

ACE Editor Grammar

- Tobias Kuhn, 26 November 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):

$$(1) \text{ text } \dot{\rightarrow}$$

$$(2) \text{ text } \dot{\rightarrow} \text{ complete_sentence text}$$

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:

$$(3) \text{ complete_sentence } \dot{\rightarrow} \text{ sentence } [.]$$

$$(4) \text{ complete_sentence } \xrightarrow{\sim} // \text{ simple_sentence_2} \begin{pmatrix} \text{qu: +} \\ \text{whin: -} \\ \text{whout: +} \end{pmatrix} [?]$$

General sentences are represented by 'sentence':

$$(5) \text{ sentence } \dot{\rightarrow} \text{ sentence_coord_1}$$

$$(6) \text{ sentence } \xrightarrow{\sim} // [\text{for every}] \text{ nc} \begin{pmatrix} \text{qu: -} \\ \text{subj: -} \end{pmatrix} \text{ sentence_coord_1}$$

$$(7) \text{ sentence } \xrightarrow{\sim} // [\text{if}] \text{ sentence_coord_1 } [\text{then}] \text{ sentence_coord_1}$$

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

$$(8) \text{ sentence_coord_1 } \dot{\rightarrow} \text{ sentence_coord_2}$$

$$(9) \text{ sentence_coord_1 } \xrightarrow{\sim} // \text{ sentence_coord_2 } [\text{or}] \text{ sentence_coord_1}$$

$$(10) \text{ sentence_coord_2 } \dot{\rightarrow} \text{ simple_sentence_1}$$

$$(11) \text{ sentence_coord_2 } \dot{\rightarrow} \text{ simple_sentence_1 } [\text{and}] \text{ sentence_coord_2}$$

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

$$(12) \text{ simple_sentence_1 } \xrightarrow{\sim} // [\text{it is false that}] \text{ simple_sentence_2}(\text{qu: -})$$

$$(13) \text{ simple_sentence_1 } \dot{\rightarrow} [\text{there is}] \text{ np} \begin{pmatrix} \text{case: nom} \\ \text{def: -} \\ \text{exist: +} \\ \text{pl: -} \\ \text{qu: -} \\ \text{subj: -} \end{pmatrix}$$

$$(14) \text{ simple_sentence_1 } \dot{\rightarrow} [\text{there is}] \text{ np} \begin{pmatrix} \text{case: nom} \\ \text{def: -} \\ \text{exist: +} \\ \text{pl: -} \\ \text{qu: -} \\ \text{subj: -} \end{pmatrix} [\text{such that}] \text{ simple_sentence_1}$$

$$(15) \text{ simple_sentence_1 } \dot{\rightarrow} [\text{there are}] \text{ np} \begin{pmatrix} \text{case: nom} \\ \text{def: -} \\ \text{exist: +} \\ \text{pl: +} \\ \text{qu: -} \\ \text{subj: -} \end{pmatrix}$$

$$(16) \text{ simple_sentence_1 } \dot{\rightarrow} \text{ simple_sentence_2}(\text{qu: -})$$

$$(17) \text{ simple_sentence_2} \begin{pmatrix} \text{qu: } [1] \\ \text{whin: } [2] \\ \text{whout: } [3] \end{pmatrix} \xrightarrow{\sim} \text{ np} \begin{pmatrix} \text{case: nom} \\ \text{id: } [4] \\ \text{pl: } [5] \\ \text{qu: } [1] \\ \text{subj: -} \\ \text{whin: } [2] \\ \text{whout: } [6] \end{pmatrix} \text{ vp_coord_1} \begin{pmatrix} \text{pl: } [5] \\ \text{qu: } [1] \\ \text{subj: } [4] \\ \text{whin: } [6] \\ \text{whout: } [3] \end{pmatrix}$$

Verb Phrases

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

$$(18) \text{ vp_coord_1} \begin{pmatrix} \text{pl: } [1] \\ \text{qu: } [2] \\ \text{subj: } [3] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix} \dot{\rightarrow} \text{ vp_coord_2} \begin{pmatrix} \text{pl: } [1] \\ \text{qu: } [2] \\ \text{subj: } [3] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix}$$

$$(19) \text{ vp_coord_1} \begin{pmatrix} \text{pl: } [1] \\ \text{qu: } [2] \\ \text{subj: } [3] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix} \xrightarrow{\sim} // \text{ vp_coord_2} \begin{pmatrix} \text{pl: } [1] \\ \text{qu: } [2] \\ \text{subj: } [3] \\ \text{whin: } [4] \\ \text{whout: } [6] \end{pmatrix} [\text{or}] \text{ vp_coord_1} \begin{pmatrix} \text{pl: } [1] \\ \text{qu: } [2] \\ \text{subj: } [3] \\ \text{whin: } [6] \\ \text{whout: } [5] \end{pmatrix}$$

$$(20) \quad vp_coord_2 \left(\begin{array}{l} pl: [1] \\ qu: [2] \\ subj: [3] \\ whin: [4] \\ whout: [5] \end{array} \right) \dot{\rightarrow} vp \left(\begin{array}{l} pl: [1] \\ qu: [2] \\ subj: [3] \\ whin: [4] \\ whout: [5] \end{array} \right)$$

