Ling 566
Oct 13, 2016

Semantics

Overview

- Some notes on the linguist's stance
- Which aspects of semantics we'll tackle
- Our formalization; Semantics Principles
- Building semantics of phrases
- Modification, coordination
- Structural ambiguity
- Reading questions

The Linguist's Stance: Building a precise model

- Some of our statements are statements about how the model works:

  "[*prep*] and [AGR *3sing*] can't be combined because AGR is not a feature of the type *prep*."

- Some of our statements are statements about how (we think) English or language in general works.

  "The determiners *a* and *many* only occur with count nouns, the determiner *much* only occurs with mass nouns, and the determiner *the* occurs with either."

- Some are statements about how we code a particular linguistic fact within the model.

  "All count nouns are [SPR < [COUNT +]>]."

The Linguist's Stance:
A Vista on the Set of Possible English Sentences

- ... as a background against which linguistic elements (words, phrases) have a distribution
- ... as an arena in which linguistic elements "behave" in certain ways

Semantics: Where's the Beef?

So far, our grammar has no semantic representations. We have, however, been relying on semantic intuitions in our argumentation, and discussing semantic contrasts where they line up (or don't) with syntactic ones.

Examples?

- structural ambiguity
- S/NP parallelism
- count/mass distinction
- complements vs. modifiers

Our Slice of a World of Meanings

Aspects of meaning we won't account for

- Pragmatics
- Fine-grained lexical semantics:

The meaning of *life* is *life'*, or, in our case,

$$\begin{bmatrix} \text{RELN} & \text{life} \\ \text{INST} & i \end{bmatrix}$$

Our Slice of a World of Meanings

$$\begin{bmatrix} \text{MODE} & \text{prop} \\ \text{INDEX} & s \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{save} \\ \text{SIT} & s \\ \text{SAVER} & i \\ \text{SAVED} & j \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Chris} \\ \text{NAMED} & i \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Pat} \\ \text{NAMED} & j \end{bmatrix} \right\rangle \end{bmatrix}$$

"... the linguistic meaning of *Chris saved Pat* is a proposition that will be true just in case there is an actual situation that involves the saving of someone named Pat by someone named Chris." (p. 140)

Our Slice of a World of Meanings

What we are accounting for is the compositionality of sentence meaning.

- How the pieces fit together

  Semantic arguments and indices

- How the meanings of the parts add up to the meaning of the whole.

  Appending RESTR lists up the tree

Semantics in Constraint-Based Grammar

- Constraints as (generalized) truth conditions
  - proposition: what must be the case for a proposition to be true
  - directive: what must happen for a directive to be fulfilled
  - question: the kind of situation the asker is asking about
  - reference: the kind of entity the speaker is referring to

- Syntax/semantics interface: Constraints on how syntactic arguments are related to semantic ones, and on how semantic information is compiled from different parts of the sentence.

Feature Geometry

$$\begin{bmatrix} \text{SYN} & \begin{bmatrix} \text{HEAD} & pos \\ \text{VAL} & \begin{bmatrix} \text{SPR} & list(expression) \\ \text{COMPS} & list(expression) \end{bmatrix} \end{bmatrix} \\ \text{SEM} & \begin{bmatrix} \text{MODE} & \{ \text{prop} , \text{ques} , \text{dir} , \text{ref}, \text{none} \} \\ \text{INDEX} & \{ i , j , k , \ldots s_1 , s_2 , \ldots \} \\ \text{RESTR} & list(pred) \end{bmatrix} \end{bmatrix}$$

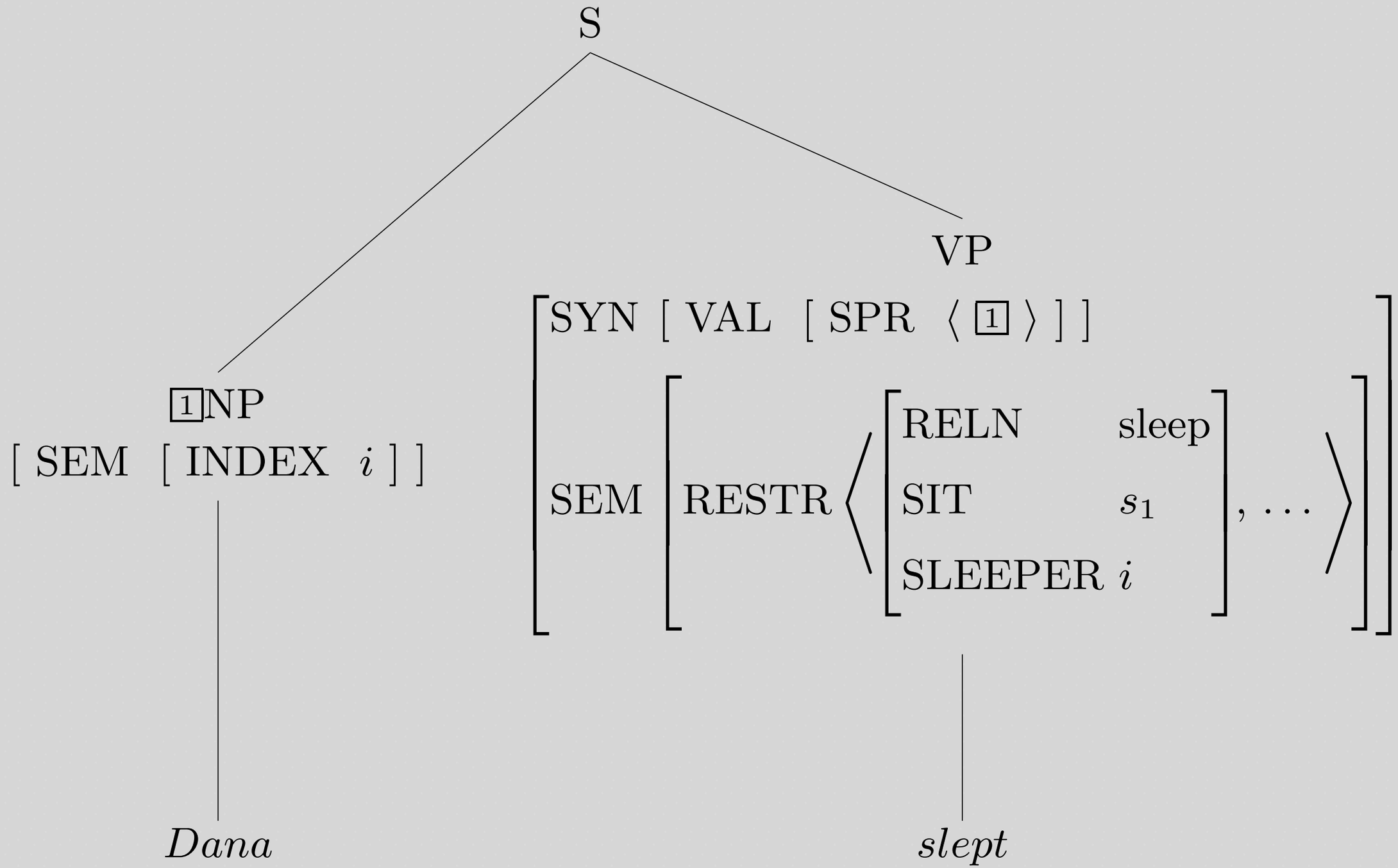
How the Pieces Fit Together

$$\left\langle \text{Dana} , \left[\begin{array}{ll} \textit{word} & \\ \text{SYN} & \left[\begin{array}{ll} \text{HEAD} & \left[\begin{array}{ll} \textit{noun} & \\ \text{AGR} & \textit{3sing} \end{array}\right] \\ \text{VAL} & \left[\begin{array}{ll} \text{SPR} & \langle\ \rangle \\ \text{COMPS} & \langle\ \rangle \end{array}\right] \end{array}\right] \\ \text{SEM} & \left[\begin{array}{ll} \text{INDEX} & i \\ \text{MODE} & \text{ref} \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \text{name} \\ \text{NAME} & \text{Dana} \\ \text{NAMED} & i \end{array}\right] \right\rangle \end{array}\right] \end{array}\right] \right\rangle$$

