

Ling 566

Oct 24, 2022

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 items (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

Total Results: 0

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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.

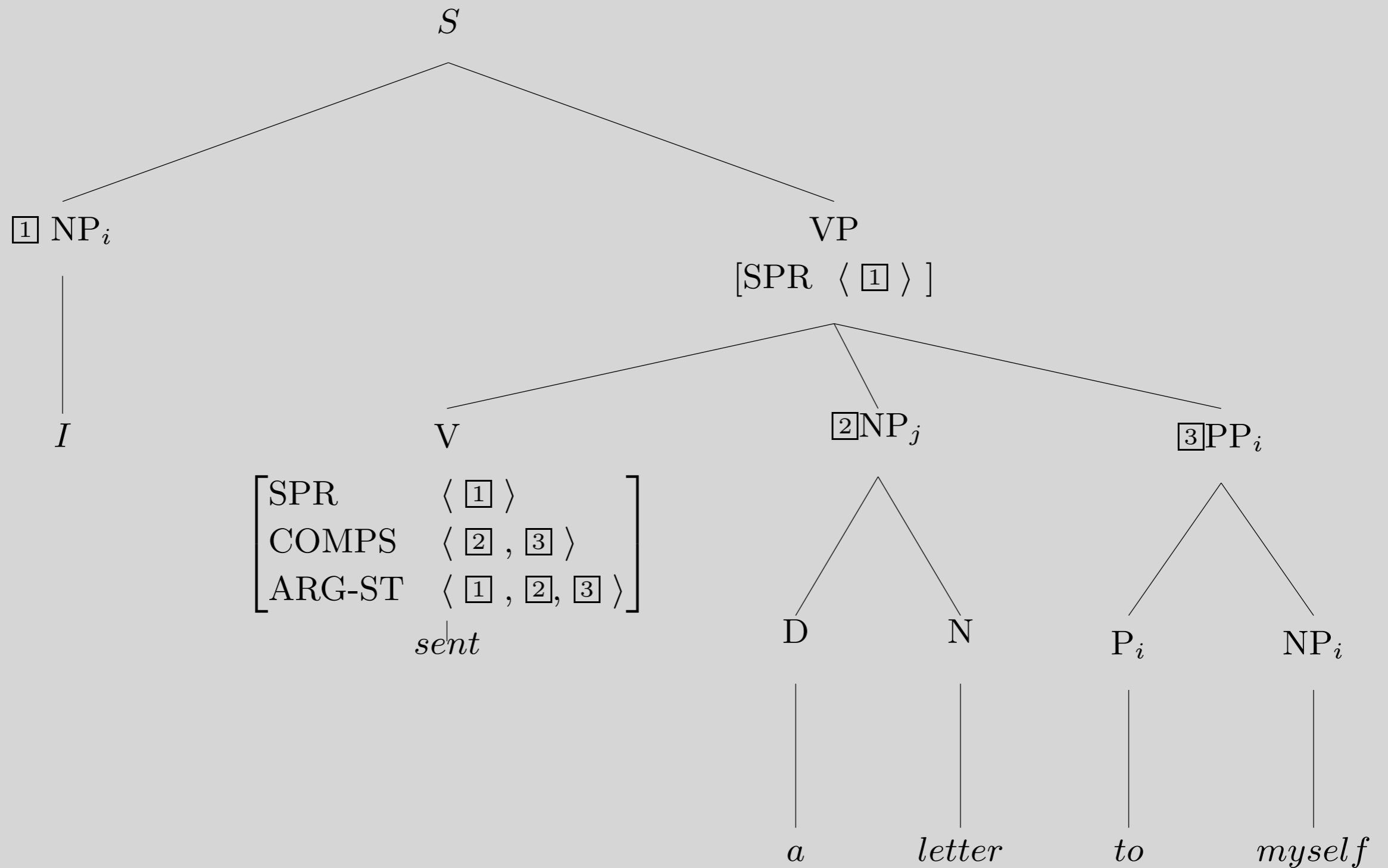
Two Types of Prepositions: a Formalization