$$(21) \quad vp_coord_2 \left(\begin{array}{l} pl: [1] \\ qu: [2] \\ subj: [3] \\ whin: [4] \\ whout: [5] \end{array} \right) \dot{\rightarrow} vp \left(\begin{array}{l} pl: [1] \\ qu: [2] \\ subj: [3] \\ whin: [4] \\ whout: [6] \end{array} \right) \text{ [and] } vp_coord_2 \left(\begin{array}{l} pl: [1] \\ qu: [2] \\ subj: [3] \\ whin: [6] \\ whout: [5] \end{array} \right)$$

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

$$(22) \quad vp \left(\begin{array}{l} exist: [1] \\ pl: [2] \\ qu: [3] \\ rel: [4] \\ subj: [5] \\ whin: [6] \\ whout: [7] \end{array} \right) \rightsquigarrow aux \left(\begin{array}{l} be: [8] \\ exist: [1] \\ pl: [2] \end{array} \right) v \left(\begin{array}{l} be: [8] \\ copula: [9] \\ embv: [10] \\ exist: [1] \\ pl: [2] \\ qu: [3] \\ rel: [4] \\ subj: [5] \\ vform: inf \\ whin: [6] \\ whout: [11] \end{array} \right) vmod \left(\begin{array}{l} copula: [9] \\ embv: [10] \\ qu: [3] \\ subj: [5] \\ whin: [11] \\ whout: [7] \end{array} \right)$$

$$(23) \quad vp \left(\begin{array}{l} exist: + \\ pl: [1] \\ qu: [2] \\ rel: [3] \\ subj: [4] \\ whin: [5] \\ whout: [6] \end{array} \right) \rightsquigarrow v \left(\begin{array}{l} be: - \\ copula: [7] \\ embv: [8] \\ exist: + \\ pl: [1] \\ qu: [2] \\ rel: [3] \\ subj: [4] \\ vform: fn \\ whin: [5] \\ whout: [9] \end{array} \right) vmod \left(\begin{array}{l} copula: [7] \\ embv: [8] \\ qu: [2] \\ subj: [4] \\ whin: [9] \\ whout: [6] \end{array} \right)$$

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

$$(24) \quad v \left(\begin{array}{l} be: - \\ copula: - \\ pl: [1] \\ vform: [2] \\ whin: [3] \\ whout: [3] \end{array} \right) \dot{\rightarrow} verb \left(\begin{array}{l} be: - \\ pl: [1] \\ vcat: itr \\ vform: [2] \end{array} \right)$$

$$(25) \quad v \left(\begin{array}{l} be: - \\ copula: - \\ embv: [1] \\ pl: [2] \\ qu: [3] \\ rel: [4] \\ subj: [5] \\ vform: [6] \\ whin: [7] \\ whout: [8] \end{array} \right) \dot{\rightarrow} verb \left(\begin{array}{l} be: - \\ pl: [2] \\ vcat: tr \\ vform: [6] \end{array} \right) np \left(\begin{array}{l} case: acc \\ embv: [1] \\ qu: [3] \\ rel: [4] \\ subj: [5] \\ vcat: tr \\ whin: [7] \\ whout: [8] \end{array} \right)$$

$$(26) \quad v \left(\begin{array}{l} be: + \\ copula: - \\ embv: [1] \\ qu: [2] \\ rel: [3] \\ subj: [4] \\ whin: [5] \\ whout: [6] \end{array} \right) \dot{\rightarrow} verb \left(\begin{array}{l} be: + \\ vcat: tr \end{array} \right) \text{ [by] } np \left(\begin{array}{l} case: acc \\ copula: - \\ embv: [1] \\ qu: [2] \\ rel: [3] \\ subj: [4] \\ whin: [5] \\ whout: [6] \end{array} \right)$$

$$(27) \quad v \left(\begin{array}{l} be: + \\ copula: + \\ embv: [1] \\ qu: [2] \\ rel: [3] \\ subj: [4] \\ whin: [5] \\ whout: [6] \end{array} \right) \dot{\rightarrow} np \left(\begin{array}{l} case: acc \\ copula: + \\ embv: [1] \\ of: + \\ pl: - \\ qu: [2] \\ rel: [3] \\ subj: [4] \\ whin: [5] \\ whout: [6] \end{array} \right)$$

$$(28) \quad v \left(\begin{array}{l} be: + \\ copula: + \\ embv: [1] \\ pl: - \\ qu: [2] \\ rel: [3] \\ subj: [4] \\ whin: [5] \\ whout: [6] \end{array} \right) \dot{\rightarrow} np \left(\begin{array}{l} case: acc \\ copula: + \\ embv: [1] \\ of: - \\ pl: - \\ qu: [2] \\ rel: [3] \\ subj: [4] \\ whin: [5] \\ whout: [6] \end{array} \right)$$

$$(29) \quad v \left(\begin{array}{l} be: + \\ copula: + \\ whin: [1] \\ whout: [1] \end{array} \right) \dot{\rightarrow} adj_coord$$

$$(30) \quad v \left(\begin{array}{l} be: + \\ copula: + \\ embv: [1] \\ qu: [2] \\ rel: [3] \\ subj: [4] \\ whin: [5] \\ whout: [6] \end{array} \right) \dot{\rightarrow} adjc \left(\begin{array}{l} embv: [1] \\ qu: [2] \\ rel: [3] \\ subj: [4] \\ whin: [5] \\ whout: [6] \end{array} \right)$$

