase structures is just that the phrase level ones are saturated. Since the ARG-ST combines all the arguments (SPR and COMPS) of a word, could we say that ARG-ST becomes fully saturated at the top-level node?

Reading Questions

- Do we still want to list out SPR and COMPS after we have ARG-ST? I think ARG-ST list should be enough for what we need, that the first element is verb specifier and the rest verb complements.

Reading Questions

- I'm not really sure how (47) "If a language can relativize X , then it can relativize and element that outranks X " is a generalization of the fact that if a language allows (46) "I met the person [to whom they handed a present ___]", then it allows (45a) "I met the person [who ___ left]" and (45b) "I met the person [who they visited ___]". Is it saying that "person" in (46) outranks its appearances in (45)? If so, how does it outrank them?

Reading Questions

- Is it true that ARG-ST is not inside SYN because it needs SEM features(MODE, INDEX) to be complete?
- Is it because our grammar is built for English that it does not seem very necessary to have a separate feature for ordering?

Reading Questions

- For any pair of elements in the ARG-ST list, does one outrank the other every time? Do they have the same 'rank' for any case?

Reading Questions

- The binding principles allow us to establish the difference between PPs that are arguments vs. PPs that are not arguments of verbs. But within the category of PPs that are arguments of verbs, there's a difference between PPs of verbs like to give and PPs of verbs like to put. Do the binding principles account for this difference? If so, how?

Reading Questions

- In the example on page 214, the explanation of the ranks notes that Principle A is satisfied several times, and could be satisfied one more time if (34) was met, but that that would be implausible. So my question is: How many times do the principles need to be satisfied in one example for the example to be considered well-formed?

Reading Questions

- How do our binding principles account for the binding domain in sentences with clauses? For example, “*I_i think he_j likes myself_i.”

Reading Questions

- As mentioned in page 217 "Imperative Rule is not headed rule", what we actually mean by "not headed rule" other than not following SIP, HFP and Valence principle.

Reading Questions

- I don't fully understand the difference between coindexing and coreferencing. In the sentence the solution to this problem is rest and relaxation, both "this problem" and "rest and relaxation" are talking about the same thing - then how are they not coindexed, as well?

Reading Questions

- Through reading the parts a couple more times, I think this has to do with "not all pairs of coreferential NPs are coindexed". And in Example 23, "my family" and "they" don't have the same NUM so that violates AAP, and therefore they can't be coindexed. But this is quite unintuitive for me -- it does seem natural for coreferential NPs to be coindexed, why do we not design it to be so?

Reading Questions

- How do we distinguish coindexing and coreferencing? Lexical entry?

Reading Questions

- Would "they/themselves" as gender neutral singular N be an example of coreferential, but not coindexed? As it is now widely accepted as grammatical, how do we approach this in grammar checking algorithm?

Reading Questions

- P. 209, the footnote clarifies that our current theory does not allow a sentence like "Pat's family is enjoying themselves." What is it about our current theory that disallows this and what might need to change in order to accommodate such an example?

Reading Questions

- If we can posit that there are different prepositional phrases that exhibit different binding patterns, why doesn't the theory do the same with collective noun antecedents? For me "Pat's family is enjoying themselves" would be used in a different context than "Pat's family is enjoying itself", so what prevents us from proposing that either (a) there are distinct, homophonous NPs with different AGR values that would allow the different sentences to comply with the AAP, or (b) we need an additional category (like AGR-ST) or rule that would allow us to change AGR and possibly SEM values?