- 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

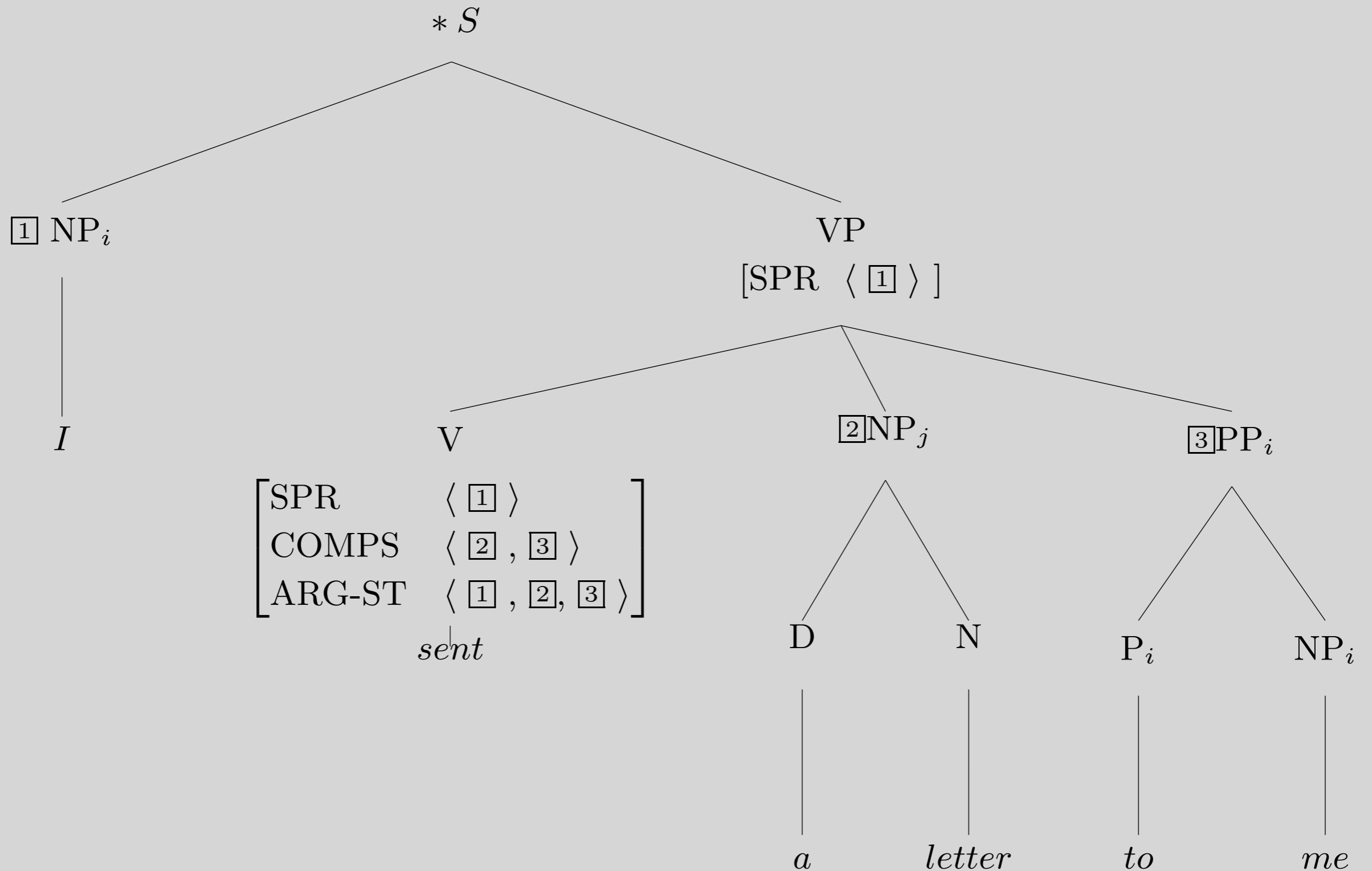


The ARG-ST

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