Noun Phrases

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

$$(31) \quad np \begin{pmatrix} \text{def: +} \\ \text{embv: } \boxed{1} \\ \text{exist: +} \\ \text{id: } \boxed{2} \\ \text{of: -} \\ \text{pl: -} \\ \text{qu: } \boxed{3} \\ \text{rel: } \boxed{4} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix} \dot{\rightarrow} \text{prop} \begin{pmatrix} \text{gender: } \boxed{7} \\ \text{human: } \boxed{8} \\ \text{id: } \boxed{2} \end{pmatrix} \gg \begin{pmatrix} \text{gender: } \boxed{7} \\ \text{hasvar: -} \\ \text{human: } \boxed{8} \\ \text{id: } \boxed{2} \\ \text{type: prop} \end{pmatrix} \text{relcl} \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{human: } \boxed{8} \\ \text{qu: } \boxed{3} \\ \text{rel: } \boxed{4} \\ \text{subj: } \boxed{2} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix}$$

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

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

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

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

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

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

$$(38) \quad np \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{exist: } \boxed{2} \\ \text{id: } \boxed{3} \\ \text{of: } \boxed{4} \\ \text{pl: -} \\ \text{qu: } \boxed{5} \\ \text{rel: } \boxed{6} \\ \text{subj: } \boxed{7} \\ \text{whin: } \boxed{8} \\ \text{whout: } \boxed{9} \end{pmatrix} \dot{\rightarrow} \text{quant}(\text{exist: } \boxed{2}) \text{nc} \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{id: } \boxed{3} \\ \text{of: } \boxed{4} \\ \text{qu: } \boxed{5} \\ \text{rel: } \boxed{6} \\ \text{subj: } \boxed{7} \\ \text{whin: } \boxed{8} \\ \text{whout: } \boxed{9} \end{pmatrix}$$

$$(39) \quad np \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{exist: } \boxed{2} \\ \text{id: } \boxed{3} \\ \text{of: -} \\ \text{pl: -} \\ \text{qu: } \boxed{4} \\ \text{rel: } \boxed{5} \\ \text{whin: } \boxed{6} \\ \text{whout: } \boxed{7} \end{pmatrix} \dot{\rightarrow} \# \boxed{3} \text{ipron} \begin{pmatrix} \text{exist: } \boxed{2} \\ \text{human: } \boxed{8} \end{pmatrix} \text{opt_newvar} \begin{pmatrix} \text{hasvar: } \boxed{9} \\ \text{var: } \boxed{10} \end{pmatrix} > \begin{pmatrix} \text{hasvar: } \boxed{9} \\ \text{human: } \boxed{8} \\ \text{id: } \boxed{3} \\ \text{type: ipron} \\ \text{var: } \boxed{10} \end{pmatrix} \text{relcl} \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{human: } \boxed{8} \\ \text{qu: } \boxed{4} \\ \text{rel: } \boxed{5} \\ \text{subj: } \boxed{3} \\ \text{whin: } \boxed{6} \\ \text{whout: } \boxed{7} \end{pmatrix}$$

$$(40) \quad np \begin{pmatrix} \text{copula: -} \\ \text{exist: +} \\ \text{id: } \boxed{1} \\ \text{of: -} \\ \text{pl: +} \\ \text{whin: } \boxed{2} \\ \text{whout: } \boxed{2} \end{pmatrix} \dot{\rightarrow} \text{num_quant} \underline{\text{num}} \text{opt_adj_coord} \# \boxed{1} \underline{\text{noun_pl}}$$

$$(41) \quad np \begin{pmatrix} \text{copula: -} \\ \text{exist: +} \\ \text{id: } \boxed{1} \\ \text{of: -} \\ \text{pl: -} \\ \text{whin: } \boxed{2} \\ \text{whout: } \boxed{2} \end{pmatrix} \dot{\rightarrow} \text{num_quant} [1] \# \boxed{1} \text{opt_adj_coord} \underline{\text{noun_sg}} \begin{pmatrix} \text{gender: } \boxed{3} \\ \text{human: } \boxed{4} \\ \text{text: } \boxed{5} \end{pmatrix} > \begin{pmatrix} \text{gender: } \boxed{3} \\ \text{hasvar: -} \\ \text{human: } \boxed{4} \\ \text{id: } \boxed{1} \\ \text{noun: } \boxed{5} \\ \text{type: noun} \end{pmatrix}$$