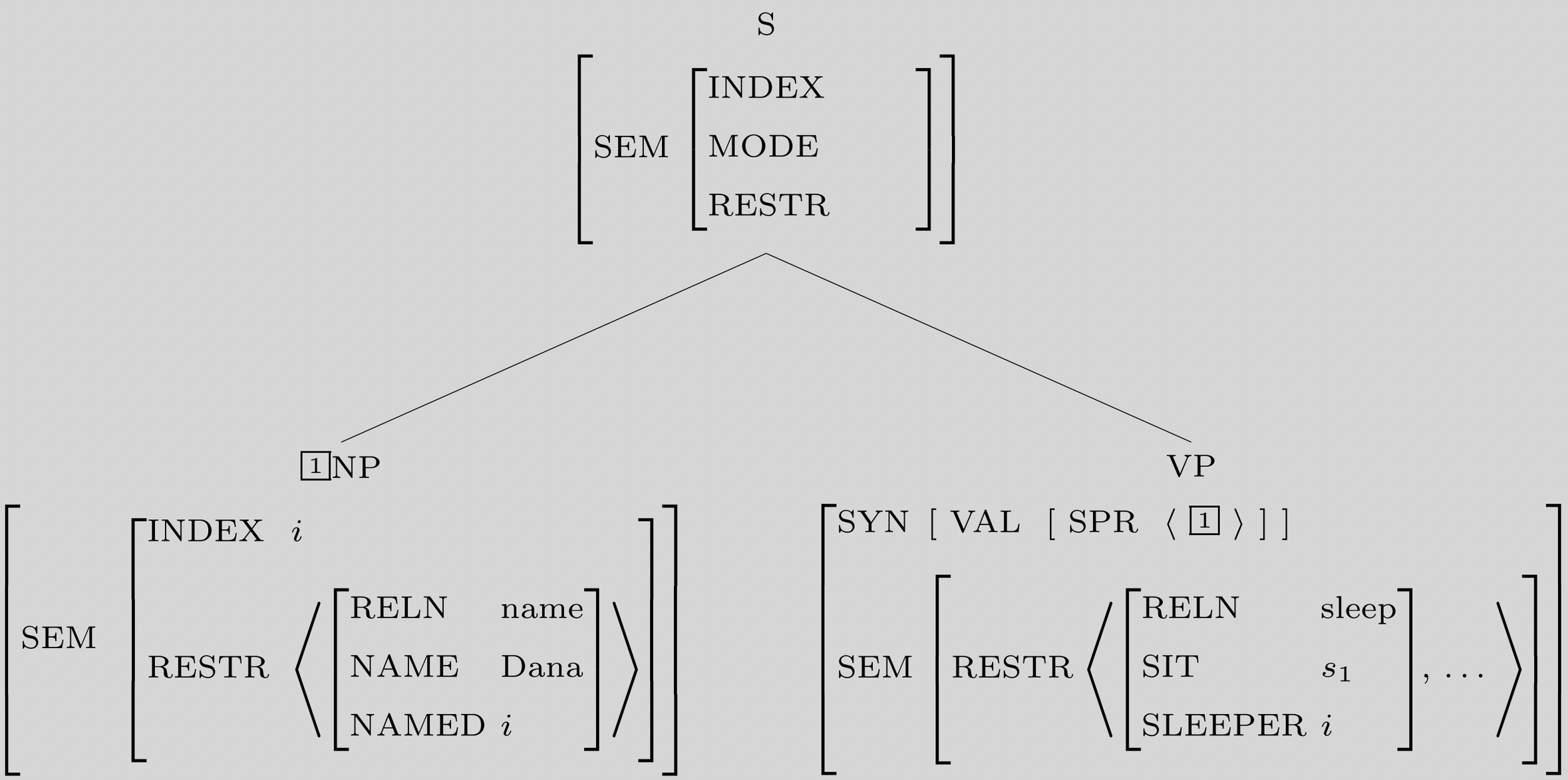
How the Pieces Fit Together

$$\left\langle \text{slept},\ \left[\begin{array}{ll} \textit{word} & \\ \text{SYN} & \left[\begin{array}{ll} \text{HEAD} & \textit{verb} \\ \text{VAL} & \left[\begin{array}{ll} \text{SPR} & \langle\ \text{NP}\boxed{j}\ \rangle \\ \text{COMPS} & \langle\ \rangle \end{array}\right] \end{array}\right] \\ \text{SEM} & \left[\begin{array}{ll} \text{INDEX} & s_1 \\ \text{MODE} & \text{prop} \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \text{sleep} \\ \text{SIT} & s_1 \\ \text{SLEEPER} & \boxed{j} \end{array}\right], \ldots \right\rangle \end{array}\right] \end{array}\right] \right\rangle$$

