ACE Editor Grammar

- Tobias Kuhn, 17 September 2010 -

Below, the grammar rules of the ACE Editor grammar are shown:

Texts and Sentences

'text' stands for a complete text consisting of an arbitrary number of complete sentences (including zero):

(1) $\quad text \;\xrightarrow{\;\cdot\;}$

(2) $\quad text \;\xrightarrow{\;\cdot\;}\quad complete\_sentence \quad text$

A complete sentence is represented by the category 'complete_sentence' and is either a declarative sentence that ends with a full stop or a question ending with a question mark:

(3) $\quad complete\_sentence \;\xrightarrow{\;\cdot\;}\quad sentence \quad [\,.\,]$

(4) $\quad complete\_sentence \;\xrightarrow{\;\sim\;}\quad /\!/ \quad simple\_sentence\_2\begin{pmatrix}\text{whin:}- \\ \text{whout:}+\end{pmatrix}\quad [\,?\,]$

General sentences are represented by 'sentence':

(5) $\quad sentence \;\xrightarrow{\;\cdot\;}\quad sentence\_coord\_1$

(6) $\quad sentence \;\xrightarrow{\;\sim\;}\quad /\!/ \quad [\,\text{for every}\,]\quad nc\begin{pmatrix}\text{subj:}-\end{pmatrix}\quad sentence\_coord\_1$

(7) $\quad sentence \;\xrightarrow{\;\sim\;}\quad /\!/ \quad [\,\text{if}\,]\quad sentence\_coord\_1 \quad [\,\text{then}\,]\quad sentence\_coord\_1$

Sentences can be coordinated using "or" ('sentence_coord_1') and "and" ('sentence_coord_2'):

(8) $\quad sentence\_coord\_1 \;\xrightarrow{\;\cdot\;}\quad sentence\_coord\_2$

(9) $\quad sentence\_coord\_1 \;\xrightarrow{\;\sim\;}\quad /\!/ \quad sentence\_coord\_2 \quad [\,\text{or}\,]\quad sentence\_coord\_1$

(10) $\quad sentence\_coord\_2 \;\xrightarrow{\;\cdot\;}\quad simple\_sentence\_1$

(11) $\quad sentence\_coord\_2 \;\xrightarrow{\;\cdot\;}\quad simple\_sentence\_1 \quad [\,\text{and}\,]\quad sentence\_coord\_2$

Uncoordinated sentences are represented in two levels by 'simple_sentence_1' and 'simple_sentence_2':

(12) $\quad simple\_sentence\_1 \;\xrightarrow{\;\sim\;}\quad /\!/ \quad [\,\text{it is false that}\,]\quad simple\_sentence\_2\begin{pmatrix}\text{whin:}- \\ \text{whout:}-\end{pmatrix}$

(13) $\quad simple\_sentence\_1 \;\xrightarrow{\;\cdot\;}\quad [\,\text{there is}\,]\quad np\begin{pmatrix}\text{case: nom}\\ \text{def:}-\\ \text{exist:}+\\ \text{pl:}-\\ \text{subj:}-\\ \text{whin:}-\\ \text{whout:}-\end{pmatrix}$

(14) $\quad simple\_sentence\_1 \;\xrightarrow{\;\cdot\;}\quad [\,\text{there is}\,]\quad np\begin{pmatrix}\text{case: nom}\\ \text{def:}-\\ \text{exist:}+\\ \text{pl:}-\\ \text{subj:}-\\ \text{whin:}-\\ \text{whout:}-\end{pmatrix}\quad [\,\text{such that}\,]\quad simple\_sentence\_1$

(15) $\quad simple\_sentence\_1 \;\xrightarrow{\;\cdot\;}\quad [\,\text{there are}\,]\quad np\begin{pmatrix}\text{case: nom}\\ \text{def:}-\\ \text{exist:}+\\ \text{pl:}+\\ \text{subj:}-\\ \text{whin:}-\\ \text{whout:}-\end{pmatrix}$

(16) $\quad simple\_sentence\_1 \;\xrightarrow{\;\cdot\;}\quad simple\_sentence\_2\begin{pmatrix}\text{whin:}- \\ \text{whout:}-\end{pmatrix}$

(17) $\quad simple\_sentence\_2\begin{pmatrix}\text{whin:}\boxed{1} \\ \text{whout:}\boxed{2}\end{pmatrix} \;\xrightarrow{\;\sim\;}\quad np\begin{pmatrix}\text{case: nom}\\ \text{id:}\boxed{3}\\ \text{pl:}\boxed{4}\\ \text{subj:}-\\ \text{whin:}\boxed{1}\\ \text{whout:}\boxed{5}\end{pmatrix}\quad vp\_coord\_1\begin{pmatrix}\text{pl:}\boxed{4}\\ \text{subj:}\boxed{3}\\ \text{whin:}\boxed{5}\\ \text{whout:}\boxed{2}\end{pmatrix}$

Verb Phrases

Like sentences, verb phrases can be coordinated using "or" ('vp_coord_1') and "and" ('vp_coord_2'):

(18) $\quad vp\_coord\_1\begin{pmatrix}\text{pl:}\boxed{1}\\ \text{subj:}\boxed{2}\\ \text{whin:}\boxed{3}\\ \text{whout:}\boxed{4}\end{pmatrix} \;\xrightarrow{\;\cdot\;}\quad vp\_coord\_2\begin{pmatrix}\text{pl:}\boxed{1}\\ \text{subj:}\boxed{2}\\ \text{whin:}\boxed{3}\\ \text{whout:}\boxed{4}\end{pmatrix}$

(19) $\quad vp\_coord\_1\begin{pmatrix}\text{pl:}\boxed{1}\\ \text{subj:}\boxed{2}\\ \text{whin:}\boxed{3}\\ \text{whout:}\boxed{4}\end{pmatrix} \;\xrightarrow{\;\sim\;}\quad /\!/ \quad vp\_coord\_2\begin{pmatrix}\text{pl:}\boxed{1}\\ \text{subj:}\boxed{2}\\ \text{whin:}\boxed{3}\\ \text{whout:}\boxed{5}\end{pmatrix}\quad [\,\text{or}\,]\quad vp\_coord\_1\begin{pmatrix}\text{pl:}\boxed{1}\\ \text{subj:}\boxed{2}\\ \text{whin:}\boxed{5}\\ \text{whout:}\boxed{4}\end{pmatrix}$

