AceWiki Grammar

- Tobias Kuhn, 17 November 2009 -

Below, the grammar rules of the AceWiki grammar are shown:

Texts and Sentences

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

(1) $text \xrightarrow{\sim}$

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

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) $complete\_sentence \xrightarrow{:} sentence \quad [.]$

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

General sentences are represented by 'sentence':

(5) $sentence \xrightarrow{:} sentence\_coord\_1$

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

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

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

(8) $sentence\_coord\_1 \xrightarrow{:} sentence\_coord\_2$

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

(10) $sentence\_coord\_2 \xrightarrow{:} simple\_sentence\_1$

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

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

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

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

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

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

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

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

Verb Phrases

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

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

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

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

(21) $vp\_coord\_2\begin{pmatrix}\text{pl: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{3}\\ \text{whout: }\boxed{4}\end{pmatrix} \overset{:}{\longrightarrow} vp\begin{pmatrix}\text{pl: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{3}\\ \text{whout: }\boxed{5}\end{pmatrix}$ [and] $vp\_coord\_2\begin{pmatrix}\text{pl: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{5}\\ \text{whout: }\boxed{4}\end{pmatrix}$

Uncoordinated verb phrases represented by 'vp' can use an auxiliary verb:

(22) $vp\begin{pmatrix}\text{exist: }\boxed{2}\\ \text{pl: }\boxed{4}\\ \text{rel: }\boxed{3}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{5}\\ \text{whout: }\boxed{6}\end{pmatrix} \overset{\sim}{\longrightarrow} aux\begin{pmatrix}\text{be: }\boxed{7}\\ \text{exist: }\boxed{2}\\ \text{pl: }\boxed{4}\end{pmatrix}\ v\begin{pmatrix}\text{be: }\boxed{7}\\ \text{exist: }\boxed{2}\\ \text{pl: }\boxed{4}\\ \text{rel: }\boxed{3}\\ \text{subj: }\boxed{1}\\ \text{vform: inf}\\ \text{whin: }\boxed{5}\\ \text{whout: }\boxed{6}\end{pmatrix}$

(23) $vp\begin{pmatrix}\text{exist: +}\\ \text{pl: }\boxed{3}\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix} \overset{\sim}{\longrightarrow} v\begin{pmatrix}\text{be: –}\\ \text{exist: +}\\ \text{pl: }\boxed{3}\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{vform: fin}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix}$

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

(24) $v\begin{pmatrix}\text{be: –}\\ \text{copula: –}\\ \text{exist: }\boxed{1}\\ \text{pl: }\boxed{2}\\ \text{vform: }\boxed{3}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{4}\end{pmatrix} \overset{:}{\longrightarrow} verb\begin{pmatrix}\text{be: –}\\ \text{exist: }\boxed{1}\\ \text{pl: }\boxed{2}\\ \text{vcat: itr}\\ \text{vform: }\boxed{3}\end{pmatrix}$

(25) $v\begin{pmatrix}\text{be: –}\\ \text{copula: –}\\ \text{embv: }\boxed{6}\\ \text{exist: }\boxed{2}\\ \text{pl: }\boxed{4}\\ \text{rel: }\boxed{3}\\ \text{subj: }\boxed{1}\\ \text{vform: }\boxed{5}\\ \text{whin: }\boxed{7}\\ \text{whout: }\boxed{8}\end{pmatrix} \overset{:}{\longrightarrow} verb\begin{pmatrix}\text{be: –}\\ \text{exist: }\boxed{2}\\ \text{pl: }\boxed{4}\\ \text{vcat: tr}\\ \text{vform: }\boxed{5}\end{pmatrix}\ np\begin{pmatrix}\text{case: acc}\\ \text{embv: }\boxed{6}\\ \text{rel: }\boxed{3}\\ \text{subj: }\boxed{1}\\ \text{vcat: tr}\\ \text{whin: }\boxed{7}\\ \text{whout: }\boxed{8}\end{pmatrix}$

(26) $v\begin{pmatrix}\text{be: +}\\ \text{copula: –}\\ \text{embv: }\boxed{3}\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix} \overset{:}{\longrightarrow} verb\begin{pmatrix}\text{be: +}\\ \text{exist: }\boxed{7}\\ \text{pl: }\boxed{6}\\ \text{vcat: tr}\\ \text{vform: }\boxed{8}\end{pmatrix}\ np\begin{pmatrix}\text{case: acc}\\ \text{copula: –}\\ \text{embv: }\boxed{3}\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix}$

(27) $v\begin{pmatrix}\text{be: +}\\ \text{copula: +}\\ \text{embv: }\boxed{3}\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix} \overset{:}{\longrightarrow} np\begin{pmatrix}\text{case: acc}\\ \text{copula: +}\\ \text{embv: }\boxed{3}\\ \text{of: +}\\ \text{pl: –}\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix}$