The Pieces Together



A More Detailed View of the Same Tree



To Fill in Semantics for the S-node

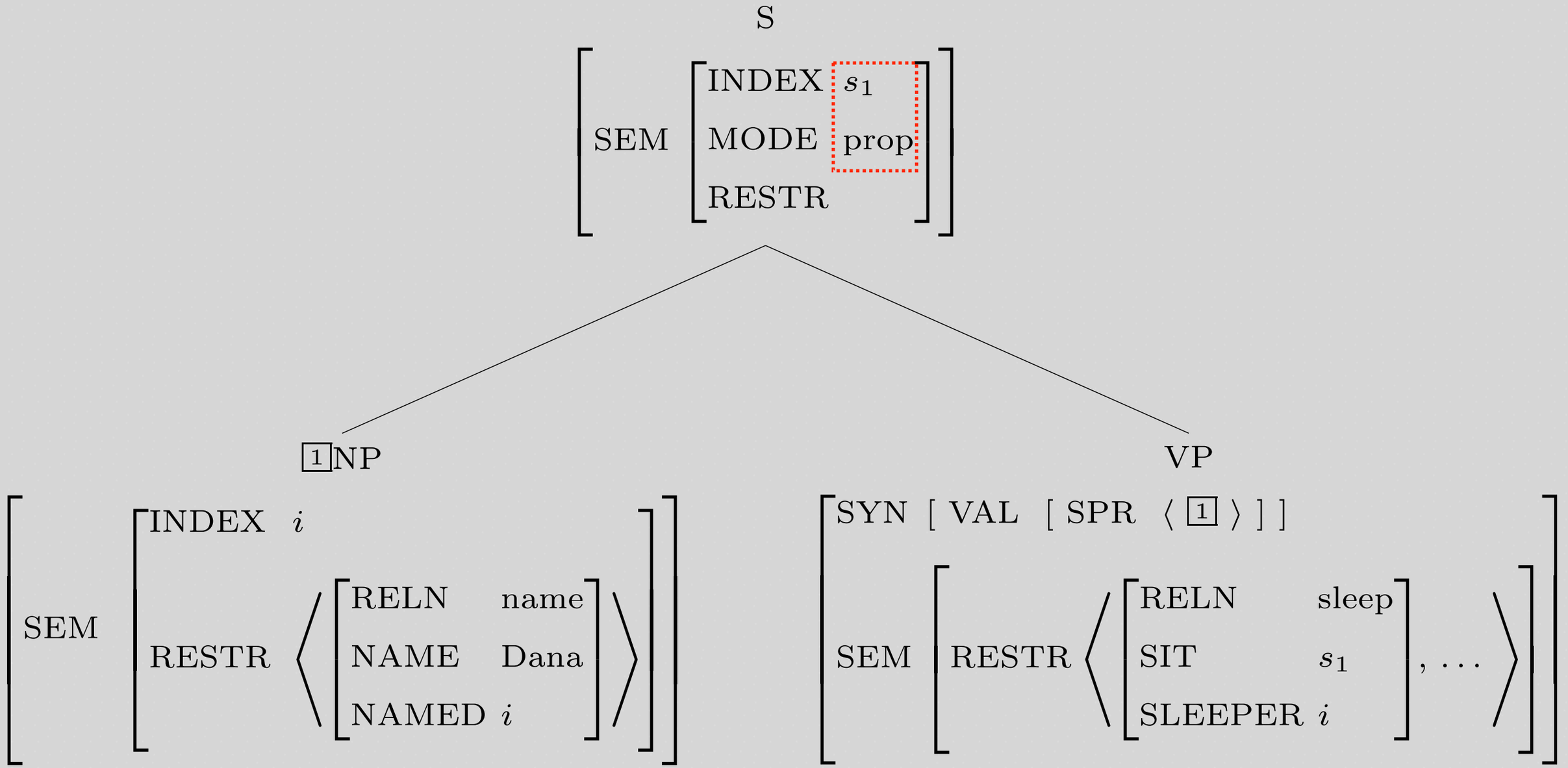
We need the Semantics Principles

- The Semantic Inheritance Principle:

In any headed phrase, the mother's MODE and INDEX are identical to those of the head daughter.

- The Semantic Compositionality Principle:

Semantic Inheritance Illustrated



To Fill in Semantics for the S-node

We need the Semantics Principles

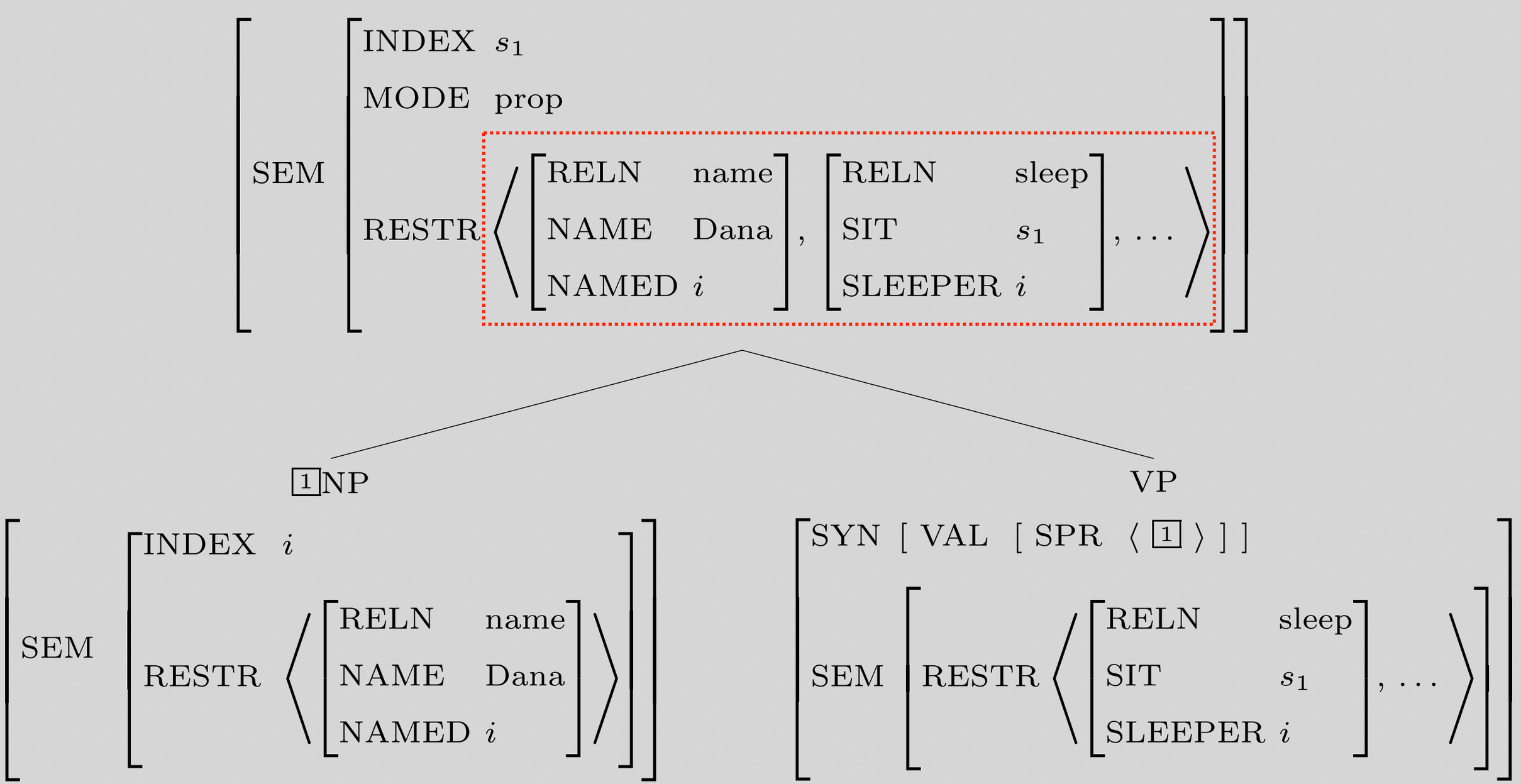
- The Semantic Inheritance Principle:

  In any headed phrase, the mother's MODE and INDEX are identical to those of the head daughter.