(20) $\quad vp\_coord\_2\begin{pmatrix}\text{pl:}\boxed{1}\\ \text{subj:}\boxed{2}\\ \text{whin:}\boxed{3}\\ \text{whout:}\boxed{4}\end{pmatrix} \;\xrightarrow{\;\cdot\;}\quad vp\begin{pmatrix}\text{pl:}\boxed{1}\\ \text{subj:}\boxed{2}\\ \text{whin:}\boxed{3}\\ \text{whout:}\boxed{4}\end{pmatrix}$

$$(21) \quad vp\_coord\_2 \begin{pmatrix} pl: \boxed{1} \\ subj: \boxed{2} \\ whin: \boxed{3} \\ whout: \boxed{4} \end{pmatrix} \xrightarrow{\cdot} vp \begin{pmatrix} pl: \boxed{1} \\ subj: \boxed{2} \\ whin: \boxed{3} \\ whout: \boxed{5} \end{pmatrix} [\,and\,] \quad vp\_coord\_2 \begin{pmatrix} pl: \boxed{1} \\ subj: \boxed{2} \\ whin: \boxed{5} \\ whout: \boxed{4} \end{pmatrix}$$

Uncoordinated verb phrases represented by 'vp' can use an auxiliary verb and can have verb phrase modifiers:

$$(22) \quad vp \begin{pmatrix} exist: \boxed{1} \\ pl: \boxed{2} \\ rel: \boxed{3} \\ subj: \boxed{4} \\ whin: \boxed{5} \\ whout: \boxed{6} \end{pmatrix} \xrightarrow{\sim} aux \begin{pmatrix} be: \boxed{7} \\ exist: \boxed{1} \\ pl: \boxed{2} \end{pmatrix} v \begin{pmatrix} be: \boxed{7} \\ copula: \boxed{8} \\ embv: \boxed{9} \\ exist: \boxed{1} \\ pl: \boxed{2} \\ rel: \boxed{3} \\ subj: \boxed{4} \\ vform: inf \\ whin: \boxed{5} \\ whout: \boxed{10} \end{pmatrix} vmod \begin{pmatrix} copula: \boxed{8} \\ embv: \boxed{9} \\ subj: \boxed{4} \\ whin: \boxed{10} \\ whout: \boxed{6} \end{pmatrix}$$

$$(23) \quad vp \begin{pmatrix} exist: + \\ pl: \boxed{1} \\ rel: \boxed{2} \\ subj: \boxed{3} \\ whin: \boxed{4} \\ whout: \boxed{5} \end{pmatrix} \xrightarrow{\sim} v \begin{pmatrix} be: - \\ copula: \boxed{6} \\ embv: \boxed{7} \\ exist: + \\ pl: \boxed{1} \\ rel: \boxed{2} \\ subj: \boxed{3} \\ vform: fin \\ whin: \boxed{4} \\ whout: \boxed{8} \end{pmatrix} vmod \begin{pmatrix} copula: \boxed{6} \\ embv: \boxed{7} \\ subj: \boxed{3} \\ whin: \boxed{8} \\ whout: \boxed{5} \end{pmatrix}$$

The category 'v' represents the main verb or - if "be" is used as a copula verb - the complementing noun phrase or adjective complement:

$$(24) \quad v \begin{pmatrix} be: - \\ copula: - \\ pl: \boxed{1} \\ vform: \boxed{2} \\ whin: \boxed{3} \\ whout: \boxed{3} \end{pmatrix} \xrightarrow{\cdot} verb \begin{pmatrix} be: - \\ pl: \boxed{1} \\ vcat: itr \\ vform: \boxed{2} \end{pmatrix}$$

$$(25) \quad v \begin{pmatrix} be: - \\ copula: - \\ embv: \boxed{1} \\ pl: \boxed{2} \\ rel: \boxed{3} \\ subj: \boxed{4} \\ vform: \boxed{5} \\ whin: \boxed{6} \\ whout: \boxed{7} \end{pmatrix} \xrightarrow{\cdot} verb \begin{pmatrix} be: - \\ pl: \boxed{2} \\ vcat: tr \\ vform: \boxed{5} \end{pmatrix} np \begin{pmatrix} case: acc \\ embv: \boxed{1} \\ rel: \boxed{3} \\ subj: \boxed{4} \\ vcat: tr \\ whin: \boxed{6} \\ whout: \boxed{7} \end{pmatrix}$$

$$(26) \quad v \begin{pmatrix} be: + \\ copula: - \\ embv: \boxed{1} \\ rel: \boxed{2} \\ subj: \boxed{3} \\ whin: \boxed{4} \\ whout: \boxed{5} \end{pmatrix} \xrightarrow{\cdot} verb \begin{pmatrix} be: + \\ vcat: tr \end{pmatrix} [\,by\,] \quad np \begin{pmatrix} case: acc \\ copula: - \\ embv: \boxed{1} \\ rel: \boxed{2} \\ subj: \boxed{3} \\ whin: \boxed{4} \\ whout: \boxed{5} \end{pmatrix}$$

$$(27) \quad v \begin{pmatrix} be: + \\ copula: + \\ embv: \boxed{1} \\ rel: \boxed{2} \\ subj: \boxed{3} \\ whin: \boxed{4} \\ whout: \boxed{5} \end{pmatrix} \xrightarrow{\cdot} np \begin{pmatrix} case: acc \\ copula: + \\ embv: \boxed{1} \\ of: + \\ pl: - \\ rel: \boxed{2} \\ subj: \boxed{3} \\ whin: \boxed{4} \\ whout: \boxed{5} \end{pmatrix}$$

$$(28) \quad v \begin{pmatrix} be: + \\ copula: + \\ embv: \boxed{1} \\ pl: - \\ rel: \boxed{2} \\ subj: \boxed{3} \\ whin: \boxed{4} \\ whout: \boxed{5} \end{pmatrix} \xrightarrow{\cdot} np \begin{pmatrix} case: acc \\ copula: + \\ embv: \boxed{1} \\ of: - \\ pl: - \\ rel: \boxed{2} \\ subj: \boxed{3} \\ whin: \boxed{4} \\ whout: \boxed{5} \end{pmatrix}$$

$$(29) \quad v \begin{pmatrix} be: + \\ copula: + \\ whin: \boxed{1} \\ whout: \boxed{1} \end{pmatrix} \xrightarrow{\cdot} adj\_coord$$

$$(30) \quad v \begin{pmatrix} be: + \\ copula: + \\ embv: \boxed{1} \\ rel: \boxed{2} \\ subj: \boxed{3} \\ whin: \boxed{4} \\ whout: \boxed{5} \end{pmatrix} \xrightarrow{\cdot} adjc \begin{pmatrix} embv: \boxed{1} \\ rel: \boxed{2} \\ subj: \boxed{3} \\ whin: \boxed{4} \\ whout: \boxed{5} \end{pmatrix}$$