(28) $v\begin{pmatrix}\text{be: +}\\ \text{copula: +}\\ \text{embv: }\boxed{3}\\ \text{pl: –}\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix} \overset{:}{\longrightarrow} np\begin{pmatrix}\text{case: acc}\\ \text{copula: +}\\ \text{embv: }\boxed{3}\\ \text{of: –}\\ \text{pl: –}\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix}$

(29) $v\begin{pmatrix}\text{be: +}\\ \text{copula: +}\\ \text{embv: }\boxed{3}\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix} \overset{:}{\longrightarrow} \underline{tradj}\ \ np\begin{pmatrix}\text{case: acc}\\ \text{copula: –}\\ \text{embv: }\boxed{3}\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix}$

Noun Phrases

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

(30) $np\begin{pmatrix}\text{def: +}\\ \text{embv: }\boxed{3}\\ \text{exist: +}\\ \text{id: }\boxed{1}\\ \text{of: –}\\ \text{pl: –}\\ \text{rel: }\boxed{2}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix} \overset{:}{\longrightarrow} \underline{propername}\begin{pmatrix}\text{gender: }\boxed{7}\\ \text{human: }\boxed{6}\\ \text{text: }\boxed{1}\end{pmatrix} \gg\begin{pmatrix}\text{gender: }\boxed{7}\\ \text{hasvar: –}\\ \text{human: }\boxed{6}\\ \text{id: }\boxed{1}\\ \text{type: prop}\end{pmatrix}\ relcl\begin{pmatrix}\text{embv: }\boxed{3}\\ \text{human: }\boxed{6}\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix}$

(31) $np\begin{pmatrix}\text{def: +}\\ \text{exist: +}\\ \text{id: }\boxed{1}\\ \text{of: –}\\ \text{pl: –}\\ \text{whin: }\boxed{2}\\ \text{whout: }\boxed{2}\end{pmatrix} \overset{:}{\longrightarrow} \#\boxed{1}\ \ newvar\begin{pmatrix}\text{var: }\boxed{3}\end{pmatrix} >\begin{pmatrix}\text{hasvar: +}\\ \text{id: }\boxed{1}\\ \text{type: var}\\ \text{var: }\boxed{3}\end{pmatrix}$

(32) $np\begin{pmatrix}\text{def: +}\\ \text{exist: +}\\ \text{id: }\boxed{1}\\ \text{of: –}\\ \text{pl: –}\\ \text{whin: }\boxed{2}\\ \text{whout: }\boxed{2}\end{pmatrix} \overset{:}{\longrightarrow} \underline{defnoun}\begin{pmatrix}\text{noun: }\boxed{3}\end{pmatrix}\ \ \underline{reference}\begin{pmatrix}\text{text: }\boxed{4}\end{pmatrix} <\begin{pmatrix}\text{gender: }\boxed{6}\\ \text{hasvar: +}\\ \text{human: }\boxed{5}\\ \text{id: }\boxed{1}\\ \text{noun: }\boxed{3}\\ \text{type: noun}\\ \text{var: }\boxed{4}\end{pmatrix} >\begin{pmatrix}\text{gender: }\boxed{6}\\ \text{hasvar: –}\\ \text{human: }\boxed{5}\\ \text{id: }\boxed{1}\\ \text{type: ref}\end{pmatrix}$

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

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

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

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

(37) $np\begin{pmatrix}\text{copula: }-\\ \text{exist: }+\\ \text{id: }\boxed{1}\\ \text{of: }-\\ \text{pl: }+\\ \text{whin: }\boxed{2}\\ \text{whout: }\boxed{2}\end{pmatrix} \xrightarrow{:} num\_quant\ \ \underline{number}\ \ \#\boxed{1}\ \ \underline{nounpl}$

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

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

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

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

(42) $np\begin{pmatrix}\text{exist: }+\\ \text{id: }\boxed{1}\\ \text{of: }-\\ \text{pl: }+\\ \text{whout: }+\end{pmatrix} \xrightarrow{:} [\,\text{which}\,]\ \ \#\boxed{1}\ \ \underline{nounpl}$

The category 'nc' represents nouns optionally followed by variables, relative clauses, and of-constructs:

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

(44) $nc\begin{pmatrix}\text{embv: }\boxed{4}\\ \text{id: }\boxed{1}\\ \text{of: }+\\ \text{rel: }\boxed{3}\\ \text{subj: }\boxed{2}\\ \text{whin: }\boxed{5}\\ \text{whout: }\boxed{6}\end{pmatrix} \xrightarrow{\sim} \underline{nounof}\ \ np\begin{pmatrix}\text{case: acc}\\ \text{embv: }\boxed{4}\\ \text{rel: }\boxed{3}\\ \text{subj: }\boxed{2}\\ \text{whin: }\boxed{5}\\ \text{whout: }\boxed{6}\end{pmatrix}$