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

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

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

$$(45) \quad np \begin{pmatrix} \text{exist: } + \\ \text{id: } \boxed{1} \\ \text{of: } - \\ \text{pl: } + \\ \text{qu: } + \\ \text{whout: } + \end{pmatrix} \xrightarrow{\dot{\rightarrow}} [\text{which}] \quad \text{opt_adj_coord} \# \boxed{1} \quad \underline{\text{noun_pl}}$$

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

$$(46) \quad nc \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{id: } \boxed{2} \\ \text{of: } - \\ \text{qu: } \boxed{3} \\ \text{rel: } \boxed{4} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix} \xrightarrow{\dot{\rightarrow}} n \begin{pmatrix} \text{gender: } \boxed{7} \\ \text{human: } \boxed{8} \\ \text{id: } \boxed{2} \\ \text{text: } \boxed{9} \end{pmatrix} \text{opt_newvar} \begin{pmatrix} \text{hasvar: } \boxed{10} \\ \text{var: } \boxed{11} \end{pmatrix} > \begin{pmatrix} \text{gender: } \boxed{7} \\ \text{hasvar: } \boxed{10} \\ \text{human: } \boxed{8} \\ \text{id: } \boxed{2} \\ \text{noun: } \boxed{9} \\ \text{type: noun} \\ \text{var: } \boxed{11} \end{pmatrix} \text{relcl} \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{human: } \boxed{8} \\ \text{qu: } \boxed{3} \\ \text{rel: } \boxed{4} \\ \text{subj: } \boxed{2} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix}$$

$$(47) \quad nc \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{id: } \boxed{2} \\ \text{of: } + \\ \text{qu: } \boxed{3} \\ \text{rel: } \boxed{4} \\ \text{subj: } \boxed{5} \\ \text{whin: } \boxed{6} \\ \text{whout: } \boxed{7} \end{pmatrix} \xrightarrow{\sim} n \begin{pmatrix} \text{gender: } \boxed{8} \\ \text{human: } \boxed{9} \\ \text{id: } \boxed{2} \\ \text{text: } \boxed{10} \end{pmatrix} > \begin{pmatrix} \text{gender: } \boxed{8} \\ \text{hasvar: } - \\ \text{human: } \boxed{9} \\ \text{id: } \boxed{2} \\ \text{noun: } \boxed{10} \\ \text{type: noun} \end{pmatrix} [\text{of}] \quad np \begin{pmatrix} \text{case: acc} \\ \text{embv: } \boxed{1} \\ \text{qu: } \boxed{3} \\ \text{rel: } \boxed{4} \\ \text{subj: } \boxed{5} \\ \text{whin: } \boxed{6} \\ \text{whout: } \boxed{7} \end{pmatrix}$$

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

$$(48) \quad n \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{id: } \boxed{3} \\ \text{text: } \boxed{4} \end{pmatrix} \xrightarrow{\dot{\rightarrow}} \text{opt_adj_coord} \# \boxed{3} \quad \underline{\text{noun_sg}} \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{text: } \boxed{4} \end{pmatrix}$$

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

$$(49) \quad \text{opt_newvar} \begin{pmatrix} \text{hasvar: } - \end{pmatrix} \xrightarrow{\dot{\rightarrow}}$$

$$(50) \quad \text{opt_newvar} \begin{pmatrix} \text{hasvar: } + \\ \text{var: } \boxed{1} \end{pmatrix} \xrightarrow{\dot{\rightarrow}} \text{newvar} \begin{pmatrix} \text{var: } \boxed{1} \end{pmatrix}$$

$$(51) \quad \text{newvar} \begin{pmatrix} \text{var: } \boxed{1} \end{pmatrix} \xrightarrow{\dot{\rightarrow}} \underline{\text{var}} \begin{pmatrix} \text{text: } \boxed{1} \end{pmatrix} \not\leftarrow \begin{pmatrix} \text{hasvar: } + \\ \text{var: } \boxed{1} \end{pmatrix}$$

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

$$(52) \quad \text{prop} \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{id: } \boxed{3} \end{pmatrix} \xrightarrow{\dot{\rightarrow}} \underline{\text{prop_sg}} \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{text: } \boxed{3} \end{pmatrix}$$

$$(53) \quad \text{prop} \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{id: } \boxed{3} \end{pmatrix} \xrightarrow{\dot{\rightarrow}} \underline{\text{propdef_sg}} \begin{pmatrix} \text{gender: } \boxed{1} \\ \text{human: } \boxed{2} \\ \text{text: } \boxed{3} \end{pmatrix}$$

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:

$$(54) \quad \text{opt_adj_coord} \xrightarrow{\dot{\rightarrow}}$$

$$(55) \quad \text{opt_adj_coord} \xrightarrow{\dot{\rightarrow}} \text{adj_coord}$$

$$(56) \quad \text{adj_coord} \xrightarrow{\dot{\rightarrow}} \text{adj}$$

$$(57) \quad \text{adj_coord} \xrightarrow{\dot{\rightarrow}} \text{adj} [\text{and}] \text{adj_coord}$$