Noun Phrases

Noun phrases are represented by 'np' and can consist of proper names, variables, pronouns, and different noun constructs:

$$(31) \quad np \begin{pmatrix} def: + \\ embv: \boxed{1} \\ exist: + \\ id: \boxed{2} \\ of: - \\ pl: - \\ rel: \boxed{3} \\ whin: \boxed{4} \\ whout: \boxed{5} \end{pmatrix} \xrightarrow{\cdot} prop \begin{pmatrix} gender: \boxed{6} \\ human: \boxed{7} \\ id: \boxed{2} \end{pmatrix} \gg \begin{pmatrix} gender: \boxed{6} \\ hasvar: - \\ human: \boxed{7} \\ id: \boxed{2} \\ type: prop \end{pmatrix} relcl \begin{pmatrix} embv: \boxed{1} \\ human: \boxed{7} \\ rel: \boxed{3} \\ subj: \boxed{2} \\ whin: \boxed{4} \\ whout: \boxed{5} \end{pmatrix}$$

$$(32) \quad np \begin{pmatrix} def: + \\ exist: + \\ id: \boxed{1} \\ of: - \\ pl: - \\ whin: \boxed{2} \\ whout: \boxed{2} \end{pmatrix} \xrightarrow{\cdot} \#\boxed{1} \quad newvar \begin{pmatrix} var: \boxed{3} \end{pmatrix} > \begin{pmatrix} hasvar: + \\ id: \boxed{1} \\ type: var \\ var: \boxed{3} \end{pmatrix}$$

$$(33) \quad np \begin{pmatrix} \text{def:} + \\ \text{exist:} + \\ \text{id:} \boxed{1} \\ \text{of:} - \\ \text{pl:} - \\ \text{whin:} \boxed{2} \\ \text{whout:} \boxed{2} \end{pmatrix} \xrightarrow{\cdot} \underline{def\_noun\_sg}\Big(\text{noun:} \boxed{3}\Big) \; \underline{ref}\Big(\text{text:} \boxed{4}\Big) \; < \begin{pmatrix} \text{gender:} \boxed{5} \\ \text{hasvar:} + \\ \text{human:} \boxed{6} \\ \text{id:} \boxed{1} \\ \text{noun:} \boxed{3} \\ \text{type: noun} \\ \text{var:} \boxed{4} \end{pmatrix} > \begin{pmatrix} \text{gender:} \boxed{5} \\ \text{hasvar:} - \\ \text{human:} \boxed{6} \\ \text{id:} \boxed{1} \\ \text{type: ref} \end{pmatrix}$$

$$(34) \quad np \begin{pmatrix} \text{def:} + \\ \text{exist:} + \\ \text{id:} \boxed{1} \\ \text{of:} - \\ \text{pl:} - \\ \text{whin:} \boxed{2} \\ \text{whout:} \boxed{2} \end{pmatrix} \xrightarrow{\cdot} \underline{def\_noun\_sg}\Big(\text{noun:} \boxed{3}\Big) \; < \begin{pmatrix} \text{gender:} \boxed{4} \\ \text{human:} \boxed{5} \\ \text{id:} \boxed{1} \\ \text{noun:} \boxed{3} \\ \text{type: noun} \end{pmatrix} > \begin{pmatrix} \text{gender:} \boxed{4} \\ \text{hasvar:} - \\ \text{human:} \boxed{5} \\ \text{id:} \boxed{1} \\ \text{type: ref} \end{pmatrix}$$

$$(35) \quad np \begin{pmatrix} \text{def:} + \\ \text{exist:} + \\ \text{id:} \boxed{1} \\ \text{of:} - \\ \text{pl:} - \\ \text{whin:} \boxed{2} \\ \text{whout:} \boxed{2} \end{pmatrix} \xrightarrow{\cdot} \underline{ref}\Big(\text{text:} \boxed{3}\Big) \; < \begin{pmatrix} \text{gender:} \boxed{4} \\ \text{hasvar:} + \\ \text{human:} \boxed{5} \\ \text{id:} \boxed{1} \\ \text{var:} \boxed{3} \end{pmatrix} > \begin{pmatrix} \text{gender:} \boxed{4} \\ \text{hasvar:} - \\ \text{human:} \boxed{5} \\ \text{id:} \boxed{1} \\ \text{type: ref} \end{pmatrix}$$

$$(36) \quad np \begin{pmatrix} \text{def:} + \\ \text{exist:} + \\ \text{id:} \boxed{1} \\ \text{of:} - \\ \text{pl:} - \\ \text{refl:} + \\ \text{subj:} \boxed{1} \\ \text{whin:} \boxed{2} \\ \text{whout:} \boxed{2} \end{pmatrix} \xrightarrow{\cdot} \underline{pron}\begin{pmatrix} \text{gender:} \boxed{3} \\ \text{human:} \boxed{4} \\ \text{refl:} + \end{pmatrix} \; < \begin{pmatrix} \text{gender:} \boxed{3} \\ \text{human:} \boxed{4} \\ \text{id:} \boxed{1} \end{pmatrix}$$

$$(37) \quad np \begin{pmatrix} \text{case:} \boxed{1} \\ \text{def:} + \\ \text{exist:} + \\ \text{id:} \boxed{2} \\ \text{of:} - \\ \text{pl:} - \\ \text{refl:} - \\ \text{subj:} \boxed{3} \\ \text{whin:} \boxed{4} \\ \text{whout:} \boxed{4} \end{pmatrix} \xrightarrow{\cdot} \underline{pron}\begin{pmatrix} \text{case:} \boxed{1} \\ \text{gender:} \boxed{5} \\ \text{human:} \boxed{6} \\ \text{refl:} - \end{pmatrix} \; <^{+}\begin{pmatrix} \text{gender:} \boxed{5} \\ \text{human:} \boxed{6} \\ \text{id:} \boxed{2} \end{pmatrix} {}^{-}\Big(\text{id:} \boxed{3}\Big) > \begin{pmatrix} \text{gender:} \boxed{5} \\ \text{hasvar:} - \\ \text{human:} \boxed{6} \\ \text{id:} \boxed{2} \\ \text{type: pron} \end{pmatrix}$$

$$(38) \quad np \begin{pmatrix} \text{embv:} \boxed{1} \\ \text{exist:} \boxed{2} \\ \text{id:} \boxed{3} \\ \text{of:} \boxed{4} \\ \text{pl:} - \\ \text{rel:} \boxed{5} \\ \text{subj:} \boxed{6} \\ \text{whin:} \boxed{7} \\ \text{whout:} \boxed{8} \end{pmatrix} \xrightarrow{\cdot} quant\Big(\text{exist:} \boxed{2}\Big) \quad nc \begin{pmatrix} \text{embv:} \boxed{1} \\ \text{id:} \boxed{3} \\ \text{of:} \boxed{4} \\ \text{rel:} \boxed{5} \\ \text{subj:} \boxed{6} \\ \text{whin:} \boxed{7} \\ \text{whout:} \boxed{8} \end{pmatrix}$$