The category 'n' stands for nouns:

(45) $n\begin{pmatrix}\text{gender: }\boxed{3}\\ \text{human: }\boxed{2}\\ \text{id: }\boxed{1}\\ \text{text: }\boxed{4}\end{pmatrix} \xrightarrow{:} \#\boxed{1}\ \ \underline{noun}\begin{pmatrix}\text{gender: }\boxed{3}\\ \text{human: }\boxed{2}\\ \text{text: }\boxed{4}\end{pmatrix}$

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

(46) $opt\_newvar\begin{pmatrix}\text{hasvar: }-\end{pmatrix} \xrightarrow{:}$

(47) $opt\_newvar\begin{pmatrix}\text{hasvar: }+\\ \text{var: }\boxed{1}\end{pmatrix} \xrightarrow{:} newvar\begin{pmatrix}\text{var: }\boxed{1}\end{pmatrix}$

(48) $newvar\begin{pmatrix}\text{var: }\boxed{1}\end{pmatrix} \xrightarrow{:} \underline{variable}\begin{pmatrix}\text{text: }\boxed{1}\end{pmatrix} \not<\begin{pmatrix}\text{hasvar: }+\\ \text{var: }\boxed{1}\end{pmatrix}$

Relative Clauses

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

(49) $relcl\begin{pmatrix}\text{whin: }\boxed{1}\\ \text{whout: }\boxed{1}\end{pmatrix} \xrightarrow{:}$

(50) $relcl\begin{pmatrix}\text{embv: }+\\ \text{human: }\boxed{2}\\ \text{rel: }+\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{3}\\ \text{whout: }\boxed{4}\end{pmatrix} \xrightarrow{:} relpron\begin{pmatrix}\text{human: }\boxed{2}\\ \text{relpron: }\boxed{5}\end{pmatrix}\ relcl1\begin{pmatrix}\text{human: }\boxed{2}\\ \text{relpron: }\boxed{5}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{3}\\ \text{whout: }\boxed{4}\end{pmatrix}$

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

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

(52) $relcl1\begin{pmatrix}\text{human: }\boxed{2}\\ \text{relpron: }\boxed{3}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix} \xrightarrow{:} relcl2\begin{pmatrix}\text{human: }\boxed{2}\\ \text{relpron: }\boxed{3}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{4}\\ \text{whout: }\boxed{5}\end{pmatrix}$

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

(54) $relcl2\begin{pmatrix}\text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{3}\\ \text{whout: }\boxed{4}\end{pmatrix} \xrightarrow{:} vp\begin{pmatrix}\text{pl: }-\\ \text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{3}\\ \text{whout: }\boxed{4}\end{pmatrix}$

(55) $relcl2\begin{pmatrix}\text{rel: }\boxed{2}\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{3}\\ \text{whout: }\boxed{4}\end{pmatrix} \xrightarrow{\sim} np\begin{pmatrix}\text{case: nom}\\ \text{copula: }-\\ \text{id: }\boxed{5}\\ \text{pl: }\boxed{6}\\ \text{refl: }-\\ \text{rel: }-\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{3}\\ \text{whout: }\boxed{4}\end{pmatrix}\ aux\begin{pmatrix}\text{be: }-\\ \text{exist: }\boxed{7}\\ \text{pl: }\boxed{6}\end{pmatrix}\ verb\begin{pmatrix}\text{be: }-\\ \text{exist: }\boxed{7}\\ \text{pl: }\boxed{6}\\ \text{vcat: tr}\\ \text{vform: inf}\end{pmatrix}$

(56) $relcl2\begin{pmatrix}\text{subj: }\boxed{1}\\ \text{whin: }\boxed{2}\\ \text{whout: }\boxed{3}\end{pmatrix} \xrightarrow{\sim} np\begin{pmatrix}\text{case: nom}\\ \text{copula: }-\\ \text{id: }\boxed{4}\\ \text{pl: }\boxed{5}\\ \text{refl: }-\\ \text{rel: }-\\ \text{subj: }\boxed{1}\\ \text{whin: }\boxed{2}\\ \text{whout: }\boxed{3}\end{pmatrix}\ verb\begin{pmatrix}\text{be: }-\\ \text{exist: }+\\ \text{pl: }\boxed{5}\\ \text{vcat: tr}\\ \text{vform: fin}\end{pmatrix}$

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

(57) $relpron\begin{pmatrix}\text{relpron: that}\end{pmatrix} \xrightarrow{:} [\,\text{that}\,]$