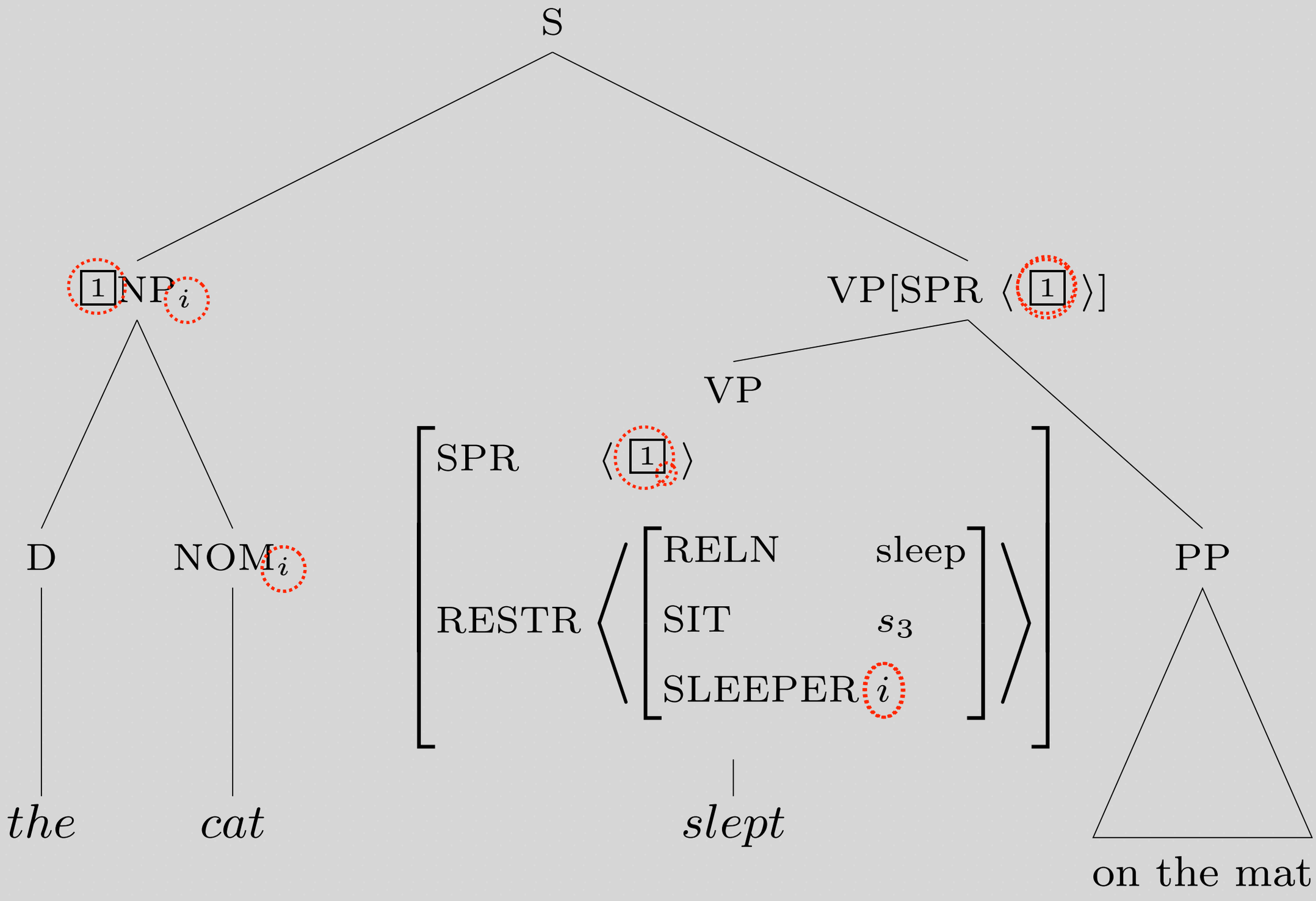
- The Semantic Compositionality Principle:

  In any well-formed phrase structure, the mother's RESTR value is the sum of the RESTR values of the daughter.

Semantic Compositionality Illustrated



What Identifies Indices?



Summary: Words ...

- contribute predications
- 'expose' one index in those predications, for use by words or phrases
- relate syntactic arguments to semantic arguments

$$\left\langle \text{slept}, \left[\begin{array}{ll} word & \\ \text{SYN} & \left[\begin{array}{ll} \text{HEAD} & verb \\ \text{VAL} & \left[\begin{array}{ll} \text{SPR} & \langle\ \text{NP}_{\boxed{j}}\ \rangle \\ \text{COMPS} & \langle\ \rangle \end{array} \right] \end{array} \right] \\ \text{SEM} & \left[\begin{array}{ll} \text{INDEX} & \boxed{s_1} \\ \text{MODE} & \text{prop} \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \text{sleep} \\ \text{SIT} & \boxed{s_1} \\ \text{SLEEPER} & \boxed{j} \end{array} \right], \ldots \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

Summary: Grammar Rules ...

- identify feature structures (including the INDEX value) across daughters

Head Specifier Rule

$$\begin{bmatrix} \textit{phrase} \\ \text{SYN}\begin{bmatrix}\text{VAL}\begin{bmatrix}\text{SPR} & \langle\,\rangle\end{bmatrix}\end{bmatrix}\end{bmatrix} \rightarrow \boxed{1} \quad \mathbf{H}\begin{bmatrix}\text{SYN}\begin{bmatrix}\text{VAL}\begin{bmatrix}\text{SPR} & \langle \boxed{1} \rangle \\ \text{COMPS} & \langle\,\rangle\end{bmatrix}\end{bmatrix}\end{bmatrix}$$

Head Complement Rule

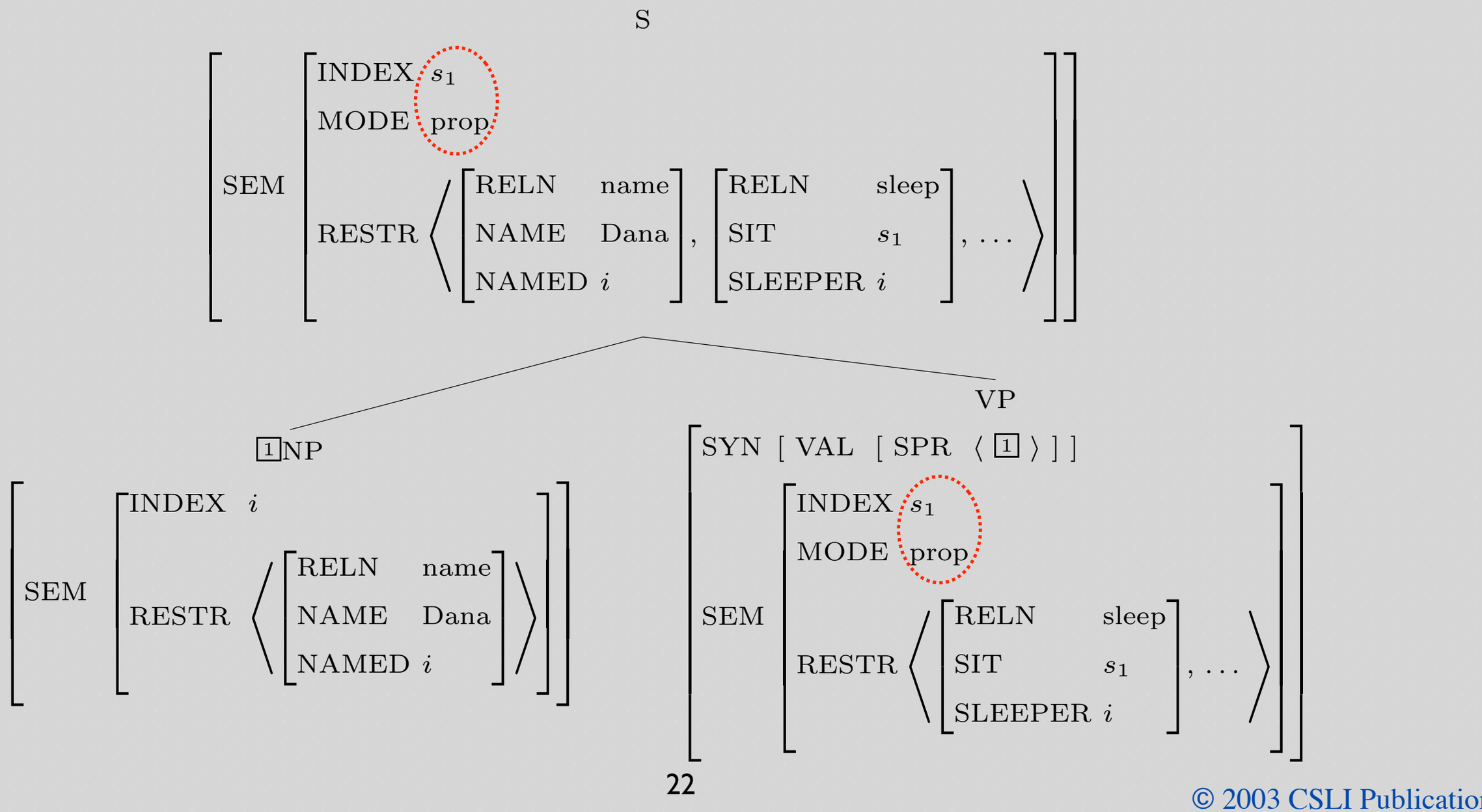
$$\begin{bmatrix} \textit{phrase} \\ \text{SYN}\begin{bmatrix}\text{VAL}\begin{bmatrix}\text{COMPS} & \langle\,\rangle\end{bmatrix}\end{bmatrix}\end{bmatrix} \rightarrow \mathbf{H}\begin{bmatrix} \textit{word} \\ \text{SYN}\begin{bmatrix}\text{VAL}\begin{bmatrix}\text{COMPS} & \langle \boxed{1}, \ldots, \boxed{n} \rangle\end{bmatrix}\end{bmatrix}\end{bmatrix} \quad \boxed{1} \ldots \boxed{n}$$