$$(39) \quad np \begin{pmatrix} \text{embv:} \boxed{1} \\ \text{exist:} \boxed{2} \\ \text{id:} \boxed{3} \\ \text{of:} - \\ \text{pl:} - \\ \text{rel:} \boxed{4} \\ \text{whin:} \boxed{5} \\ \text{whout:} \boxed{6} \end{pmatrix} \xrightarrow{\cdot} \#\boxed{3} \quad ipron\begin{pmatrix} \text{exist:} \boxed{2} \\ \text{human:} \boxed{7} \end{pmatrix} \; opt\_newvar\begin{pmatrix} \text{hasvar:} \boxed{8} \\ \text{var:} \boxed{9} \end{pmatrix} > \begin{pmatrix} \text{hasvar:} \boxed{8} \\ \text{human:} \boxed{7} \\ \text{id:} \boxed{3} \\ \text{type: ipron} \\ \text{var:} \boxed{9} \end{pmatrix} \; relcl \begin{pmatrix} \text{embv:} \boxed{1} \\ \text{human:} \boxed{7} \\ \text{rel:} \boxed{4} \\ \text{subj:} \boxed{3} \\ \text{whin:} \boxed{5} \\ \text{whout:} \boxed{6} \end{pmatrix}$$

$$(40) \quad np \begin{pmatrix} \text{copula:} - \\ \text{exist:} + \\ \text{id:} \boxed{1} \\ \text{of:} - \\ \text{pl:} + \\ \text{whin:} \boxed{2} \\ \text{whout:} \boxed{2} \end{pmatrix} \xrightarrow{\cdot} num\_quant \quad \underline{num} \quad opt\_adj\_coord \quad \#\boxed{1} \quad \underline{noun\_pl}$$

$$(41) \quad np \begin{pmatrix} \text{copula:} - \\ \text{exist:} + \\ \text{id:} \boxed{1} \\ \text{of:} - \\ \text{pl:} - \\ \text{whin:} \boxed{2} \\ \text{whout:} \boxed{2} \end{pmatrix} \xrightarrow{\cdot} num\_quant \quad [\,1\,] \quad \#\boxed{1} \quad opt\_adj\_coord \quad \underline{noun\_sg}\begin{pmatrix} \text{gender:} \boxed{3} \\ \text{human:} \boxed{4} \\ \text{text:} \boxed{5} \end{pmatrix} > \begin{pmatrix} \text{gender:} \boxed{3} \\ \text{hasvar:} - \\ \text{human:} \boxed{4} \\ \text{id:} \boxed{1} \\ \text{noun:} \boxed{5} \\ \text{type: noun} \end{pmatrix}$$

$$(42) \quad np \begin{pmatrix} \text{exist:} + \\ \text{id:} \boxed{1} \\ \text{of:} - \\ \text{pl:} - \\ \text{whout:} + \end{pmatrix} \xrightarrow{\cdot} \#\boxed{1} \quad [\,\text{what}\,] \quad > \begin{pmatrix} \text{hasvar:} - \\ \text{human:} - \\ \text{id:} \boxed{1} \\ \text{type: wh} \end{pmatrix}$$

$$(43) \quad np \begin{pmatrix} \text{exist:} + \\ \text{id:} \boxed{1} \\ \text{of:} - \\ \text{pl:} - \\ \text{whout:} + \end{pmatrix} \xrightarrow{\cdot} \#\boxed{1} \quad [\,\text{who}\,] \quad > \begin{pmatrix} \text{hasvar:} - \\ \text{human:} + \\ \text{id:} \boxed{1} \\ \text{type: wh} \end{pmatrix}$$

$$(44) \quad np \begin{pmatrix} \text{embv:} \boxed{1} \\ \text{exist:} + \\ \text{id:} \boxed{2} \\ \text{of:} \boxed{3} \\ \text{pl:} - \\ \text{rel:} \boxed{4} \\ \text{subj:} \boxed{5} \\ \text{whout:} + \end{pmatrix} \xrightarrow{\cdot} [\,\text{which}\,] \quad nc \begin{pmatrix} \text{embv:} \boxed{1} \\ \text{id:} \boxed{2} \\ \text{of:} \boxed{3} \\ \text{rel:} \boxed{4} \\ \text{subj:} \boxed{5} \\ \text{whin:} + \\ \text{whout:} + \end{pmatrix}$$

$$(45) \quad np \begin{pmatrix} \text{exist:} + \\ \text{id:} \boxed{1} \\ \text{of:} - \\ \text{pl:} + \\ \text{whout:} + \end{pmatrix} \xrightarrow{\cdot} [\,\text{which}\,] \quad opt\_adj\_coord \quad \#\boxed{1} \quad \underline{noun\_pl}$$

The category 'nc' represents nouns optionally followed by variables, relative clauses, and prepositional phrases using "of":

$$(46) \quad nc \begin{pmatrix} \text{embv:} \boxed{1} \\ \text{id:} \boxed{2} \\ \text{of:} \boxed{3} \\ \text{rel:} \boxed{3} \\ \text{whin:} \boxed{4} \\ \text{whout:} \boxed{5} \end{pmatrix} \xrightarrow{\cdot} n \begin{pmatrix} \text{gender:} \boxed{6} \\ \text{human:} \boxed{7} \\ \text{id:} \boxed{2} \\ \text{text:} \boxed{8} \end{pmatrix} \; opt\_newvar\begin{pmatrix} \text{hasvar:} \boxed{9} \\ \text{var:} \boxed{10} \end{pmatrix} > \begin{pmatrix} \text{gender:} \boxed{6} \\ \text{hasvar:} \boxed{9} \\ \text{human:} \boxed{7} \\ \text{id:} \boxed{2} \\ \text{noun:} \boxed{8} \\ \text{type: noun} \\ \text{var:} \boxed{10} \end{pmatrix} \; relcl \begin{pmatrix} \text{embv:} \boxed{1} \\ \text{human:} \boxed{7} \\ \text{rel:} \boxed{3} \\ \text{subj:} \boxed{2} \\ \text{whin:} \boxed{4} \\ \text{whout:} \boxed{5} \end{pmatrix}$$

$$
(47) \quad nc \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{id: } \boxed{2} \\ \text{of: +} \\ \text{rel: } \boxed{3} \\ \text{subj: } \boxed{4} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix} \xrightarrow{\sim} n \begin{pmatrix} \text{gender: } \boxed{7} \\ \text{human: } \boxed{8} \\ \text{id: } \boxed{2} \\ \text{text: } \boxed{9} \end{pmatrix} > \begin{pmatrix} \text{gender: } \boxed{7} \\ \text{hasvar: } - \\ \text{human: } \boxed{8} \\ \text{id: } \boxed{2} \\ \text{noun: } \boxed{9} \\ \text{type: noun} \end{pmatrix} [\,\text{of}\,] \quad np \begin{pmatrix} \text{case: acc} \\ \text{embv: } \boxed{1} \\ \text{rel: } \boxed{3} \\ \text{subj: } \boxed{4} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix}
$$

The category 'n' stands for nouns that are preceded by an optional adjective coordination:

$$
(48) \quad n \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{id: } \boxed{3} \\ \text{text: } \boxed{4} \end{pmatrix} \xrightarrow{\,\cdot\,} opt\_adj\_coord \quad \#\boxed{3} \quad \underline{noun\_sg} \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{text: } \boxed{4} \end{pmatrix}
$$

