

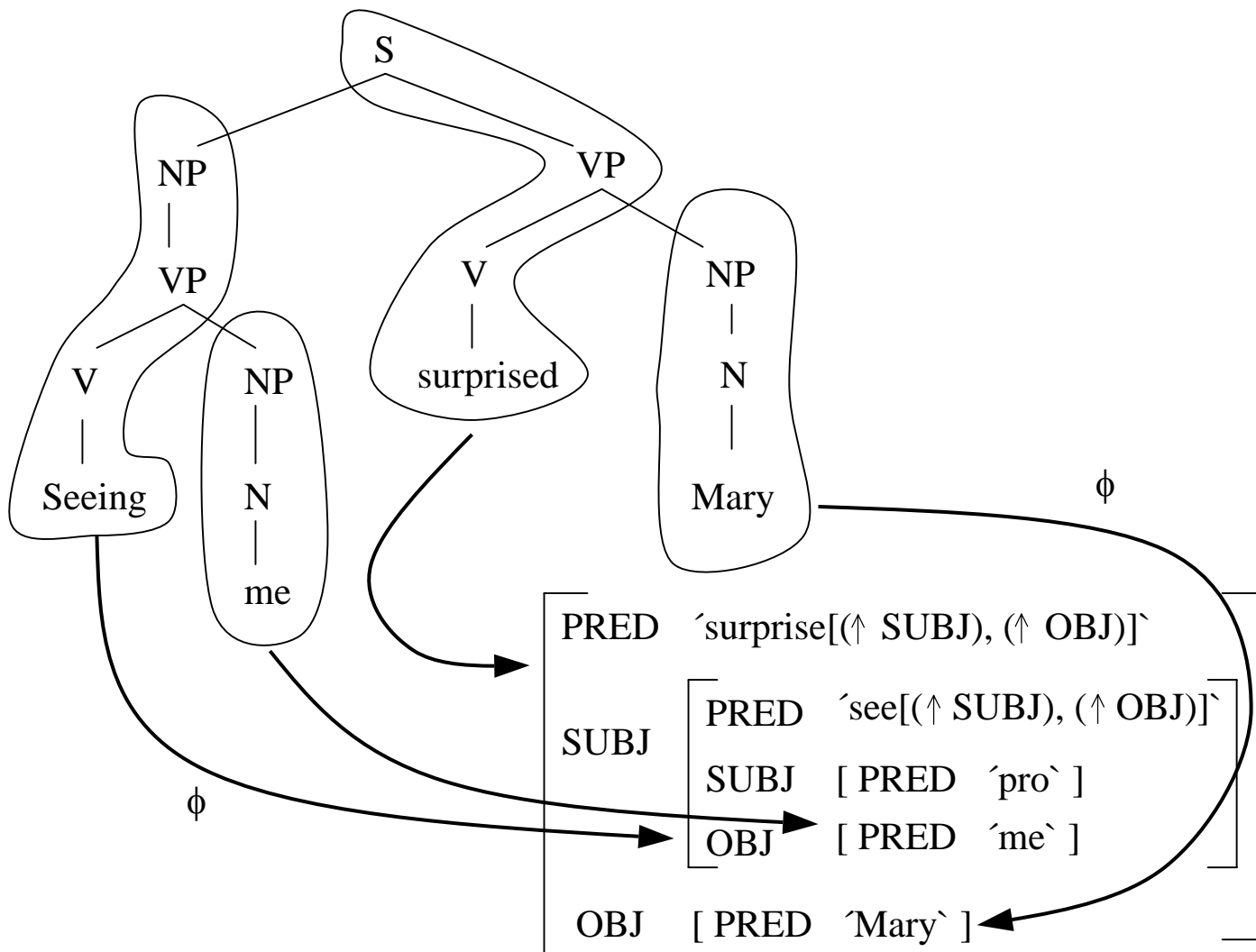
The Formal Architecture of Lexical-Functional Grammar

Structural Correspondences

- The element-wise structural correspondence allows the mother-daughter relationships in the tree to constrain the function-application properties in the f-structure;
- A structural correspondence is a function but it is not required to be **one-to-one**. Many-to-one configurations appear in many linguistic analyses: lexical heads and their dominating phrasal categories usually map to the same f-structure; another example comes from discontinuous constituents, functional units whose properties are carried by words in noncontiguous parts of the string;
- A structural correspondence also need not be **onto**

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Structural Correspondences



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Structural Correspondences

- Phrasally-based theories typically postulate an empty node on the tree side in order to represent the fact that there is a **dummy** understood subject because subjects (and predicate-argument relations) are represented in those theories by particular node configurations;
- In LFG, given that the notion of **subject** is defined in the range of correspondence, we need not postulate empty nodes in the tree;
- Instead, the f-structure's description, derived from the tree relations of the gerund in the c-structure, can have an equation that specifies directly that the subject's predicate is an anaphoric pronoun, with no node in the tree that it corresponds to = **null anaphors**.

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Structural Correspondences: Recap

- The LFG formalism presented by Kaplan and Bresnan (1982) is based on the architectural notions of **structure**, **structural description**, and **structural correspondence**;
- Within the framework, particular notational conventions are chosen to suppress unnecessary detail and make it more convenient to express certain common patterns of description;
- That is: the allowable c-structures for a sentence are specified by the rewriting rules of a context-free grammar - augmented by a Kleene-closure operator for repetitive expansions;

The Formal Architecture of Lexical-Functional Grammar Structural Correspondences: Recap (continue)

- The description of an appropriate f-structure is derived from functional annotations attached to the c-structure rules;
- The interpretation of functional annotations is defined by a special instantiation procedure that relies implicitly on the c-structure to f-structure correspondence;

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Structural Correspondences: Interpretation of Functional Annotations

- $S \dashrightarrow \quad \text{NP} \quad \quad \text{VP}$
 $(\phi(M(n)) \text{ SUBJ}) = \phi(n) \quad (\phi(M(n)) = \phi(n))$
- The f-structure corresponding to the NP's mother applies to SUBJ to give the f-structure corresponding to the NP;
- The f-structure corresponding to the mother of the VP, namely the S node, is also the f-structure corresponding to the VP;
- The conjunction of these constraints across the whole c-structure, with actual nodes substituted for the generic n , is the desired f-structure description.

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Structural Correspondences: Interpretation of Functional Annotations

- $(\uparrow \text{SUBJ}) = \downarrow$
- „the matching NP node’s mother’s f-structure’s subject is the matching node’s f-structure“;
- The symbol \uparrow abbreviates the complex term $(\phi(M(n)))$, the composition of the structural correspondence with the mother function;
- The symbol \downarrow stands for $\phi(n)$, the f-structure corresponding to the matching node;
- The method of generating range descriptions by analyzing and matching the properties of domain structures is called **description by analysis**

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Extending the description language

- Intersection and complementation operators in the c-structure rules;
- f -precedence relation;
- Functional Uncertainty

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Extending the Configuration of Correspondences