Head Modifier Rule

$$[\textit{phrase}] \rightarrow \mathbf{H}\,\boxed{1}\begin{bmatrix}\text{SYN}\begin{bmatrix}\text{COMPS}\ \langle\,\rangle\end{bmatrix}\end{bmatrix} \begin{bmatrix}\text{SYN}\begin{bmatrix}\text{VAL}\begin{bmatrix}\text{COMPS} & \langle\,\rangle \\ \text{MOD} & \langle \boxed{1} \rangle\end{bmatrix}\end{bmatrix}\end{bmatrix}$$

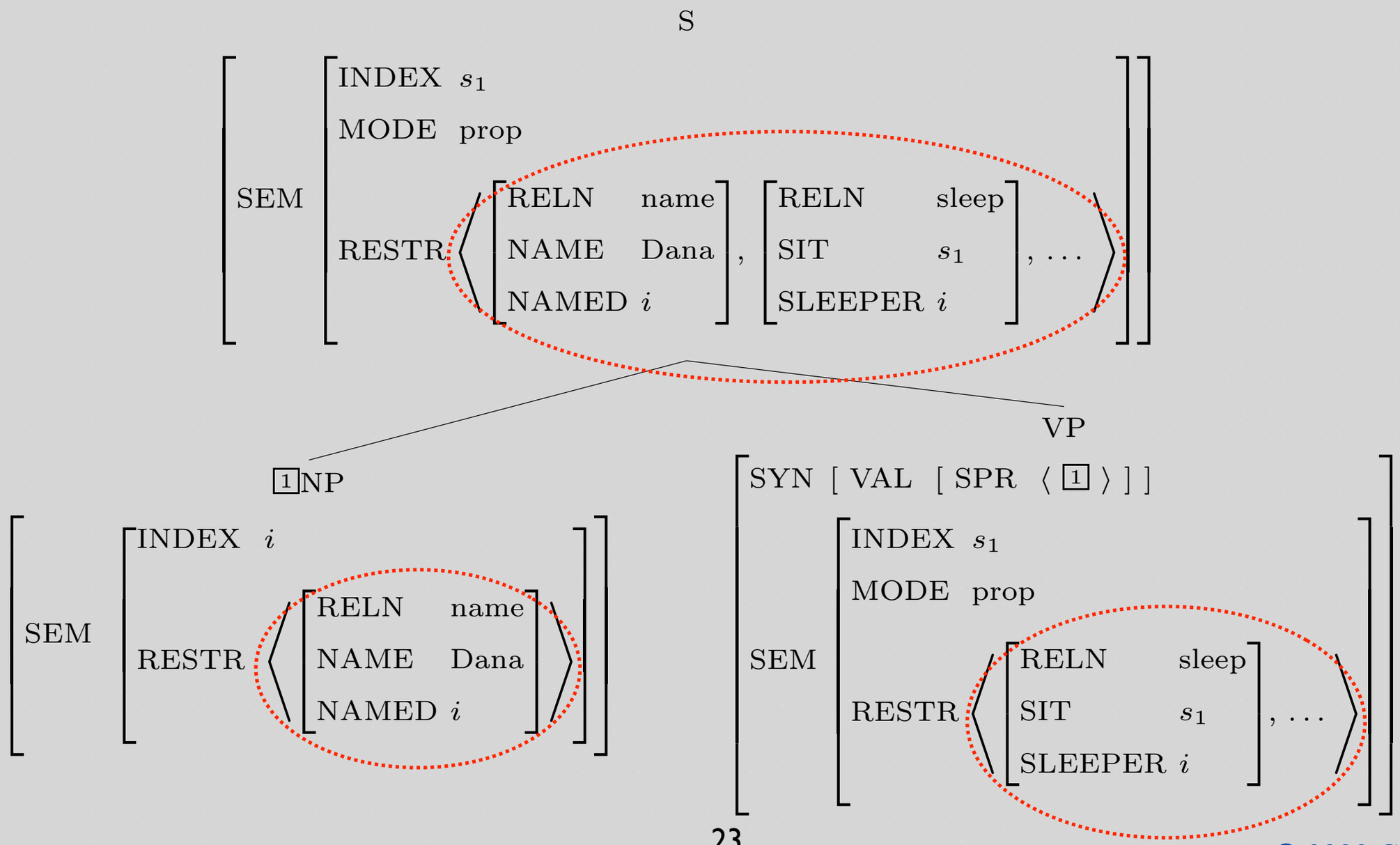
Summary: Grammar Rules ...

- identify feature structures (including the INDEX value) across daughters
- license trees which are subject to the semantic principles
  - SIP 'passes up' MODE and INDEX from head daughter



Summary: Grammar Rules ...

- identify feature structures (including the INDEX value) across daughters
- license trees which are subject to the semantic principles
  - SIP 'passes up' MODE and INDEX from head daughter
  - SCP: 'gathers up' predications (RESTR list) from all daughters



Other Aspects of Semantics

- Tense, Quantification (only touched on here)
- Modification
- Coordination
- Structural Ambiguity

Evolution of a Phrase Structure Rule

Ch. 2: NOM --> NOM PP

VP --> VP PP

Ch. 3: $\begin{bmatrix} phrase \\ \text{VAL} \quad \begin{bmatrix} \text{COMPS} & \text{itr} \\ \text{SPR} & - \end{bmatrix} \end{bmatrix} \rightarrow \mathbf{H} \begin{bmatrix} phrase \\ \text{VAL} \quad \begin{bmatrix} \text{SPR} & - \end{bmatrix} \end{bmatrix}$ PP

Ch. 4: $[phrase] \rightarrow \mathbf{H} \left[\text{VAL} \quad \left[\text{COMPS} \quad \langle\ \rangle \right] \right]$ PP

Ch. 5: $[phrase] \rightarrow \mathbf{H}\boxed{1} \left[\text{SYN} \left[\text{VAL} \left[\text{COMPS} \langle\ \rangle \right] \right] \right] \left[\text{SYN} \left[\text{VAL} \begin{bmatrix} \text{COMPS} & \langle\ \rangle \\ \text{MOD} & \langle\ \boxed{1}\ \rangle \end{bmatrix} \right] \right]$

Ch. 5 (abbreviated): $[phrase] \rightarrow \mathbf{H}\boxed{1} \left[\text{COMPS} \langle\ \rangle \right] \begin{bmatrix} \text{COMPS} & \langle\ \rangle \\ \text{MOD} & \langle\ \boxed{1}\ \rangle \end{bmatrix}$

Evolution of Another Phrase Structure Rule

Ch. 2: X --> X^{+} CONJ X

Ch. 3: $\boxed{1} \rightarrow \boxed{1}^{+} \begin{bmatrix} word \\ \text{HEAD} \quad conj \end{bmatrix} \boxed{1}$