New variables, optional and mandatory, are represented by 'opt_newvar' and 'newvar', respectively:

$$
(49) \quad opt\_newvar \left(\text{hasvar: } - \right) \xrightarrow{\,\cdot\,}
$$

$$
(50) \quad opt\_newvar \begin{pmatrix} \text{hasvar: +} \\ \text{var: } \boxed{1} \end{pmatrix} \xrightarrow{\,\cdot\,} newvar \left(\text{var: } \boxed{1} \right)
$$

$$
(51) \quad newvar \left(\text{var: } \boxed{1} \right) \xrightarrow{\,\cdot\,} \underline{var} \left(\text{text: } \boxed{1} \right) \not\prec \begin{pmatrix} \text{hasvar: +} \\ \text{var: } \boxed{1} \end{pmatrix}
$$

Proper names can either require the definite article "the" or not, and are represented by the category 'prop':

$$
(52) \quad prop \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{id: } \boxed{3} \end{pmatrix} \xrightarrow{\,\cdot\,} \underline{prop\_sg} \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{text: } \boxed{3} \end{pmatrix}
$$

$$
(53) \quad prop \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{id: } \boxed{3} \end{pmatrix} \xrightarrow{\,\cdot\,} \underline{propdef\_sg} \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{text: } \boxed{3} \end{pmatrix}
$$

Adjectives

Adjectives can be only coordinated by "and", and are represented by 'opt_adj_coord' for the optional case and by 'adj_coord' if mandatory:

$$
(54) \quad opt\_adj\_coord \xrightarrow{\,\cdot\,}
$$

$$
(55) \quad opt\_adj\_coord \xrightarrow{\,\cdot\,} adj\_coord
$$

$$
(56) \quad adj\_coord \xrightarrow{\,\cdot\,} adj
$$

$$
(57) \quad adj\_coord \xrightarrow{\,\cdot\,} adj \; [\,\text{and}\,] \; adj\_coord
$$

Uncoordinated adjectives are represented by 'adj' and can be used in positive, comparative and superlative forms:

$$
(58) \quad adj \xrightarrow{\,\cdot\,} \underline{adj\_itr}
$$

$$
(59) \quad adj \xrightarrow{\,\cdot\,} [\,\text{more}\,] \; \underline{adj\_itr}
$$

$$
(60) \quad adj \xrightarrow{\,\cdot\,} \underline{adj\_itr\_comp}
$$

$$
(61) \quad adj \xrightarrow{\,\cdot\,} [\,\text{most}\,] \; \underline{adj\_itr}
$$

$$
(62) \quad adj \xrightarrow{\,\cdot\,} \underline{adj\_itr\_sup}
$$

The category 'adjc' stands for more complicated adjective constructions including nested noun phrases that represent a comparison object:

$$
(63) \quad adjc \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix} \xrightarrow{\,\cdot\,} [\,\text{as}\,] \; \underline{adj\_itr} \; [\,\text{as}\,] \quad np \begin{pmatrix} \text{case: acc} \\ \text{copula: } - \\ \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix}
$$

$$
(64) \quad adjc \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix} \xrightarrow{\,\cdot\,} \underline{adj\_itr\_comp} \; [\,\text{than}\,] \quad np \begin{pmatrix} \text{case: acc} \\ \text{copula: } - \\ \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix}
$$

$$
(65) \quad adjc \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix} \xrightarrow{\,\cdot\,} [\,\text{more}\,] \; \underline{adj\_itr} \; [\,\text{than}\,] \quad np \begin{pmatrix} \text{case: acc} \\ \text{copula: } - \\ \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix}
$$

$$
(66) \quad adjc \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix} \xrightarrow{\,\cdot\,} \underline{adj\_tr} \left(\text{prep: } \boxed{6} \right) \quad np \begin{pmatrix} \text{case: acc} \\ \text{copula: } - \\ \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix}
$$

$$
(67) \quad adjc \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix} \xrightarrow{\,\cdot\,} [\,\text{more}\,] \; \underline{adj\_tr} \left(\text{prep: } \boxed{6} \right) \quad np \begin{pmatrix} \text{case: acc} \\ \text{copula: } - \\ \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix}
$$

$$(68)\quad adjc\begin{pmatrix}\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{5}\end{pmatrix}\;\dot\longrightarrow\;[\,\text{most}\,]\;\;\underline{adj\_tr}\Big(\text{prep: }\boxed{6}\Big)\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{5}\end{pmatrix}$$

$$(69)\quad adjc\begin{pmatrix}\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{5}\end{pmatrix}\;\dot\longrightarrow\;[\,\text{as}\,]\;\;\underline{adj\_tr}\Big(\text{prep: }\boxed{6}\Big)\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }-\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{7}\end{pmatrix}\;[\,\text{as}\,]\;\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{7}\\\text{whout: }\boxed{5}\end{pmatrix}$$

$$(70)\quad adjc\begin{pmatrix}\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{5}\end{pmatrix}\;\dot\longrightarrow\;[\,\text{as}\,]\;\;\underline{adj\_tr}\Big(\text{prep: }\boxed{6}\Big)\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }-\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{7}\end{pmatrix}\;[\,\text{as}\,]\;\;\underline{adj\_prep}\Big(\text{prep: }\boxed{6}\Big)\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{7}\\\text{whout: }\boxed{5}\end{pmatrix}$$

$$(71)\quad adjc\begin{pmatrix}\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{5}\end{pmatrix}\;\dot\longrightarrow\;[\,\text{more}\,]\;\;\underline{adj\_tr}\Big(\text{prep: }\boxed{6}\Big)\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }-\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{7}\end{pmatrix}\;[\,\text{than}\,]\;\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{7}\\\text{whout: }\boxed{5}\end{pmatrix}$$

$$(72)\quad adjc\begin{pmatrix}\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{5}\end{pmatrix}\;\dot\longrightarrow\;\underline{adj\_tr\_comp}\Big(\text{prep: }\boxed{6}\Big)\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }-\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{7}\end{pmatrix}\;[\,\text{than}\,]\;\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{7}\\\text{whout: }\boxed{5}\end{pmatrix}$$

$$(73)\quad adjc\begin{pmatrix}\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{5}\end{pmatrix}\;\dot\longrightarrow\;[\,\text{more}\,]\;\;\underline{adj\_tr}\Big(\text{prep: }\boxed{6}\Big)\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }-\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{7}\end{pmatrix}\;[\,\text{than}\,]\;\;\underline{adj\_prep}\Big(\text{prep: }\boxed{6}\Big)\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{7}\\\text{whout: }\boxed{5}\end{pmatrix}$$

$$(74)\quad adjc\begin{pmatrix}\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{5}\end{pmatrix}\;\dot\longrightarrow\;\underline{adj\_tr\_comp}\Big(\text{prep: }\boxed{6}\Big)\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }-\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{7}\end{pmatrix}\;[\,\text{than}\,]\;\;\underline{adj\_prep}\Big(\text{prep: }\boxed{6}\Big)\;np\begin{pmatrix}\text{case: acc}\\\text{copula: }-\\\text{embv: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{7}\\\text{whout: }\boxed{5}\end{pmatrix}$$