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

$$(58) \quad \text{adj} \xrightarrow{\dot{\rightarrow}} \underline{\text{adj_itr}}$$

$$(59) \quad \text{adj} \xrightarrow{\dot{\rightarrow}} [\text{more}] \underline{\text{adj_itr}}$$

$$(60) \quad \text{adj} \xrightarrow{\dot{\rightarrow}} \underline{\text{adj_itr_comp}}$$

$$(61) \quad \text{adj} \xrightarrow{\dot{\rightarrow}} [\text{most}] \underline{\text{adj_itr}}$$

$$(62) \quad \text{adj} \xrightarrow{\dot{\rightarrow}} \underline{\text{adj_itr_sup}}$$

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

$$(63) \quad \text{adjc} \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{qu: } \boxed{2} \\ \text{rel: } \boxed{3} \\ \text{subj: } \boxed{4} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix} \xrightarrow{\dot{\rightarrow}} [\text{as}] \underline{\text{adj_itr}} [\text{as}] \quad np \begin{pmatrix} \text{case: acc} \\ \text{copula: } - \\ \text{embv: } \boxed{1} \\ \text{qu: } \boxed{2} \\ \text{rel: } \boxed{3} \\ \text{subj: } \boxed{4} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix}$$

$$(77) \text{relcl1} \begin{pmatrix} \text{human: } [1] \\ \text{qu: } [2] \\ \text{relpron: } [3] \\ \text{subj: } [4] \\ \text{whin: } [5] \\ \text{whout: } [6] \end{pmatrix} \rightsquigarrow // \text{relcl2} \begin{pmatrix} \text{human: } [1] \\ \text{qu: } [2] \\ \text{rel: } - \\ \text{relpron: } [3] \\ \text{subj: } [4] \\ \text{whin: } [5] \\ \text{whout: } [7] \end{pmatrix} \text{or_relpron} \begin{pmatrix} \text{human: } [1] \\ \text{relpron: } [3] \end{pmatrix} \text{relcl1} \begin{pmatrix} \text{human: } [1] \\ \text{qu: } [2] \\ \text{relpron: } [3] \\ \text{subj: } [4] \\ \text{whin: } [7] \\ \text{whout: } [6] \end{pmatrix}$$

$$(78) \text{relcl1} \begin{pmatrix} \text{human: } [1] \\ \text{qu: } [2] \\ \text{relpron: } [3] \\ \text{subj: } [4] \\ \text{whin: } [5] \\ \text{whout: } [6] \end{pmatrix} \dot{\rightarrow} \text{relcl2} \begin{pmatrix} \text{human: } [1] \\ \text{qu: } [2] \\ \text{relpron: } [3] \\ \text{subj: } [4] \\ \text{whin: } [5] \\ \text{whout: } [6] \end{pmatrix}$$

$$(79) \text{relcl2} \begin{pmatrix} \text{human: } [1] \\ \text{qu: } [2] \\ \text{rel: } [3] \\ \text{relpron: } [4] \\ \text{subj: } [5] \\ \text{whin: } [6] \\ \text{whout: } [7] \end{pmatrix} \dot{\rightarrow} \text{vp} \begin{pmatrix} \text{pl: } - \\ \text{qu: } [2] \\ \text{rel: } - \\ \text{subj: } [5] \\ \text{whin: } [6] \\ \text{whout: } [8] \end{pmatrix} \text{and_relpron} \begin{pmatrix} \text{human: } [1] \\ \text{relpron: } [4] \end{pmatrix} \text{relcl2} \begin{pmatrix} \text{human: } [1] \\ \text{qu: } [2] \\ \text{rel: } [3] \\ \text{relpron: } [4] \\ \text{subj: } [5] \\ \text{whin: } [8] \\ \text{whout: } [7] \end{pmatrix}$$

$$(80) \text{relcl2} \begin{pmatrix} \text{qu: } [1] \\ \text{rel: } [2] \\ \text{subj: } [3] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix} \dot{\rightarrow} \text{vp} \begin{pmatrix} \text{pl: } - \\ \text{qu: } [1] \\ \text{rel: } [2] \\ \text{subj: } [3] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix}$$

$$(81) \text{relcl2} \begin{pmatrix} \text{qu: } [1] \\ \text{rel: } [2] \\ \text{subj: } [3] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix} \rightsquigarrow \text{np} \begin{pmatrix} \text{case: nom} \\ \text{copula: } - \\ \text{embv: } [6] \\ \text{id: } [7] \\ \text{pl: } [8] \\ \text{qu: } [1] \\ \text{refl: } - \\ \text{rel: } - \\ \text{subj: } [3] \\ \text{whin: } [4] \\ \text{whout: } [9] \end{pmatrix} \text{aux} \begin{pmatrix} \text{be: } - \\ \text{pl: } [8] \end{pmatrix} \text{verb} \begin{pmatrix} \text{be: } - \\ \text{pl: } [8] \\ \text{vcat: tr} \\ \text{vform: inf} \end{pmatrix} \text{vmod} \begin{pmatrix} \text{copula: } - \\ \text{embv: } [6] \\ \text{qu: } [1] \\ \text{rel: } [2] \\ \text{subj: } [7] \\ \text{whin: } [9] \\ \text{whout: } [5] \end{pmatrix}$$