Ch. 4: $\left[\text{VAL } \boxed{1}\right] \rightarrow \left[\text{VAL } \boxed{1}\right]^{+} \begin{bmatrix} word \\ \text{HEAD} \quad conj \end{bmatrix} \left[\text{VAL } \boxed{1}\right]$

Ch. 5: $\begin{bmatrix} \text{SYN} & [\text{VAL } \boxed{0}] \\ \text{SEM} & [\text{IND} \quad s_0] \end{bmatrix} \rightarrow$

$$\begin{bmatrix} \text{SYN} & [\text{VAL } \boxed{0}] \\ \text{SEM} & [\text{IND} \quad s_1] \end{bmatrix} \ldots \begin{bmatrix} \text{SYN} & [\text{VAL } \boxed{0}] \\ \text{SEM} & [\text{IND} \quad s_{n-1}] \end{bmatrix} \begin{bmatrix} \text{SYN} & \left[\text{HEAD} \quad conj\right] \\ \text{SEM} & \left[\begin{bmatrix} \text{IND} & s_0 \\ \text{RESTR} & \langle\left[\text{ARGS } \langle s_1 \ldots s_n \rangle\right]\rangle \end{bmatrix}\right] \end{bmatrix} \begin{bmatrix} \text{SYN} & [\text{VAL } \boxed{0}] \\ \text{SEM} & [\text{IND} \quad s_n] \end{bmatrix}$$

Ch. 5 (abbreviated):

$$\begin{bmatrix} \text{VAL} & \boxed{0} \\ \text{IND} & s_0 \end{bmatrix} \rightarrow \begin{bmatrix} \text{VAL} & \boxed{0} \\ \text{IND} & s_1 \end{bmatrix} \ldots \begin{bmatrix} \text{VAL} & \boxed{0} \\ \text{IND} & s_{n-1} \end{bmatrix} \begin{bmatrix} \text{HEAD} & conj \\ \text{IND} & s_0 \\ \text{RESTR} & \langle\left[\text{ARGS } \langle s_1 \ldots s_n \rangle\right]\rangle \end{bmatrix} \begin{bmatrix} \text{VAL} & \boxed{0} \\ \text{IND} & s_n \end{bmatrix}$$

Combining Constraints and Coordination

Coordination Rule

$$\begin{bmatrix}\text{VAL} & \boxed{0} \\ \text{IND} & s_0\end{bmatrix} \rightarrow \begin{bmatrix}\text{VAL} & \boxed{0} \\ \text{IND} & s_1\end{bmatrix} \ldots \begin{bmatrix}\text{VAL} & \boxed{0} \\ \text{IND} & s_{n-1}\end{bmatrix} \begin{bmatrix}\text{HEAD} & \textit{conj} \\ \text{IND} & s_0 \\ \text{RESTR} & \left\langle \begin{bmatrix}\text{ARGS} & \langle s_1 \ldots s_n \rangle\end{bmatrix} \right\rangle\end{bmatrix} \begin{bmatrix}\text{VAL} & \boxed{0} \\ \text{IND} & s_n\end{bmatrix}$$

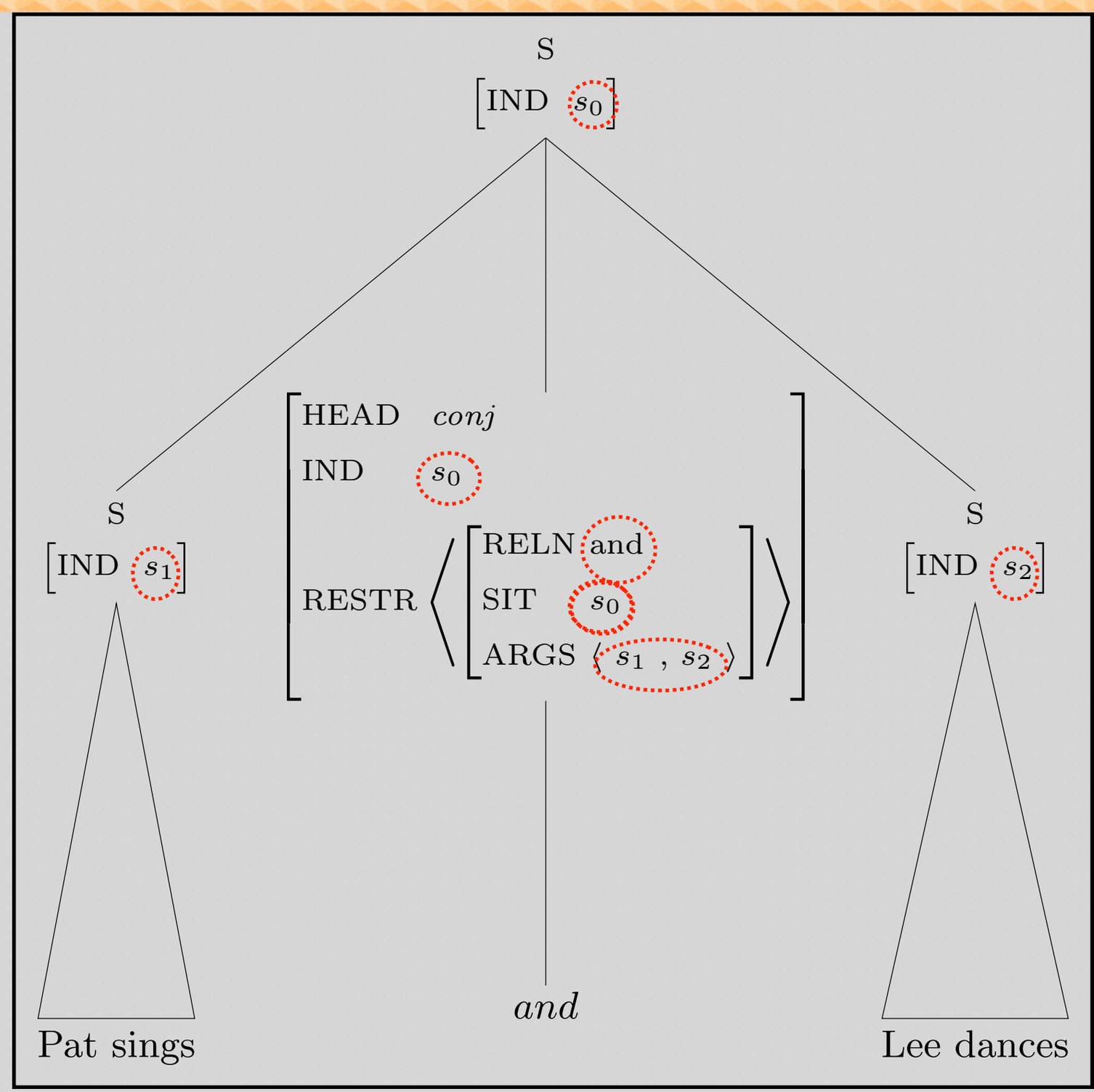
Lexical Entry for a Conjunction

$$\left\langle \text{and} \ , \begin{bmatrix}\text{SYN} & \begin{bmatrix}\text{HEAD} & \textit{conj}\end{bmatrix} \\ \text{SEM} & \begin{bmatrix}\text{INDEX} & s \\ \text{MODE} & \text{none} \\ \text{RESTR} & \left\langle \begin{bmatrix}\text{RELN} & \text{and} \\ \text{SIT} & s\end{bmatrix} \right\rangle\end{bmatrix}\end{bmatrix} \right\rangle$$

