Chapter 7:

Binding Theory
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):

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

• This is a constraint on the type word
Notes on ARG-ST

• It’s neither in SYN nor SEM.
• It only appears on words (not appropriate for type phrase)
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

• The Binding Principles as just formulated make the wrong predictions about the following:

  \[ I \text{ brought a book with me.} \]
  \[ *I \text{ brought a book with myself.} \]
  \[ *I \text{ mailed a book to me.} \]
  \[ I \text{ mailed a book to myself.} \]

• Specifically, with the current formulation, only the non-reflexive pronouns should be good.
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 feature values are also shared with the MODE and INDEX values of the PP node, via the Semantic Inheritance Principle.
- Predicative prepositions introduce their own MODE and INDEX values.
Redefining Rank

• (As before) 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
  _____
 /   \
I    VP
  |   /
  |  [SPR ⟨ 1 ⟩ ]
  | /   \
V   /    \
  |   [2]NP_j
  | /     \
  |  [3]PP_i
  | /
  | sent
  | [SPR ⟨ 1 ⟩ ]
  | [COMPS ⟨ 2 , 3 ⟩ ]
  | [ARG-ST ⟨ 1 , 2 , 3 ⟩ ]
  | [NP_i]
  | /
  | D
  | /
  | a
  | /
  | N
  | /
  | letter
  | /
  | P_i
  | /
  | to
  | /
  | NP_i
  | /
  | myself
```
The ARG-ST

\[
\begin{align*}
\text{ARG-ST} & \left\langle \left[ \text{NP}_i [\text{MODE ref}] \right], \left[ \text{NP}_j [\text{MODE ref}] \right], \left[ \text{PP}_i [\text{MODE ana}] \right] \right\rangle
\end{align*}
\]

- The PP is outranked by the first NP.
- \textit{myself} has the same rank as the PP.
- So, \textit{myself} is outranked by the first NP.
- Therefore, Principle A is satisfied.
Replacing *myself* with *me*
The ARG-ST

\[
\begin{bmatrix}
\text{ARG-ST} \\
\langle [\text{MODE ref}] \\
[\text{MODE ref}] \\
[\text{MODE ref}] \rangle
\end{bmatrix}
\]

- 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.
Comparison with Other Binding Theories

• Not based on a configurational notion like c-command
• Instead uses outrank, defined on the ARG-ST list, a property of lexical heads
• Binding is less dependent on tree geometry than in other theories