$$(82) \text{relcl2} \begin{pmatrix} \text{qu: } [1] \\ \text{rel: } [2] \\ \text{subj: } [3] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix} \rightsquigarrow \text{np} \begin{pmatrix} \text{case: nom} \\ \text{copula: } - \\ \text{embv: } [6] \\ \text{id: } [7] \\ \text{pl: } [8] \\ \text{qu: } [1] \\ \text{refl: } - \\ \text{rel: } - \\ \text{subj: } [3] \\ \text{whin: } [4] \\ \text{whout: } [9] \end{pmatrix} \text{verb} \begin{pmatrix} \text{be: } - \\ \text{pl: } [8] \\ \text{vcat: tr} \\ \text{vform: fin} \end{pmatrix} \text{vmod} \begin{pmatrix} \text{copula: } - \\ \text{embv: } [6] \\ \text{qu: } [1] \\ \text{rel: } [2] \\ \text{subj: } [7] \\ \text{whin: } [9] \\ \text{whout: } [5] \end{pmatrix}$$

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

$$(83) \text{relpron} \begin{pmatrix} \text{relpron: that} \end{pmatrix} \dot{\rightarrow} [\text{that}]$$

$$(84) \text{relpron} \begin{pmatrix} \text{human: +} \\ \text{relpron: who} \end{pmatrix} \dot{\rightarrow} [\text{who}]$$

$$(85) \text{relpron} \begin{pmatrix} \text{human: -} \\ \text{relpron: which} \end{pmatrix} \dot{\rightarrow} [\text{which}]$$

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

$$(86) \text{or_relpron} \begin{pmatrix} \text{human: } [1] \\ \text{relpron: } [2] \end{pmatrix} \dot{\rightarrow} [\text{or}] \text{relpron} \begin{pmatrix} \text{human: } [1] \\ \text{relpron: } [2] \end{pmatrix}$$

$$(87) \text{or_relpron} \begin{pmatrix} \text{relpron: that} \end{pmatrix} \dot{\rightarrow} [\text{or that}]$$

$$(88) \text{or_relpron} \begin{pmatrix} \text{human: +} \\ \text{relpron: who} \end{pmatrix} \dot{\rightarrow} [\text{or who}]$$

$$(89) \text{or_relpron} \begin{pmatrix} \text{human: -} \\ \text{relpron: which} \end{pmatrix} \dot{\rightarrow} [\text{or which}]$$

$$(90) \text{and_relpron} \begin{pmatrix} \text{human: } [1] \\ \text{relpron: } [2] \end{pmatrix} \dot{\rightarrow} [\text{and}] \text{relpron} \begin{pmatrix} \text{human: } [1] \\ \text{relpron: } [2] \end{pmatrix}$$

$$(91) \text{and_relpron} \begin{pmatrix} \text{relpron: that} \end{pmatrix} \dot{\rightarrow} [\text{and that}]$$

$$(92) \text{and_relpron} \begin{pmatrix} \text{human: +} \\ \text{relpron: who} \end{pmatrix} \dot{\rightarrow} [\text{and who}]$$

$$(93) \text{and_relpron} \begin{pmatrix} \text{human: -} \\ \text{relpron: which} \end{pmatrix} \dot{\rightarrow} [\text{and which}]$$

Verb Phrase Modifiers

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

$$(94) \text{vmod} \begin{pmatrix} \text{whin: } [1] \\ \text{whout: } [1] \end{pmatrix} \dot{\rightarrow}$$

$$(95) \text{vmod} \begin{pmatrix} \text{copula: } [1] \\ \text{embv: } - \\ \text{qu: } [2] \\ \text{rel: } [3] \\ \text{subj: } [4] \\ \text{whin: } [5] \\ \text{whout: } [6] \end{pmatrix} \dot{\rightarrow} \text{adv_coord} \begin{pmatrix} \text{copula: } [1] \end{pmatrix} \text{vmod_x} \begin{pmatrix} \text{copula: } [1] \\ \text{qu: } [2] \\ \text{rel: } [3] \\ \text{subj: } [4] \\ \text{whin: } [5] \\ \text{whout: } [6] \end{pmatrix}$$

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

$$(97) \quad vmod_x \begin{pmatrix} \text{whin: } \boxed{1} \\ \text{whout: } \boxed{1} \end{pmatrix} \dot{\rightarrow}$$

$$(98) \quad vmod_x \begin{pmatrix} \text{copula: } \boxed{1} \\ \text{qu: } \boxed{2} \\ \text{rel: } \boxed{3} \\ \text{subj: } \boxed{4} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix} \dot{\rightarrow} pp \begin{pmatrix} \text{embv: } \boxed{7} \\ \text{qu: } \boxed{2} \\ \text{rel: } \boxed{3} \\ \text{subj: } \boxed{4} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix} vmod \begin{pmatrix} \text{copula: } \boxed{1} \\ \text{embv: } \boxed{7} \\ \text{qu: } \boxed{2} \\ \text{rel: } \boxed{3} \\ \text{subj: } \boxed{4} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix}$$