(58) $relpron\begin{pmatrix}\text{human: }+\\ \text{relpron: who}\end{pmatrix} \xrightarrow{:} [\,\text{who}\,]$

(59) $relpron\begin{pmatrix}\text{human: }-\\ \text{relpron: which}\end{pmatrix} \xrightarrow{:} [\,\text{which}\,]$

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

(60) $or\_relpron\begin{pmatrix}\text{human: }\boxed{1}\\ \text{relpron: }\boxed{2}\end{pmatrix} \xrightarrow{:} [\,\text{or}\,]\ relpron\begin{pmatrix}\text{human: }\boxed{1}\\ \text{relpron: }\boxed{2}\end{pmatrix}$

(61) $or\_relpron\begin{pmatrix}\text{relpron: that}\end{pmatrix} \xrightarrow{:} [\,\text{or that}\,]$

(62) $or\_relpron\begin{pmatrix}\text{human: }+\\ \text{relpron: who}\end{pmatrix} \xrightarrow{:} [\,\text{or who}\,]$

(63) $or\_relpron\begin{pmatrix}\text{human: }-\\ \text{relpron: which}\end{pmatrix} \xrightarrow{:} [\,\text{or which}\,]$

(64) $and\_relpron\begin{pmatrix}\text{human: }\boxed{1}\\ \text{relpron: }\boxed{2}\end{pmatrix} \xrightarrow{:} [\,\text{and}\,]\ relpron\begin{pmatrix}\text{human: }\boxed{1}\\ \text{relpron: }\boxed{2}\end{pmatrix}$

(65) $and\_relpron\begin{pmatrix}\text{relpron: that}\end{pmatrix} \xrightarrow{:} [\,\text{and that}\,]$

(66) $and\_relpron\begin{pmatrix}\text{human: }+\\ \text{relpron: who}\end{pmatrix} \xrightarrow{:} [\,\text{and who}\,]$

(67) $and\_relpron\begin{pmatrix}\text{human: }-\\ \text{relpron: which}\end{pmatrix} \xrightarrow{:} [\,\text{and which}\,]$

Verbs

The category 'verb' represents main verbs:

(68) $verb\begin{pmatrix}\text{be: }-\\ \text{pl: }-\\ \text{vcat: tr}\\ \text{vform: fin}\end{pmatrix} \overset{:}{\longrightarrow} \underline{verbsg}$

(69) $verb\begin{pmatrix}\text{be: }-\\ \text{pl: }+\\ \text{vcat: tr}\\ \text{vform: fin}\end{pmatrix} \overset{:}{\longrightarrow} \underline{verbinf}$

(70) $verb\begin{pmatrix}\text{be: }-\\ \text{vcat: tr}\\ \text{vform: inf}\end{pmatrix} \overset{:}{\longrightarrow} \underline{verbinf}$

(71) $verb\begin{pmatrix}\text{be: }+\\ \text{vcat: tr}\end{pmatrix} \overset{:}{\longrightarrow} \underline{pverb}$

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

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

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

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

(75) $aux\begin{pmatrix}\text{be: }+\\ \text{exist: }+\\ \text{pl: }+\end{pmatrix} \overset{:}{\longrightarrow}$ [are]

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

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

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

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

Quantifiers

Existential and universal quantifiers are represented by 'quant':

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

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

(82) $quant\begin{pmatrix}\text{exist: }-\end{pmatrix} \overset{:}{\longrightarrow} /\!/$ [every]

(83) $quant\begin{pmatrix}\text{exist: }-\end{pmatrix} \overset{:}{\longrightarrow} /\!/$ [no]

The category 'num_quant' stands for numerical quantifiers:

(84) $num\_quant \overset{:}{\longrightarrow}$ [at least]

(85) $num\_quant \overset{:}{\longrightarrow}$ [at most]

(86) $num\_quant \overset{:}{\longrightarrow}$ [less than]

(87) $num\_quant \overset{:}{\longrightarrow}$ [more than]

(88) $num\_quant \overset{:}{\longrightarrow}$ [exactly]

Indefinite Pronouns

Indefinite pronouns are represented by 'ipron':

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

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

(91) $ipron\begin{pmatrix}\text{exist: }-\\ \text{human: }-\end{pmatrix} \overset{:}{\longrightarrow} /\!/$ [everything]

(92) $ipron\begin{pmatrix}\text{exist: }-\\ \text{human: }+\end{pmatrix} \overset{:}{\longrightarrow} /\!/$ [everybody]

(93) $ipron\begin{pmatrix}\text{exist: }-\\ \text{human: }-\end{pmatrix} \overset{:}{\longrightarrow} /\!/$ [nothing]

(94) $ipron\begin{pmatrix}\text{exist: }-\\ \text{human: }+\end{pmatrix} \overset{:}{\longrightarrow} /\!/$ [nobody]