

Grammar 8

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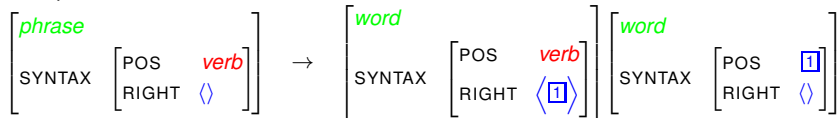
The phrase structure rules of Grammar 7

Sentences:

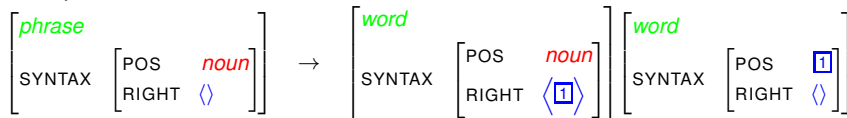
$$\begin{bmatrix} \textit{phrase} \\ \text{SYNTAX} \quad \textit{sentence} \end{bmatrix} \rightarrow \begin{bmatrix} \textit{word} \\ \text{SYNTAX} \quad \textit{noun} \end{bmatrix} \begin{bmatrix} \text{SYNTAX} \quad \begin{bmatrix} \textit{verb} \\ \text{RIGHT} \langle \rangle \end{bmatrix} \end{bmatrix}$$

The phrase structure rules of Grammar 7

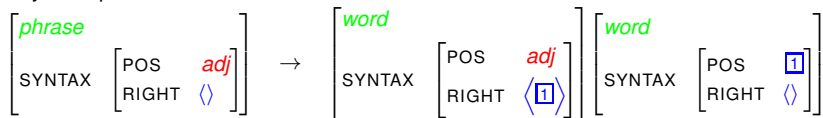
Verb phrases:



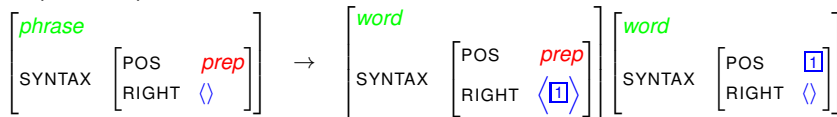
Noun phrases:



Adjective phrases:

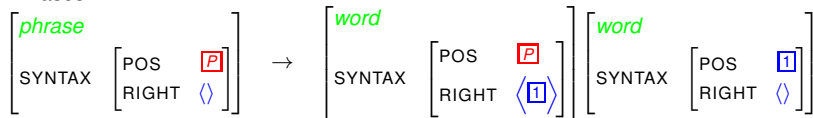


Prepositional phrases:



Only a single phrase rule is needed

Phrases:



Allowing both words and phrases on the right-hand side

Phrases:

$$\left[\begin{array}{c} \text{phrase} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{P} \\ \text{RIGHT} & \langle \rangle \end{array} \right] \end{array} \right] \rightarrow \left[\begin{array}{c} \text{word} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{P} \\ \text{RIGHT} & \langle \boxed{1} \rangle \end{array} \right] \end{array} \right] \left[\begin{array}{c} \text{word} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{1} \\ \text{RIGHT} & \langle \rangle \end{array} \right] \end{array} \right]$$

$$\left[\begin{array}{c} \text{phrase} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{P} \\ \text{RIGHT} & \langle \rangle \end{array} \right] \end{array} \right] \rightarrow \left[\begin{array}{c} \text{word} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{P} \\ \text{RIGHT} & \langle \boxed{1} \rangle \end{array} \right] \end{array} \right] \left[\begin{array}{c} \text{phrase} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{1} \\ \text{RIGHT} & \langle \rangle \end{array} \right] \end{array} \right]$$

Words and *phrases* are both *signs*. This allows us to replace the two rules above by the simpler one below:

$$\left[\begin{array}{c} \text{phrase} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{P} \\ \text{RIGHT} & \langle \rangle \end{array} \right] \end{array} \right] \rightarrow \left[\begin{array}{c} \text{word} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{P} \\ \text{RIGHT} & \langle \boxed{1} \rangle \end{array} \right] \end{array} \right] \left[\begin{array}{c} \text{sign} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{1} \\ \text{RIGHT} & \langle \rangle \end{array} \right] \end{array} \right]$$

Bringing the sentence-rule into the same form as the phrase rule

Phrases:

$$\left[\begin{array}{c} \text{phrase} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{P} \\ \text{RIGHT} & \langle \rangle \end{array} \right] \end{array} \right] \rightarrow \left[\begin{array}{c} \text{word} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{P} \\ \text{RIGHT} & \langle \boxed{1} \rangle \end{array} \right] \end{array} \right] \left[\begin{array}{c} \text{sign} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \boxed{1} \\ \text{RIGHT} & \langle \rangle \end{array} \right] \end{array} \right]$$

Sentences:

$$\left[\begin{array}{c} \text{phrase} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \text{sentence} \\ \text{RIGHT} & \langle \rangle \end{array} \right] \end{array} \right] \rightarrow \left[\begin{array}{c} \text{word} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \text{noun} \\ \text{RIGHT} & \langle \rangle \end{array} \right] \end{array} \right] \left[\begin{array}{c} \text{sign} \\ \text{SYNTAX} \left[\begin{array}{cc} \text{POS} & \text{verb} \\ \text{RIGHT} & \langle \rangle \end{array} \right] \end{array} \right]$$

Note: *sign* = *phrase* or *word*.

The phrase structure rules of Grammar 8

Sentences:

$$\left[\begin{array}{c} \text{phrase} \\ \text{SYNTAX} \left[\begin{array}{c} \text{POS} \\ \text{RIGHT} \end{array} \text{ sentence} \right] \end{array} \right] \rightarrow \left[\begin{array}{c} \text{word} \\ \text{SYNTAX} \left[\begin{array}{c} \text{POS} \\ \text{RIGHT} \end{array} \text{ noun} \right] \end{array} \right] \left[\begin{array}{c} \text{sign} \\ \text{SYNTAX} \left[\begin{array}{c} \text{POS} \\ \text{RIGHT} \end{array} \text{ verb} \right] \end{array} \right]$$

Phrases:

$$\left[\begin{array}{c} \text{phrase} \\ \text{SYNTAX} \left[\begin{array}{c} \text{POS} \\ \text{RIGHT} \end{array} \boxed{P} \right] \end{array} \right] \rightarrow \left[\begin{array}{c} \text{word} \\ \text{SYNTAX} \left[\begin{array}{c} \text{POS} \\ \text{RIGHT} \end{array} \boxed{P} \right] \end{array} \right] \left[\begin{array}{c} \text{sign} \\ \text{SYNTAX} \left[\begin{array}{c} \text{POS} \\ \text{RIGHT} \end{array} \boxed{1} \right] \end{array} \right]$$

Excercises

- 1 Parse all phrasal and sentential test items of Grammar 8 and notice carefully which rules are used to combine the head and the element it selects to its right!