The category 'pp' represents prepositional phrases:

$$(99) \quad pp \begin{pmatrix} \text{embv: } \boxed{1} \\ \text{qu: } \boxed{2} \\ \text{rel: } \boxed{3} \\ \text{subj: } \boxed{4} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix} \dot{\rightarrow} \underline{prep} \quad np \begin{pmatrix} \text{case: acc} \\ \text{embv: } \boxed{1} \\ \text{qu: } \boxed{2} \\ \text{rel: } \boxed{3} \\ \text{subj: } \boxed{4} \\ \text{whin: } \boxed{5} \\ \text{whout: } \boxed{6} \end{pmatrix}$$

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

$$(100) \quad adv_coord(\text{copula: } -) \dot{\rightarrow} adv_phrase$$

$$(101) \quad adv_coord(\text{copula: } -) \dot{\rightarrow} adv_phrase \text{ [and] } adv_coord$$

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

$$(102) \quad adv_phrase \dot{\rightarrow} \underline{adv}$$

$$(103) \quad adv_phrase \dot{\rightarrow} \text{[more] } \underline{adv}$$

$$(104) \quad adv_phrase \dot{\rightarrow} \underline{adv_comp}$$

$$(105) \quad adv_phrase \dot{\rightarrow} \text{[most] } \underline{adv}$$

$$(106) \quad adv_phrase \dot{\rightarrow} \underline{adv_sup}$$

Verbs

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

$$(107) \quad verb \begin{pmatrix} \text{be: } - \\ \text{pl: } - \\ \text{vcat: itr} \\ \text{vform: fin} \end{pmatrix} \dot{\rightarrow} \underline{iv_finsg}$$

$$(108) \quad verb \begin{pmatrix} \text{be: } - \\ \text{pl: } + \\ \text{vcat: itr} \\ \text{vform: fin} \end{pmatrix} \dot{\rightarrow} \underline{iv_infpl}$$

$$(109) \quad verb \begin{pmatrix} \text{be: } - \\ \text{vcat: itr} \\ \text{vform: inf} \end{pmatrix} \dot{\rightarrow} \underline{iv_infpl}$$

$$(110) \quad verb \begin{pmatrix} \text{be: } - \\ \text{pl: } - \\ \text{vcat: tr} \\ \text{vform: fin} \end{pmatrix} \dot{\rightarrow} \underline{tv_finsg}$$

$$(111) \quad verb \begin{pmatrix} \text{be: } - \\ \text{pl: } + \\ \text{vcat: tr} \\ \text{vform: fin} \end{pmatrix} \dot{\rightarrow} \underline{tv_infpl}$$

$$(112) \quad verb \begin{pmatrix} \text{be: } - \\ \text{vcat: tr} \\ \text{vform: inf} \end{pmatrix} \dot{\rightarrow} \underline{tv_infpl}$$

$$(113) \quad verb \begin{pmatrix} \text{be: } + \\ \text{vcat: tr} \end{pmatrix} \dot{\rightarrow} \underline{tv_pp}$$

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

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

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

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

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

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

- (119) $aux \begin{pmatrix} \text{be: +} \\ \text{exist: -} \\ \text{pl: +} \end{pmatrix} \dot{\rightarrow} // \text{ [are] [not]}$
- (120) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: -} \end{pmatrix} \dot{\rightarrow} // \text{ [does not]}$
- (121) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: +} \end{pmatrix} \dot{\rightarrow} // \text{ [do not]}$
- (122) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \end{pmatrix} \dot{\rightarrow} // \text{ [can]}$
- (123) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \end{pmatrix} \dot{\rightarrow} // \text{ [should]}$
- (124) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \end{pmatrix} \dot{\rightarrow} // \text{ [must]}$
- (125) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: -} \end{pmatrix} \dot{\rightarrow} // \text{ [has to]}$
- (126) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: +} \end{pmatrix} \dot{\rightarrow} // \text{ [have to]}$
- (127) $aux \begin{pmatrix} \text{be: +} \\ \text{exist: -} \end{pmatrix} \dot{\rightarrow} // \text{ [can] [be]}$
- (128) $aux \begin{pmatrix} \text{be: +} \\ \text{exist: -} \end{pmatrix} \dot{\rightarrow} // \text{ [should] [be]}$
- (129) $aux \begin{pmatrix} \text{be: +} \\ \text{exist: -} \end{pmatrix} \dot{\rightarrow} // \text{ [must] [be]}$
- (130) $aux \begin{pmatrix} \text{be: +} \\ \text{exist: -} \\ \text{pl: -} \end{pmatrix} \dot{\rightarrow} // \text{ [has to] [be]}$
- (131) $aux \begin{pmatrix} \text{be: +} \\ \text{exist: -} \\ \text{pl: +} \end{pmatrix} \dot{\rightarrow} // \text{ [have to] [be]}$
- (132) $aux \begin{pmatrix} \text{be: +} \\ \text{exist: -} \end{pmatrix} \dot{\rightarrow} // \text{ [cannot] [be]}$
- (133) $aux \begin{pmatrix} \text{be: +} \\ \text{exist: -} \end{pmatrix} \dot{\rightarrow} // \text{ [can] [not] [be]}$
- (134) $aux \begin{pmatrix} \text{be: +} \\ \text{exist: -} \end{pmatrix} \dot{\rightarrow} // \text{ [should] [not] [be]}$
- (135) $aux \begin{pmatrix} \text{be: +} \\ \text{exist: -} \\ \text{pl: -} \end{pmatrix} \dot{\rightarrow} // \text{ [does not] [have to] [be]}$
- (136) $aux \begin{pmatrix} \text{be: +} \\ \text{exist: -} \\ \text{pl: +} \end{pmatrix} \dot{\rightarrow} // \text{ [do not] [have to] [be]}$
- (137) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: -} \end{pmatrix} \dot{\rightarrow} // \text{ [cannot]}$
- (138) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: -} \end{pmatrix} \dot{\rightarrow} // \text{ [can] [not]}$
- (139) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: -} \end{pmatrix} \dot{\rightarrow} // \text{ [should] [not]}$
- (140) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: -} \end{pmatrix} \dot{\rightarrow} // \text{ [does not] [have to]}$
- (141) $aux \begin{pmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: +} \end{pmatrix} \dot{\rightarrow} // \text{ [do not] [have to]}$

