

Syntax 1: Argument Realization

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The Argument Realization Principle

$$word \Rightarrow \left[\begin{array}{l} \text{SYNSEM:LOC:CAT} \left[\begin{array}{l} \text{SUBJ } \boxed{A} \\ \text{SPR } \boxed{B} \\ \text{COMPS } \boxed{C} \end{array} \right] \\ \text{ARG-ST} \quad \boxed{A} \oplus \boxed{B} \oplus \boxed{C} \end{array} \right]$$

ARG-ST and Valence Constraints for words of the 7 Parts of Speech

Verbs

$$\left[\begin{array}{l} word \\ \text{SYNSEM:LOC:CAT} \left[\text{HEAD } v \right] \end{array} \right] \Rightarrow \left[\begin{array}{l} word \\ \text{SYNSEM:LOC:CAT} \left[\begin{array}{l} \text{SUBJ } \langle [] \rangle \\ \text{SPR } \langle \rangle \\ \text{ARG-ST} \quad \langle \text{NP } \dots \rangle \end{array} \right] \end{array} \right]$$

Nouns

Names and Pronouns

$$\left[\begin{array}{l} word \\ \text{SYNSEM:LOC:CAT} \left[\text{HEAD } n \right] \end{array} \right] \Rightarrow \left[\begin{array}{l} word \\ \text{SYNSEM:LOC:CAT} \left[\begin{array}{l} \text{SUBJ } \langle \rangle \\ \text{SPR } \langle \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \\ \text{ARG-ST} \quad \langle \rangle \end{array} \right]$$

Common Nouns

$$\left[\begin{array}{l} word \\ \text{SYNSEM:LOC:CAT} \left[\text{HEAD } n \right] \end{array} \right] \Rightarrow \left[\begin{array}{l} word \\ \text{SYNSEM:LOC:CAT} \left[\begin{array}{l} \text{SUBJ } \langle \rangle \\ \text{SPR } \langle [] \rangle \\ \text{ARG-ST} \quad \langle \text{D } \dots \rangle \end{array} \right] \end{array} \right]$$

Adjectives

$$\left[\begin{array}{l} word \\ \text{SYNSEM:LOC:CAT} \left[\text{HEAD } a \right] \end{array} \right] \Rightarrow \left[\begin{array}{l} word \\ \text{SYNSEM:LOC:CAT} \left[\begin{array}{l} \text{SUBJ } \langle [] \rangle \\ \text{SPR } \langle [] \rangle \\ \text{ARG-ST} \quad \langle \text{NP, ADVB } \dots \rangle \end{array} \right] \end{array} \right]$$

Determiners

$$\left[\begin{array}{l} word \\ \text{SYNSEM:LOC:CAT} \left[\text{HEAD } d \right] \end{array} \right] \Rightarrow \left[\begin{array}{l} word \\ \text{SYNSEM:LOC:CAT} \left[\begin{array}{l} \text{SUBJ } \langle \rangle \\ \text{SPR } \langle \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \\ \text{ARG-ST} \quad \langle \rangle \end{array} \right]$$

Adverbs

$$\left[\begin{array}{c} word \\ \text{SYNSEM:LOC:CAT} \end{array} \left[\text{HEAD } adv \right] \right] \Rightarrow \left[\begin{array}{c} word \\ \text{SYNSEM:LOC:CAT} \\ \text{ARG-ST} \end{array} \left[\begin{array}{c} \text{SUBJ } \langle \rangle \\ \text{SPR } \langle \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \right]$$

Prepositions

Argument-marking Prepositions

$$\left[\begin{array}{c} word \\ \text{SYNSEM:LOC:CAT} \end{array} \left[\text{HEAD } p \right] \right] \Rightarrow \left[\begin{array}{c} word \\ \text{SYNSEM:LOC:CAT} \\ \text{ARG-ST} \end{array} \left[\begin{array}{c} \text{SUBJ } \langle \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \right]$$

Predicative Prepositions

$$\left[\begin{array}{c} word \\ \text{SYNSEM:LOC:CAT} \end{array} \left[\text{HEAD } p \right] \right] \Rightarrow \left[\begin{array}{c} word \\ \text{SYNSEM:LOC:CAT} \\ \text{ARG-ST} \end{array} \left[\begin{array}{c} \text{SUBJ } \langle [] \rangle \\ \text{SPR } \langle [] \rangle \end{array} \right] \right]$$

Complementizers

$$\left[\begin{array}{c} word \\ \text{SYNSEM:LOC:CAT} \end{array} \left[\text{HEAD } c \right] \right] \Rightarrow \left[\begin{array}{c} word \\ \text{SYNSEM:LOC:CAT} \\ \text{ARG-ST} \end{array} \left[\begin{array}{c} \text{SUBJ } \langle \rangle \\ \text{SPR } \langle \rangle \end{array} \right] \right]$$