Combining Constraints and Coordination

Lexical Entry for *and*

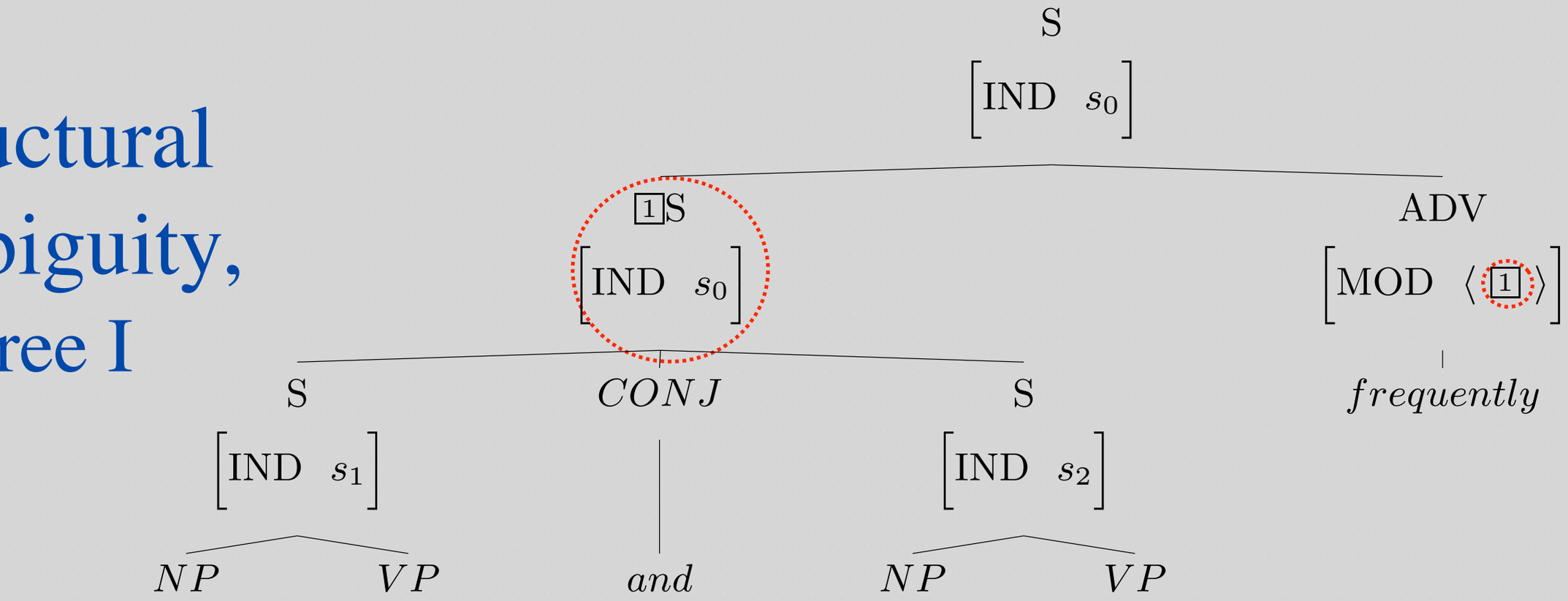
$$\left\langle \text{and} , \begin{bmatrix} \text{SYN} & \begin{bmatrix} \text{HEAD} & \textit{conj} \end{bmatrix} \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s \\ \text{MODE} & \text{none} \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{and} \\ \text{SIT} & s \end{bmatrix} \right\rangle \end{bmatrix} \end{bmatrix} \right\rangle$$



Coordination Rule

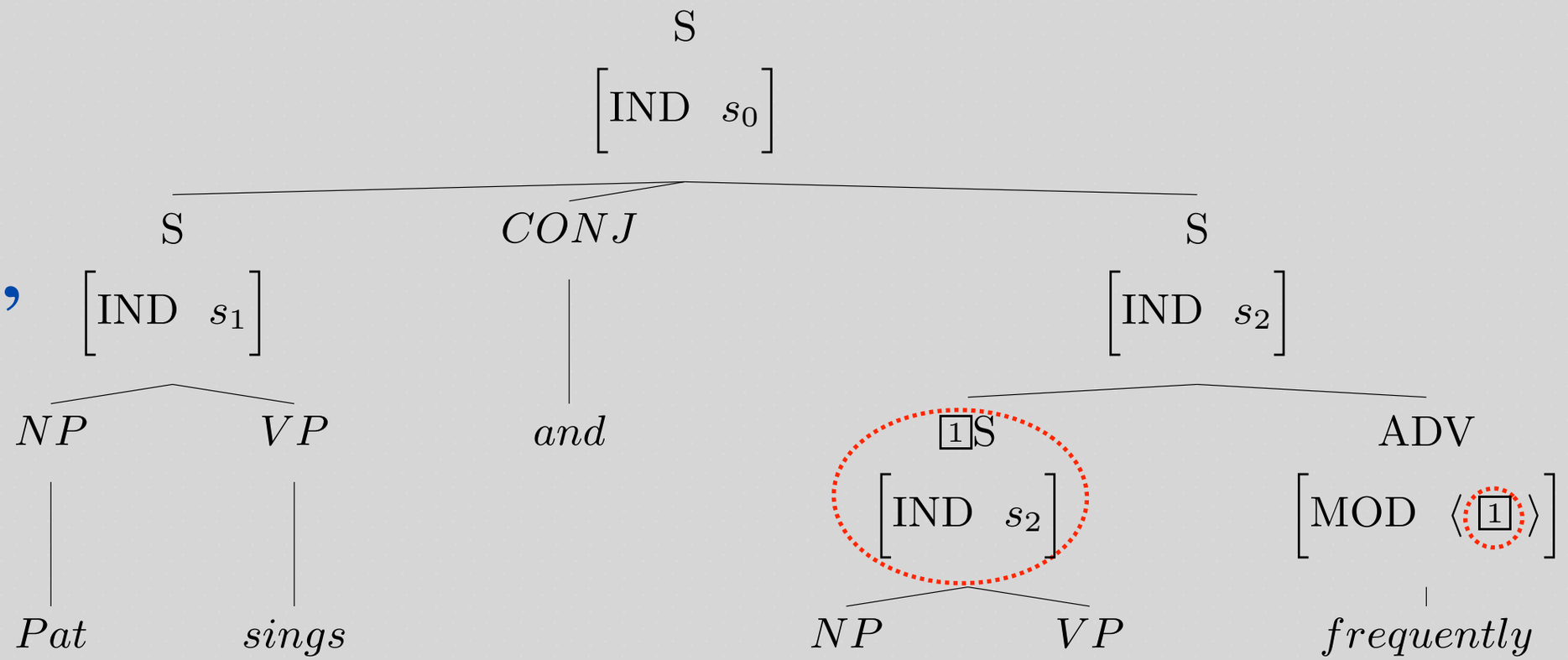
$$\begin{bmatrix} \text{VAL} & \boxed{0} \\ \text{IND} & s_0 \end{bmatrix} \rightarrow \begin{bmatrix} \text{VAL} & \boxed{0} \\ \text{IND} & s_1 \end{bmatrix} \ldots \begin{bmatrix} \text{VAL} & \boxed{0} \\ \text{IND} & s_{n-1} \end{bmatrix} \begin{bmatrix} \text{HEAD} & \textit{conj} \\ \text{IND} & s_0 \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{ARGS} & \langle s_1 \ldots s_n \rangle \end{bmatrix} \right\rangle \end{bmatrix} \begin{bmatrix} \text{VAL} & \boxed{0} \\ \text{IND} & s_n \end{bmatrix}$$