Quantifiers

Existential and universal quantifiers are represented by 'quant':

- (142) $quant(\text{exist: +}) \dot{\rightarrow} \text{ [a]}$
- (143) $quant(\text{exist: +}) \dot{\rightarrow} \text{ [an]}$
- (144) $quant(\text{exist: -}) \dot{\rightarrow} // \text{ [every]}$
- (145) $quant(\text{exist: -}) \dot{\rightarrow} // \text{ [no]}$

The category 'num_quant' stands for numerical quantifiers:

- (146) $num_quant \dot{\rightarrow} \text{ [at least]}$
- (147) $num_quant \dot{\rightarrow} \text{ [at most]}$

(148) *num_quant* $\xrightarrow{\cdot}$ [less than]

(149) *num_quant* $\xrightarrow{\cdot}$ [more than]

(150) *num_quant* $\xrightarrow{\cdot}$ [exactly]

Indefinite Pronouns

Indefinite pronouns are represented by 'ipron':

(151) *ipron* $\left(\begin{array}{l} \text{exist: +} \\ \text{human: -} \end{array} \right) \xrightarrow{\cdot}$ [something]

(152) *ipron* $\left(\begin{array}{l} \text{exist: +} \\ \text{human: +} \end{array} \right) \xrightarrow{\cdot}$ [somebody]

(153) *ipron* $\left(\begin{array}{l} \text{exist: -} \\ \text{human: -} \end{array} \right) \xrightarrow{\cdot}$ // [everything]

(154) *ipron* $\left(\begin{array}{l} \text{exist: -} \\ \text{human: +} \end{array} \right) \xrightarrow{\cdot}$ // [everybody]

(155) *ipron* $\left(\begin{array}{l} \text{exist: -} \\ \text{human: -} \end{array} \right) \xrightarrow{\cdot}$ // [nothing]

(156) *ipron* $\left(\begin{array}{l} \text{exist: -} \\ \text{human: +} \end{array} \right) \xrightarrow{\cdot}$ // [nobody]

Anaphoric Pronouns

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

(157) *pron* $\left(\begin{array}{l} \text{human: -} \\ \text{refl: +} \end{array} \right) \xrightarrow{\cdot}$ [itself]

(158) *pron* $\left(\begin{array}{l} \text{gender: masc} \\ \text{human: +} \\ \text{refl: +} \end{array} \right) \xrightarrow{\cdot}$ [himself]

(159) *pron* $\left(\begin{array}{l} \text{gender: fem} \\ \text{human: +} \\ \text{refl: +} \end{array} \right) \xrightarrow{\cdot}$ [herself]

(160) *pron* $\left(\begin{array}{l} \text{human: -} \\ \text{refl: -} \end{array} \right) \xrightarrow{\cdot}$ [it]

(161) *pron* $\left(\begin{array}{l} \text{case: nom} \\ \text{gender: masc} \\ \text{human: +} \\ \text{refl: -} \end{array} \right) \xrightarrow{\cdot}$ [he]

(162) *pron* $\left(\begin{array}{l} \text{case: acc} \\ \text{gender: masc} \\ \text{human: +} \\ \text{refl: -} \end{array} \right) \xrightarrow{\cdot}$ [him]

(163) *pron* $\left(\begin{array}{l} \text{case: nom} \\ \text{gender: fem} \\ \text{human: +} \\ \text{refl: -} \end{array} \right) \xrightarrow{\cdot}$ [she]

(164) *pron* $\left(\begin{array}{l} \text{case: acc} \\ \text{gender: fem} \\ \text{human: +} \\ \text{refl: -} \end{array} \right) \xrightarrow{\cdot}$ [her]