- 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*

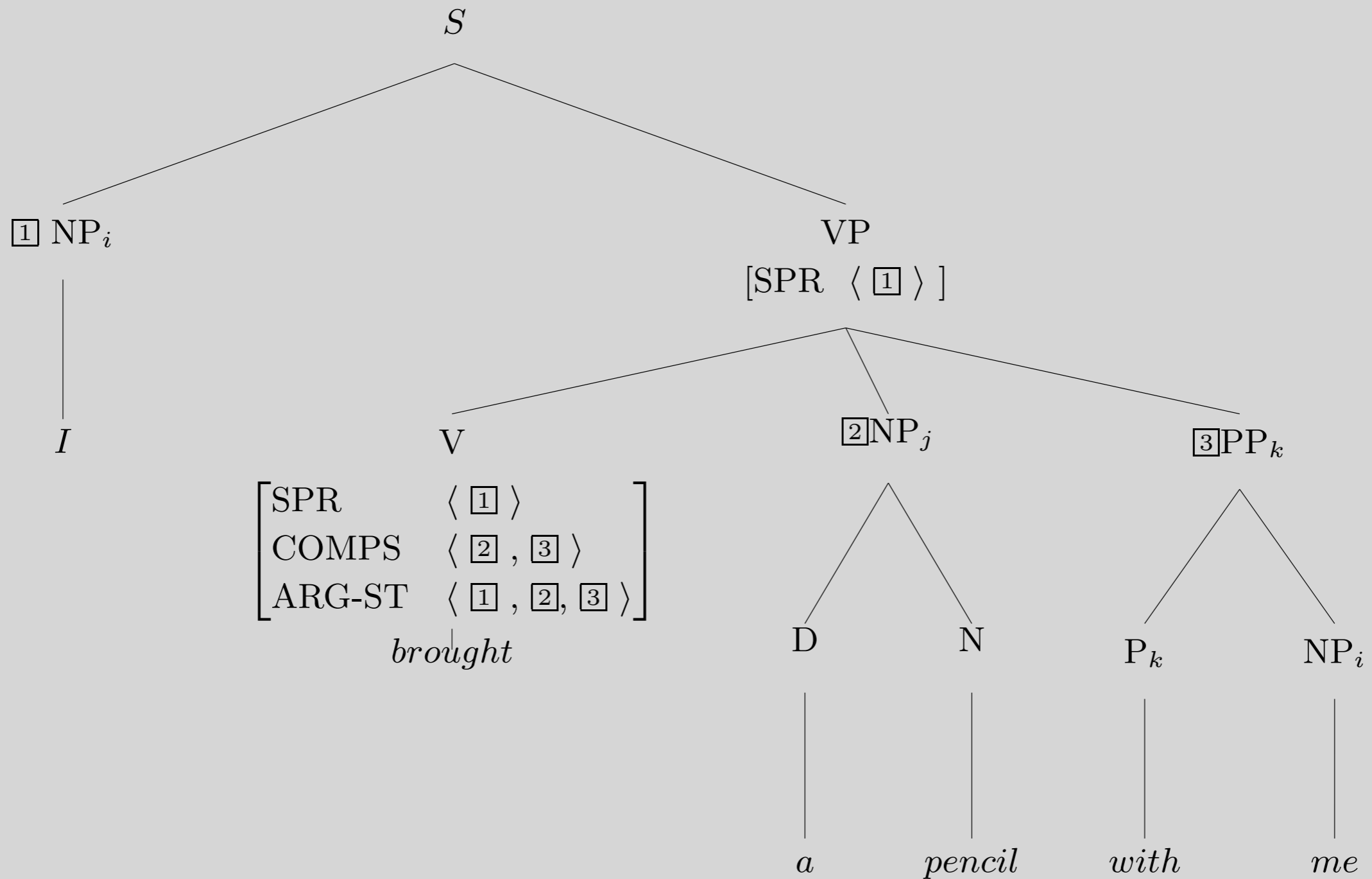


The ARG-ST

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