Structural Ambiguity, Tree I



$$\begin{bmatrix} \text{IND} & s_0 \\ \text{MODE} & \text{prop} \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Pat} \\ \text{NAMED} & \text{k} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{sing} \\ \text{SIT} & s_1 \\ \text{SINGER} & \text{k} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{and} \\ \text{SIT} & s_0 \\ \text{ARGS} & \langle\, s_1 \,,\, s_2 \,\rangle \end{bmatrix}, \right. \\ & \left. \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Lee} \\ \text{NAMED} & \text{j} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{dance} \\ \text{SIT} & s_2 \\ \text{DANCER} & \text{j} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{frequently} \\ \text{ARG} & s_0 \end{bmatrix} \right\rangle \end{bmatrix}$$

Structural Ambiguity, Tree II



$$\begin{bmatrix}
\text{IND} & s_0 \\
\text{MODE} & \text{prop} \\
\text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Pat} \\ \text{NAMED} & \text{k} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{sing} \\ \text{SIT} & s_1 \\ \text{SINGER} & \text{k} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{and} \\ \text{SIT} & s_0 \\ \text{ARGS} & \langle\, s_1 \,,\, s_2 \,\rangle \end{bmatrix}, \right. \\
 & \left. \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Lee} \\ \text{NAMED} & \text{j} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{dance} \\ \text{SIT} & s_2 \\ \text{DANCER} & \text{j} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{frequently} \\ \text{ARG} & s_2 \end{bmatrix} \right\rangle
\end{bmatrix}$$

Question About Structural Ambiguity

Why isn't this a possible semantic representation for the string *Pat sings and Lee dances frequently*?

$$\begin{bmatrix} \text{IND} & s_0 \\ \text{MODE} & \text{prop} \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Pat} \\ \text{NAMED} & \text{k} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{sing} \\ \text{SIT} & s_1 \\ \text{SINGER} & \text{k} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{and} \\ \text{SIT} & s_0 \\ \text{ARGS} & \langle\, s_1 \,,\, s_2 \,\rangle \end{bmatrix}, \right. \\ & \left. \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Lee} \\ \text{NAMED} & \text{j} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{dance} \\ \text{SIT} & s_2 \\ \text{DANCER} & \text{j} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{frequently} \\ \text{ARG} & s_1 \end{bmatrix} \right\rangle \end{bmatrix}$$

Semantic Compositionality

$$\begin{bmatrix}
\text{IND} & s_0 \\
\text{MODE} & \text{prop} \\
\text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Pat} \\ \text{NAMED} & \text{k} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{sing} \\ \text{SIT} & s_1 \\ \text{SINGER} & \text{k} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{and} \\ \text{SIT} & s_0 \\ \text{ARGS} & \langle\, s_1 \,,\, s_2 \,\rangle \end{bmatrix}, \right. \\
 & \left. \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Lee} \\ \text{NAMED} & \text{j} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{dance} \\ \text{SIT} & s_2 \\ \text{DANCER} & \text{j} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{frequently} \\ \text{ARG} & s_0 \end{bmatrix} \right\rangle
\end{bmatrix}$$

$$\begin{bmatrix}
\text{IND} & s_0 \\
\text{MODE} & \text{prop} \\
\text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Pat} \\ \text{NAMED} & \text{k} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{sing} \\ \text{SIT} & s_1 \\ \text{SINGER} & \text{k} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{and} \\ \text{SIT} & s_0 \\ \text{ARGS} & \langle\, s_1 \,,\, s_2 \,\rangle \end{bmatrix}, \right. \\
 & \left. \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Lee} \\ \text{NAMED} & \text{j} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{dance} \\ \text{SIT} & s_2 \\ \text{DANCER} & \text{j} \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{frequently} \\ \text{ARG} & s_2 \end{bmatrix} \right\rangle
\end{bmatrix}$$

Overview

- Some notes on the linguist's stance
- Which aspects of semantics we'll tackle
- Our formalization; Semantics Principles
- Building semantics of phrases
- Modification, coordination
- Structural ambiguity
- Next time: How the grammar works

Reading Questions

- Won't all those predicate-specific role names lead to too many features?
- Wouldn't theta-roles be better?
- Why are some more bland (e.g. ISNT)?
- Why do some nouns get NAME & NAMED and others just INST?

Reading Questions

- Are RESTR values the same as semantic frames?
- How do these RESTR values correspond to the predicate logic expressions we usually see in semantics classes?
- What are the RESTR values eventually used for? They're concatenated and passed up the tree, but I don't think this chapter gave an example of what we do with the final list in the top S node. Will they be necessary for syntactic parsing, or are we just storing them for applications that need semantic info?

Reading Questions

- What does the INDEX value do that isn't covered by RESTR (or by SIT in RESTR)?
- Does the SIP have directionality?
- In figure 52, for determiner "a" the value for INDEX is "i" and the value for BV is "i" - this seems redundant. Why have both specified?

$$\left\langle \text{a} \;, \begin{bmatrix} word \\ \text{SYN} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} det \\ \text{AGR} & 3sing \\ \text{COUNT} & + \end{bmatrix} \\ \text{VAL} & \begin{bmatrix} \text{COMPS} & \langle\,\rangle \\ \text{SPR} & \langle\,\rangle \\ \text{MOD} & \langle\,\rangle \end{bmatrix} \end{bmatrix} \\ \text{SEM} & \begin{bmatrix} \text{MODE} & \text{none} \\ \text{INDEX} & i \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \textbf{exist} \\ \text{BV} & i \end{bmatrix} \right\rangle \end{bmatrix} \end{bmatrix} \right\rangle$$

Reading Questions

- Are we better equipped now to handle ambiguity (lexical or structural) than with previous chapters?
- We've started sharing semantic information between expressions in a tree, but it does yet have any affect on the syntax? Will it later?

Reading Questions

- How does the idea of propositions being true or false tie in with the syntactic structure? On pg 135, it indicates that your proposition has to meet all of its truth conditions. But if you say "Kim is running" and it is actually someone else running in the real world, does that really change anything about the meaning of the sentence?
- What if the proposition is a paradox?

Reading Questions

- On Pg. 144 states that the order of the elements in RESTR lists has no semantic significance. Why is it said so? Wouldn't the order matter as we go from LEFT to RIGHT daughter?

Reading Questions

- Some words and phrases (such as conjunctions and determiners) cannot take the MODE value "none" instead of the four primary MODE values {prop, ques, dir, ref}. If the types that can take {prop, ques, dir, ref} and the types that can take {none} are mutually exclusive then why do they inherit from the same sem-cat with all five values.

Reading Questions

- I would also seem that semantic features can occur inside syntactic categories, as in (35) on p. 147. May I assume that it's also true vice versa?
- And more broadly, are we supposed to memorize the fast-growing number of rules, features and principles?

$$\left\langle \text{today} \;,\; \left[\begin{array}{ll} \text{SYN} & \left[\begin{array}{ll} \text{HEAD} & adv \\ \text{VAL} & \left[\begin{array}{ll} \text{MOD} & \left\langle \left[\begin{array}{ll} \text{VP} \\ \text{INDEX} & s_1 \end{array}\right] \right\rangle \\ \text{SPR} & \langle\ \rangle \\ \text{COMPS} & \langle\ \rangle \end{array}\right] \end{array}\right] \\ \text{SEM} & \left[\begin{array}{ll} \text{MODE} & \text{none} \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \textbf{today} \\ \text{ARG} & s_1 \end{array}\right] \right\rangle \end{array}\right] \end{array}\right] \right\rangle$$

Reading Questions

- Quantifiers? Scope?
  - Copestake et al 2005 “Minimal Recursion Semantics: An Introduction”
- Where can I learn more about pragmatics?
  - Levinson 2000 *Presumptive meanings: The theory of generalized conversational implicature*

Reading Questions