Relative Clauses

Relative clauses are represented by 'relcl'. They start with a relative pronoun and are always optional:

$$(75)\quad relcl\begin{pmatrix}\text{whin: }\boxed{1}\\\text{whout: }\boxed{1}\end{pmatrix}\;\dot\longrightarrow$$

$$(76)\quad relcl\begin{pmatrix}\text{embv: }+\\\text{human: }\boxed{1}\\\text{rel: }+\\\text{subj: }\boxed{2}\\\text{whin: }\boxed{3}\\\text{whout: }\boxed{4}\end{pmatrix}\;\dot\longrightarrow\;relpron\begin{pmatrix}\text{human: }\boxed{1}\\\text{relpron: }\boxed{5}\end{pmatrix}\;relcl1\begin{pmatrix}\text{human: }\boxed{1}\\\text{relpron: }\boxed{5}\\\text{subj: }\boxed{2}\\\text{whin: }\boxed{3}\\\text{whout: }\boxed{4}\end{pmatrix}$$

Like sentences and verb phrases, relative clauses can be coordinated by "or" ('relcl1') and "and" ('relcl2'):

$$(77)\quad relcl1\begin{pmatrix}\text{human: }\boxed{1}\\\text{relpron: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{5}\end{pmatrix}\;\overset{\sim}{\longrightarrow}\;/\!/\;\;relcl2\begin{pmatrix}\text{human: }\boxed{1}\\\text{rel: }-\\\text{relpron: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{6}\end{pmatrix}\;or\_relpron\begin{pmatrix}\text{human: }\boxed{1}\\\text{relpron: }\boxed{2}\end{pmatrix}\;relcl1\begin{pmatrix}\text{human: }\boxed{1}\\\text{relpron: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{6}\\\text{whout: }\boxed{5}\end{pmatrix}$$

$$(78)\quad relcl1\begin{pmatrix}\text{human: }\boxed{1}\\\text{relpron: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{5}\end{pmatrix}\;\dot\longrightarrow\;relcl2\begin{pmatrix}\text{human: }\boxed{1}\\\text{relpron: }\boxed{2}\\\text{subj: }\boxed{3}\\\text{whin: }\boxed{4}\\\text{whout: }\boxed{5}\end{pmatrix}$$

$$(79)\quad relcl2\begin{pmatrix}\text{human: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{relpron: }\boxed{3}\\\text{subj: }\boxed{4}\\\text{whin: }\boxed{5}\\\text{whout: }\boxed{6}\end{pmatrix}\;\dot\longrightarrow\;vp\begin{pmatrix}\text{pl: }-\\\text{rel: }-\\\text{subj: }\boxed{4}\\\text{whin: }\boxed{5}\\\text{whout: }\boxed{7}\end{pmatrix}\;and\_relpron\begin{pmatrix}\text{human: }\boxed{1}\\\text{relpron: }\boxed{3}\end{pmatrix}\;relcl2\begin{pmatrix}\text{human: }\boxed{1}\\\text{rel: }\boxed{2}\\\text{relpron: }\boxed{3}\\\text{subj: }\boxed{4}\\\text{whin: }\boxed{7}\\\text{whout: }\boxed{6}\end{pmatrix}$$

$$(80)\quad relcl2\begin{pmatrix}\text{rel: }\boxed{1}\\\text{subj: }\boxed{2}\\\text{whin: }\boxed{3}\\\text{whout: }\boxed{4}\end{pmatrix}\;\dot\longrightarrow\;vp\begin{pmatrix}\text{pl: }-\\\text{rel: }\boxed{1}\\\text{subj: }\boxed{2}\\\text{whin: }\boxed{3}\\\text{whout: }\boxed{4}\end{pmatrix}$$

$$(81)\quad relcl2\begin{pmatrix}\text{rel: }\boxed{1}\\\text{subj: }\boxed{2}\\\text{whin: }\boxed{3}\\\text{whout: }\boxed{4}\end{pmatrix}\;\overset{\sim}{\longrightarrow}\;np\begin{pmatrix}\text{case: nom}\\\text{copula: }-\\\text{embv: }\boxed{5}\\\text{id: }\boxed{6}\\\text{pl: }\boxed{7}\\\text{refl: }-\\\text{rel: }-\\\text{subj: }\boxed{2}\\\text{whin: }\boxed{3}\\\text{whout: }\boxed{8}\end{pmatrix}\;aux\begin{pmatrix}\text{be: }-\\\text{pl: }\boxed{7}\end{pmatrix}\;verb\begin{pmatrix}\text{be: }-\\\text{pl: }\boxed{7}\\\text{vcat: tr}\\\text{vform: inf}\end{pmatrix}\;vmod\begin{pmatrix}\text{copula: }-\\\text{embv: }\boxed{5}\\\text{rel: }\boxed{1}\\\text{subj: }\boxed{6}\\\text{whin: }\boxed{8}\\\text{whout: }\boxed{4}\end{pmatrix}$$

(82) $relcl2 \begin{pmatrix} \text{rel: } \boxed{1} \\ \text{subj: } \boxed{2} \\ \text{whin: } \boxed{3} \\ \text{whout: } \boxed{4} \end{pmatrix} \overset{\sim}{\longrightarrow} np \begin{pmatrix} \text{case: nom} \\ \text{copula: } - \\ \text{embv: } \boxed{5} \\ \text{id: } \boxed{6} \\ \text{pl: } \boxed{7} \\ \text{refl: } - \\ \text{rel: } - \\ \text{subj: } \boxed{2} \\ \text{whin: } \boxed{3} \\ \text{whout: } \boxed{8} \end{pmatrix} verb \begin{pmatrix} \text{be: } - \\ \text{pl: } \boxed{7} \\ \text{vcat: tr} \\ \text{vform: fin} \end{pmatrix} vmod \begin{pmatrix} \text{copula: } - \\ \text{embv: } \boxed{5} \\ \text{rel: } \boxed{1} \\ \text{subj: } \boxed{6} \\ \text{whin: } \boxed{8} \\ \text{whout: } \boxed{4} \end{pmatrix}$

Relative pronouns are represented by 'relpron' and can be either "that", "who" or "which":

(83) $relpron \begin{pmatrix} \text{relpron: that} \end{pmatrix} \overset{\cdot}{\longrightarrow} [\,\text{that}\,]$

(84) $relpron \begin{pmatrix} \text{human: } + \\ \text{relpron: who} \end{pmatrix} \overset{\cdot}{\longrightarrow} [\,\text{who}\,]$

(85) $relpron \begin{pmatrix} \text{human: } - \\ \text{relpron: which} \end{pmatrix} \overset{\cdot}{\longrightarrow} [\,\text{which}\,]$