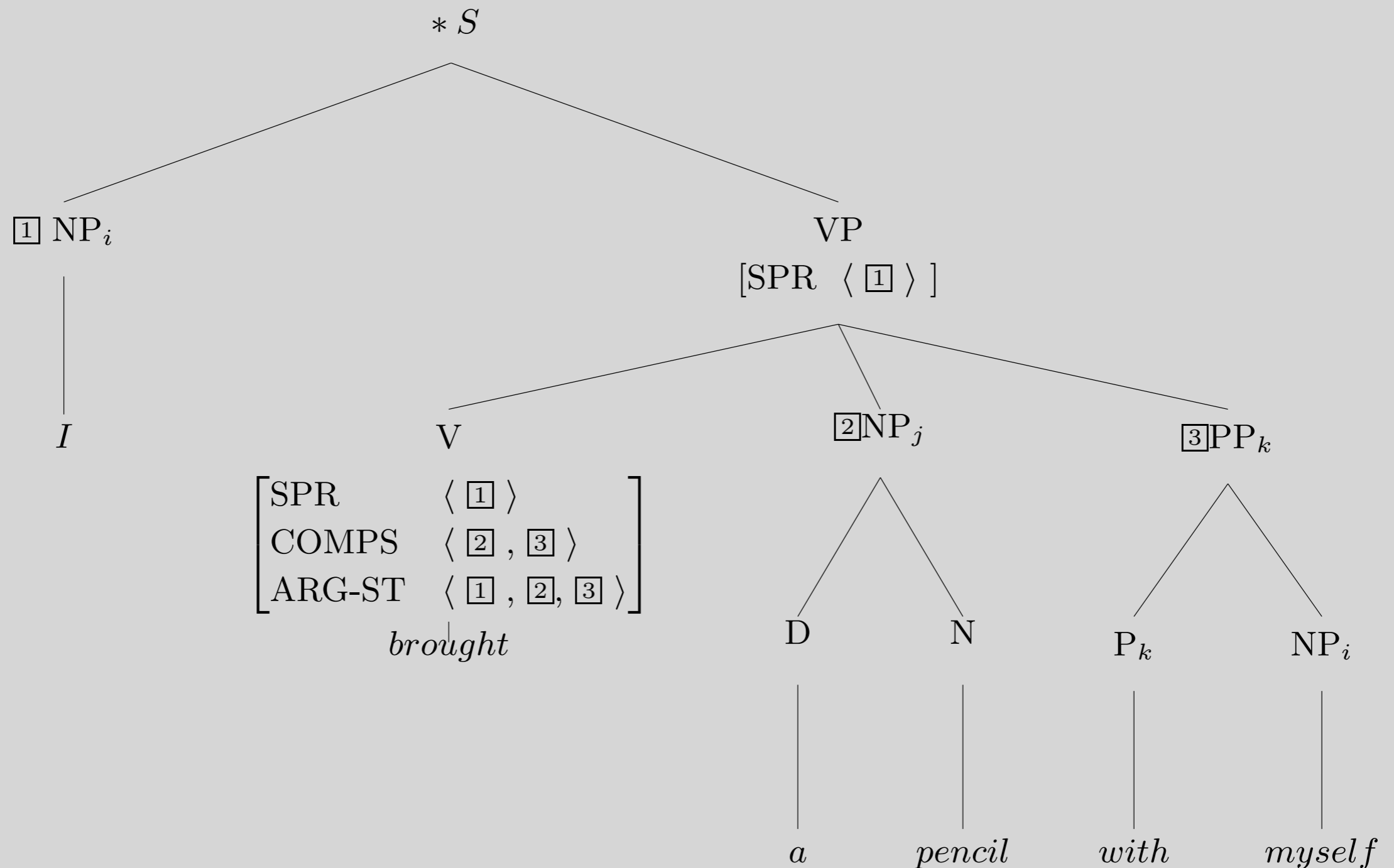
- The PP is outranked by the first NP.
- *me* has the same rank as the PP.
- So, *me* is outranked by the first NP.
- Therefore, Principle B is violated.