The categories 'or_relpron' and 'and_relpron' define shortcuts - like "or that" as one token - for better usability inside of the predictive editor:

(86) $or\_relpron \begin{pmatrix} \text{human: } \boxed{1} \\ \text{relpron: } \boxed{2} \end{pmatrix} \overset{\cdot}{\longrightarrow} [\,\text{or}\,] \quad relpron \begin{pmatrix} \text{human: } \boxed{1} \\ \text{relpron: } \boxed{2} \end{pmatrix}$

(87) $or\_relpron \begin{pmatrix} \text{relpron: that} \end{pmatrix} \overset{\cdot}{\longrightarrow} [\,\text{or that}\,]$

(88) $or\_relpron \begin{pmatrix} \text{human: } + \\ \text{relpron: who} \end{pmatrix} \overset{\cdot}{\longrightarrow} [\,\text{or who}\,]$

(89) $or\_relpron \begin{pmatrix} \text{human: } - \\ \text{relpron: which} \end{pmatrix} \overset{\cdot}{\longrightarrow} [\,\text{or which}\,]$

(90) $and\_relpron \begin{pmatrix} \text{human: } \boxed{1} \\ \text{relpron: } \boxed{2} \end{pmatrix} \overset{\cdot}{\longrightarrow} [\,\text{and}\,] \quad relpron \begin{pmatrix} \text{human: } \boxed{1} \\ \text{relpron: } \boxed{2} \end{pmatrix}$

(91) $and\_relpron \begin{pmatrix} \text{relpron: that} \end{pmatrix} \overset{\cdot}{\longrightarrow} [\,\text{and that}\,]$

(92) $and\_relpron \begin{pmatrix} \text{human: } + \\ \text{relpron: who} \end{pmatrix} \overset{\cdot}{\longrightarrow} [\,\text{and who}\,]$

(93) $and\_relpron \begin{pmatrix} \text{human: } - \\ \text{relpron: which} \end{pmatrix} \overset{\cdot}{\longrightarrow} [\,\text{and which}\,]$

Verb Phrase Modifiers

Verb phrase modifiers are represented by 'vmod' and the auxiliary category 'vmod_x', and are always optional:

(94) $vmod \begin{pmatrix} \text{whin: } \boxed{1} \\ \text{whout: } \boxed{1} \end{pmatrix} \overset{\cdot}{\longrightarrow}$

(95) $vmod \begin{pmatrix} \text{copula: } \boxed{1} \\ \text{embv: } - \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix} \overset{\cdot}{\longrightarrow} adv\_coord \begin{pmatrix} \text{copula: } \boxed{1} \end{pmatrix} \quad vmod\_x \begin{pmatrix} \text{copula: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix}$

(96) $vmod \begin{pmatrix} \text{copula: } \boxed{1} \\ \text{embv: } - \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix} \overset{\cdot}{\longrightarrow} pp \begin{pmatrix} \text{embv: } \boxed{6} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{7} \end{pmatrix} \quad vmod \begin{pmatrix} \text{copula: } \boxed{1} \\ \text{embv: } \boxed{6} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{7} \\ \text{whout: } \boxed{5} \end{pmatrix}$

(97) $vmod\_x \begin{pmatrix} \text{whin: } \boxed{1} \\ \text{whout: } \boxed{1} \end{pmatrix} \overset{\cdot}{\longrightarrow}$

(98) $vmod\_x \begin{pmatrix} \text{copula: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix} \overset{\cdot}{\longrightarrow} pp \begin{pmatrix} \text{embv: } \boxed{6} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{7} \end{pmatrix} \quad vmod \begin{pmatrix} \text{copula: } \boxed{1} \\ \text{embv: } \boxed{6} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{7} \\ \text{whout: } \boxed{5} \end{pmatrix}$

The category 'pp' represents prepositional phrases:

(99) $pp \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix} \overset{\cdot}{\longrightarrow} \underline{prep} \quad np \begin{pmatrix} \text{case: acc} \\ \text{embv: } \boxed{1} \\ \text{rel: } \boxed{2} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{4} \\ \text{whout: } \boxed{5} \end{pmatrix}$

Adverbs can be coordinated by "and", which is represented by 'adv_coord':

(100) $adv\_coord \begin{pmatrix} \text{copula: } - \end{pmatrix} \overset{\cdot}{\longrightarrow} adv\_phrase$

(101) $adv\_coord \begin{pmatrix} \text{copula: } - \end{pmatrix} \overset{\cdot}{\longrightarrow} adv\_phrase \quad [\,\text{and}\,] \quad adv\_coord$

Adverbial phrases are represented by 'adv_phrase', and can be in positive, comparative or superlative form:

(102) $adv\_phrase \overset{\cdot}{\longrightarrow} \underline{adv}$

(103) $adv\_phrase \overset{\cdot}{\longrightarrow} [\,\text{more}\,] \quad \underline{adv}$

(104) $adv\_phrase \overset{\cdot}{\longrightarrow} \underline{adv\_comp}$

(105) adv_phrase $\xrightarrow{\ :\ }$ [most] $\underline{adv}$

(106) adv_phrase $\xrightarrow{\ :\ }$ $\underline{adv\_sup}$

Verbs

The category 'verb' represents main verbs that can be intransitive or transitive:

(107) $verb\begin{pmatrix}\text{be: }-\\ \text{pl: }-\\ \text{vcat: itr}\\ \text{vform: fin}\end{pmatrix}$ $\xrightarrow{\ :\ }$ $\underline{iv\_finsg}$

(108) $verb\begin{pmatrix}\text{be: }-\\ \text{pl: }+\\ \text{vcat: itr}\\ \text{vform: fin}\end{pmatrix}$ $\xrightarrow{\ :\ }$ $\underline{iv\_infpl}$

(109) $verb\begin{pmatrix}\text{be: }-\\ \text{vcat: itr}\\ \text{vform: inf}\end{pmatrix}$ $\xrightarrow{\ :\ }$ $\underline{iv\_infpl}$

(110) $verb\begin{pmatrix}\text{be: }-\\ \text{pl: }-\\ \text{vcat: tr}\\ \text{vform: fin}\end{pmatrix}$ $\xrightarrow{\ :\ }$ $\underline{tv\_finsg}$

(111) $verb\begin{pmatrix}\text{be: }-\\ \text{pl: }+\\ \text{vcat: tr}\\ \text{vform: fin}\end{pmatrix}$ $\xrightarrow{\ :\ }$ $\underline{tv\_infpl}$

(112) $verb\begin{pmatrix}\text{be: }-\\ \text{vcat: tr}\\ \text{vform: inf}\end{pmatrix}$ $\xrightarrow{\ :\ }$ $\underline{tv\_infpl}$

(113) $verb\begin{pmatrix}\text{be: }+\\ \text{vcat: tr}\end{pmatrix}$ $\xrightarrow{\ :\ }$ $\underline{tv\_pp}$