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*

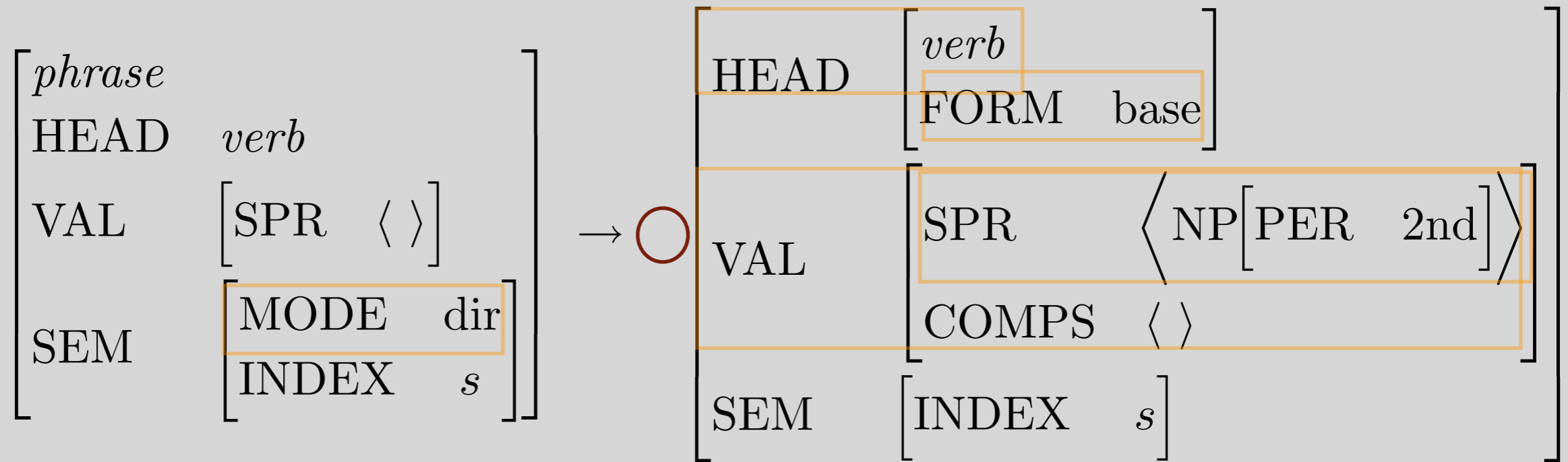
- Have the verb in base form

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?

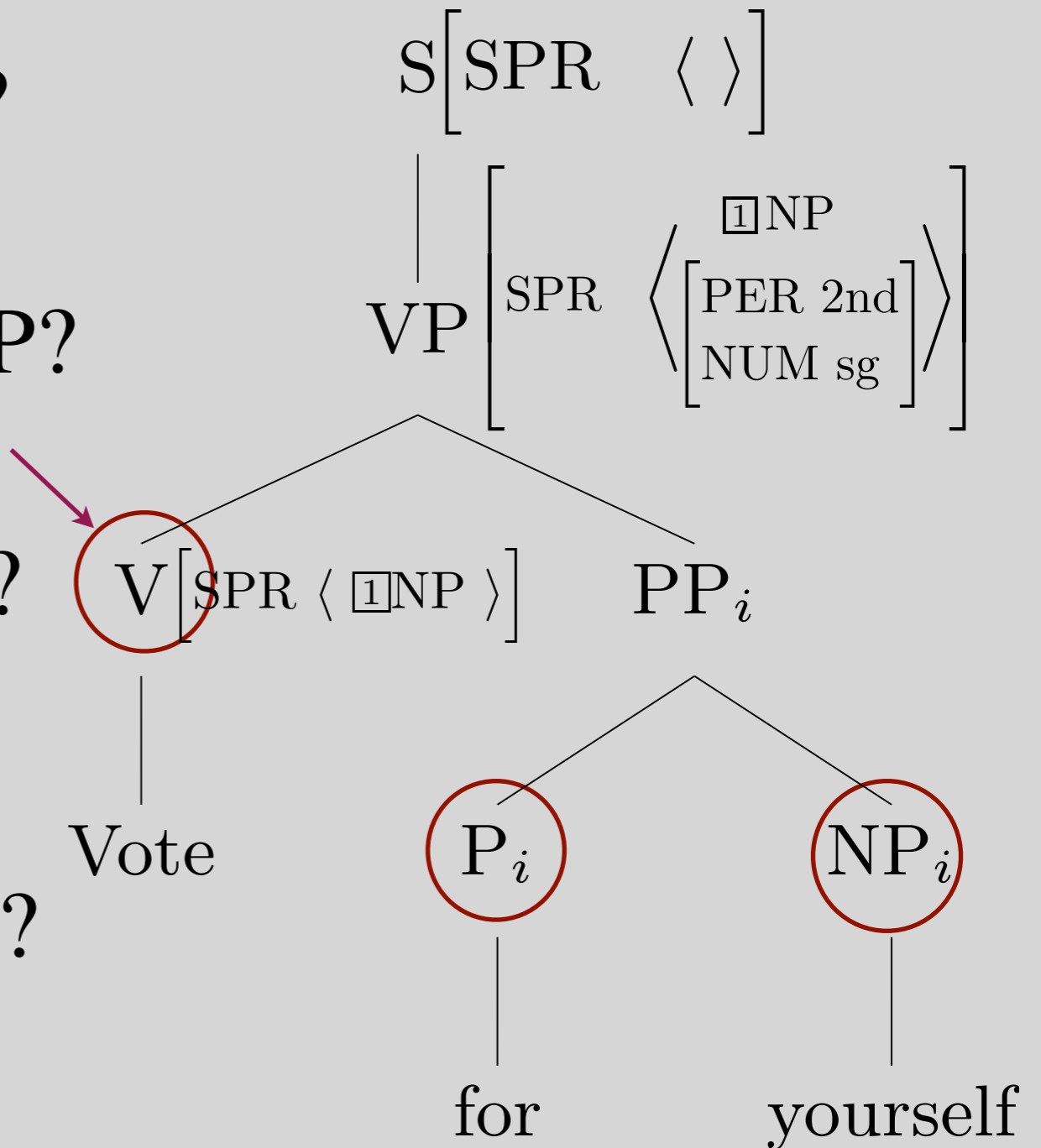
Why?

What's the SPR value on V?

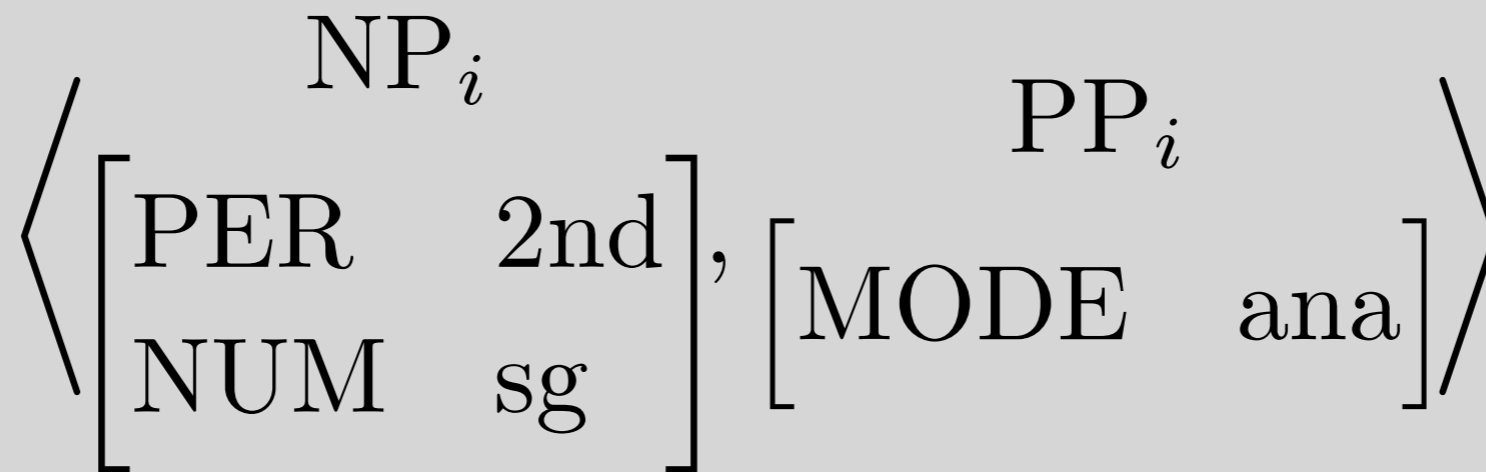
Why?

Which nodes have ARG-ST?

Which ARG-ST matters for
the licensing of yourself?



ARG-ST on *vote*



- Is Principle A satisfied?
- How?
- Is Principle B satisfied?
- How?

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

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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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RQs: other *selves*

- Sometimes (usually in colloquial speech), the "-self" pronouns are used for emphasis rather than referencing an earlier referent. Examples include "this was done all by myself" and "I need to work harder to compete with people like yourself". Would these reflexive pronouns be considered "ref" rather than "ana"?

RQs: Abbreviated paths

- As our entries become more complicated and we choose to omit more from the structure, what rules are in place about where to put features? (40) on pg. 216 has HEAD, VAL, and SEM on the same 'level.' When is it okay to omit something like SYN? Also, for a specifier entry, can we have features on different levels put in the same list? In other words, could we have a SPR <NP [AGR plural] [INDEX k]> without needing to say [SYN [HEAD [AGR plural]]] [SEM [INDEX k]]? When can we not omit these other levels?