Auxiliary verbs are represented by 'aux', which includes negation markers:

(114) $aux\begin{pmatrix}\text{be: }+\\ \text{exist: }+\\ \text{pl: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ [is]

(115) $aux\begin{pmatrix}\text{be: }+\\ \text{exist: }-\\ \text{pl: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [is not]

(116) $aux\begin{pmatrix}\text{be: }+\\ \text{exist: }-\\ \text{pl: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [is] [not]

(117) $aux\begin{pmatrix}\text{be: }+\\ \text{exist: }+\\ \text{pl: }+\end{pmatrix}$ $\xrightarrow{\ :\ }$ [are]

(118) $aux\begin{pmatrix}\text{be: }+\\ \text{exist: }-\\ \text{pl: }+\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [are not]

(119) $aux\begin{pmatrix}\text{be: }+\\ \text{exist: }-\\ \text{pl: }+\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [are] [not]

(120) $aux\begin{pmatrix}\text{be: }-\\ \text{exist: }-\\ \text{pl: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [does not]

(121) $aux\begin{pmatrix}\text{be: }-\\ \text{exist: }-\\ \text{pl: }+\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [do not]

(122) $aux\begin{pmatrix}\text{be: }-\\ \text{exist: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [can]

(123) $aux\begin{pmatrix}\text{be: }-\\ \text{exist: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [should]

(124) $aux\begin{pmatrix}\text{be: }-\\ \text{exist: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [must]

(125) $aux\begin{pmatrix}\text{be: }-\\ \text{exist: }-\\ \text{pl: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [has to]

(126) $aux\begin{pmatrix}\text{be: }-\\ \text{exist: }-\\ \text{pl: }+\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [have to]

(127) $aux\begin{pmatrix}\text{be: }+\\ \text{exist: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [can] [be]

(128) $aux\begin{pmatrix}\text{be: }+\\ \text{exist: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [should] [be]

(129) $aux\begin{pmatrix}\text{be: }+\\ \text{exist: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [must] [be]

(130) $aux\begin{pmatrix}\text{be: }+\\ \text{exist: }-\\ \text{pl: }-\end{pmatrix}$ $\xrightarrow{\ :\ }$ $/\!/$ [has to] [be]

(131) $aux\begin{pmatrix}\text{be: +}\\\text{exist: −}\\\text{pl: +}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [have to] [be]

(132) $aux\begin{pmatrix}\text{be: +}\\\text{exist: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [cannot] [be]

(133) $aux\begin{pmatrix}\text{be: +}\\\text{exist: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [can] [not] [be]

(134) $aux\begin{pmatrix}\text{be: +}\\\text{exist: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [should] [not] [be]

(135) $aux\begin{pmatrix}\text{be: +}\\\text{exist: −}\\\text{pl: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [does not] [have to] [be]

(136) $aux\begin{pmatrix}\text{be: +}\\\text{exist: −}\\\text{pl: +}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [do not] [have to] [be]

(137) $aux\begin{pmatrix}\text{be: −}\\\text{exist: −}\\\text{pl: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [cannot]

(138) $aux\begin{pmatrix}\text{be: −}\\\text{exist: −}\\\text{pl: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [can] [not]

(139) $aux\begin{pmatrix}\text{be: −}\\\text{exist: −}\\\text{pl: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [should] [not]

(140) $aux\begin{pmatrix}\text{be: −}\\\text{exist: −}\\\text{pl: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [does not] [have to]

(141) $aux\begin{pmatrix}\text{be: −}\\\text{exist: −}\\\text{pl: +}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [do not] [have to]

Quantifiers

Existential and universal quantifiers are represented by 'quant':

(142) $quant\begin{pmatrix}\text{exist: +}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ [a]

(143) $quant\begin{pmatrix}\text{exist: +}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ [an]

(144) $quant\begin{pmatrix}\text{exist: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [every]

(145) $quant\begin{pmatrix}\text{exist: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [no]

The category 'num_quant' stands for numerical quantifiers:

(146) $num\_quant \overset{\cdot}{\longrightarrow}$ [at least]

(147) $num\_quant \overset{\cdot}{\longrightarrow}$ [at most]

(148) $num\_quant \overset{\cdot}{\longrightarrow}$ [less than]

(149) $num\_quant \overset{\cdot}{\longrightarrow}$ [more than]

(150) $num\_quant \overset{\cdot}{\longrightarrow}$ [exactly]

Indefinite Pronouns

Indefinite pronouns are represented by 'ipron':

(151) $ipron\begin{pmatrix}\text{exist: +}\\\text{human: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ [something]

(152) $ipron\begin{pmatrix}\text{exist: +}\\\text{human: +}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ [somebody]

(153) $ipron\begin{pmatrix}\text{exist: −}\\\text{human: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [everything]

(154) $ipron\begin{pmatrix}\text{exist: −}\\\text{human: +}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [everybody]

(155) $ipron\begin{pmatrix}\text{exist: −}\\\text{human: −}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [nothing]

(156) $ipron\begin{pmatrix}\text{exist: −}\\\text{human: +}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ // [nobody]

Anaphoric Pronouns

The category 'pron' represents reflexive and irreflexive anaphoric pronouns:

(157) $\underline{pron}\begin{pmatrix}\text{human: −}\\\text{refl: +}\end{pmatrix} \overset{\cdot}{\longrightarrow}$ [itself]

(158) $\underline{pron}\begin{pmatrix}\text{gender: masc}\\\text{human: +}\\\text{refl: +}\end{pmatrix} \xrightarrow{\;\cdot\;}$ [himself]

(159) $\underline{pron}\begin{pmatrix}\text{gender: fem}\\\text{human: +}\\\text{refl: +}\end{pmatrix} \xrightarrow{\;\cdot\;}$ [herself]

(160) $\underline{pron}\begin{pmatrix}\text{human: }-\\\text{refl: }-\end{pmatrix} \xrightarrow{\;\cdot\;}$ [it]

(161) $\underline{pron}\begin{pmatrix}\text{case: nom}\\\text{gender: masc}\\\text{human: +}\\\text{refl: }-\end{pmatrix} \xrightarrow{\;\cdot\;}$ [he]

(162) $\underline{pron}\begin{pmatrix}\text{case: acc}\\\text{gender: masc}\\\text{human: +}\\\text{refl: }-\end{pmatrix} \xrightarrow{\;\cdot\;}$ [him]

(163) $\underline{pron}\begin{pmatrix}\text{case: nom}\\\text{gender: fem}\\\text{human: +}\\\text{refl: }-\end{pmatrix} \xrightarrow{\;\cdot\;}$ [she]

(164) $\underline{pron}\begin{pmatrix}\text{case: acc}\\\text{gender: fem}\\\text{human: +}\\\text{refl: }-\end{pmatrix} \xrightarrow{\;\cdot\;}$ [her]