RQs: coref v. coindexed

- The book says that 'not all pairs of coreferential NPs are coindexed.' Could we explore this a little further?
- Why is it that "the solution" and "rest and relaxation" are not coindexed? Is it because one is a singular NP and the other is a plural NP? Or is it the opposite - because they aren't coindexed, they can have different AGRs?

RQs: ARG-ST

- Based on (13), it appears ARG-ST is on the same level as SYN. Why isn't it within SYN like HEAD and VAL?
- Is it required to include VAL on the SYN level if it is going to be included on ARG-ST?
- Why is ARG-ST located only at the leaves/on words? How is it fundamentally different from the way that the VAL features work if its the composition of all of the VAL arguments?

RQs: ARG-ST

- If ARG-ST is being used as a bridge between SYN and SEM, does that make it required to be always written out (especially for verbs)?
- I've noticed that the book sometimes uses the append symbol to combine tags, such as appending the predicates together in the RESTR value. This is also repeated for the Argument Realization Principle in this chapter. However, I've also noticed that examples sometimes just use commas between tags to show a list. Is there a difference between the two?

RQs: Binding principles

- How is (20) I_i thought that nobody liked him_i not ruled out by Principle B? (Used to motivate the AAP.)
- I am still a bit confused about coindexing. I am wondering why I and him are coindexed in example (20). And in general, how do we determine whether two entity are coindexed or not? Is it through the semantic structures introduced in the previous chapter?

RQs: prepositions

- In sentence 27c (Susan wrapped the blanket around her/herself), how is 'around' ambiguous between being an independent predicate and an argument marker? To me, it seems that 'wrap' (as used in this context, unlike in 'wrap a present'), requires the PP argument because it needs something to be 'wrapping' around. Saying 'Susan wrapped the blanket' sounds ungrammatical. In fact, you could even rewrite it as 'Susan wrapped herself in the blanket'. Therefore, I don't understand how we can argue that her or herself are both options because of ambiguity.

RQs: imperatives

- In the imperative rule, since the mother node does not not share the HEAD value with the daughter node, does this mean that the node for an imperative phrase will never carry any additional HEAD features such as AGR?
- The left hand side of the imperative rule states that it is always a phrase, but a command can be just a single word as well, as in "Run!"; would this mean that even words are treated as phrases for the purpose of this rule?

RQs: Other kinds of coref

- Most examples of coreferential words were referring to people. Does binding theory also apply to other things that can be referenced. I'm thinking of times and places.
- Taro went to Tokyo last week and now he wants to live there.
- Hanako has good memories of the 80's and wants to relive those days. (treating those days as a single word that references the 80's)
- Making that second example sentence was difficult. I couldn't think of a good single word to refer to a past time that sounded good to use in the sentence. "... wants to relive then" was didn't sound right. So my second question is: can a two word NOM (those days) refer to something else in the sentence with binding theory?

RQs: Cross-linguistic

- What's up in the Chinese equivalents of:
- (9) That picture of Susan_i offended *her_i/herself_i.
- (i) a. ?? 那张苏珊_i的照片冒犯了她自己_i
That picture of Susan_i offended herself_i.
- b. *那张苏珊_i的照片冒犯了她_i
That picture of Susan_i offended her_i.
- c. 那张苏珊_i的照片冒犯了她_j
That picture of Susan_i offended her_j.

RQs: Cross-linguistic

- It seems like whether a reflexive pronoun is used is at least in part based on its semantic function. Is this reliance on semantics in determining which pronoun to use language universal? Or are there languages where in all situations where there anaphora is used a reflexive pronoun must be present? Same thing applies with the imperatives, are there languages where the imperatives don't take reflexive objects?

English Resource Grammar

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- Demo: <https://delph-in.github.io/delphin-viz/demo>
- Flickinger 2000, 2011

Redwoods Treebank

- <https://github.com/delph-in/docs/wiki/RedwoodsTop>
- Use grammar to create parse forest
- Hand select preferred parse based on discriminants (Carter 1997)
- Store these choices!
- Oepen et al 2004, Flickinger et al 2017
- Demo: <http://erg.delph-in.net/logon>

HPSG formalism as Turing machine

- <https://delph-in.github.io/docs/summits/Fairhaven2022-Emerson-Turing-types/>