

ACE Editor Grammar

- Tobias Kuhn, 17 November 2009 -

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:

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

$$(4) \text{ complete_sentence } \dot{\rightarrow} \text{ simple_sentence_2 } \begin{pmatrix} \text{whin:} - \\ \text{whout:} + \end{pmatrix} [?]$$

General sentences are represented by 'sentence':

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

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

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

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':

$$(12) \text{ simple_sentence_1 } \xrightarrow{\sim} // [\text{it is false that}] \text{ simple_sentence_2 } \begin{pmatrix} \text{whin:} - \\ \text{whout:} - \end{pmatrix}$$

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

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

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

$$(16) \text{ simple_sentence_1 } \dot{\rightarrow} \text{ simple_sentence_2 } \begin{pmatrix} \text{whin:} - \\ \text{whout:} - \end{pmatrix}$$

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

Verb Phrases

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

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

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

$$(20) \text{ vp_coord_2 } \begin{pmatrix} \text{pl:} [2] \\ \text{subj:} [1] \\ \text{whin:} [3] \\ \text{whout:} [4] \end{pmatrix} \dot{\rightarrow} \text{ vp } \begin{pmatrix} \text{pl:} [2] \\ \text{subj:} [1] \\ \text{whin:} [3] \\ \text{whout:} [4] \end{pmatrix}$$

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

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

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

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

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

$$(24) \quad v \left(\begin{array}{l} be: - \\ copula: - \\ exist: [1] \\ pl: [2] \\ vform: [3] \\ whin: [4] \\ whout: [1] \end{array} \right) \dot{\rightarrow} verb \left(\begin{array}{l} be: - \\ exist: [1] \\ pl: [2] \\ vcat: itr \\ vform: [3] \end{array} \right)$$

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

$$(26) \quad v \left(\begin{array}{l} be: + \\ copula: - \\ embv: [3] \\ rel: [2] \\ subj: [1] \\ whin: [4] \\ whout: [5] \end{array} \right) \dot{\rightarrow} verb \left(\begin{array}{l} be: + \\ exist: [7] \\ pl: [6] \\ vcat: tr \\ vform: [8] \end{array} \right) \text{ [by]} np \left(\begin{array}{l} case: acc \\ copula: - \\ embv: [3] \\ rel: [2] \\ subj: [1] \\ whin: [4] \\ whout: [5] \end{array} \right)$$

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

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

$$(29) \quad v \left(\begin{array}{l} be: + \\ copula: + \\ rel: [1] \\ whin: [2] \\ whout: [2] \end{array} \right) \dot{\rightarrow} adj_coord$$

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

Noun Phrases

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

$$(31) \quad np \left(\begin{array}{l} def: + \\ embv: [3] \\ exist: + \\ id: [1] \\ of: - \\ pl: - \\ rel: [2] \\ whin: [4] \\ whout: [5] \end{array} \right) \dot{\rightarrow} prop \left(\begin{array}{l} gender: [7] \\ human: [6] \\ id: [1] \end{array} \right) \gg \left(\begin{array}{l} gender: [7] \\ hasvar: - \\ human: [6] \\ id: [1] \\ type: prop \end{array} \right) relcl \left(\begin{array}{l} embv: [3] \\ human: [6] \\ rel: [2] \\ subj: [1] \\ whin: [4] \\ whout: [5] \end{array} \right)$$

$$(32) \quad np \left(\begin{array}{l} def: + \\ exist: + \\ id: [1] \\ of: - \\ pl: - \\ whin: [2] \\ whout: [2] \end{array} \right) \dot{\rightarrow} \#_{[1]} newvar(var: [3]) > \left(\begin{array}{l} hasvar: + \\ id: [1] \\ type: var \\ var: [3] \end{array} \right)$$

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

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

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

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

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

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

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

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

$$(41) \quad np \begin{pmatrix} \text{copula: -} \\ \text{exist: +} \\ \text{id: } \boxed{1} \\ \text{of: -} \\ \text{pl: -} \\ \text{whin: } \boxed{2} \\ \text{whout: } \boxed{2} \end{pmatrix} \dot{\rightarrow} \underline{num_quant} \quad [1] \quad \# \boxed{1} \quad \underline{opt_adj_coord} \quad \underline{noun_sg} \begin{pmatrix} \text{gender: } \boxed{4} \\ \text{human: } \boxed{6} \\ \text{text: } \boxed{5} \end{pmatrix} > \begin{pmatrix} \text{gender: } \boxed{4} \\ \text{hasvar: -} \\ \text{human: } \boxed{3} \\ \text{id: } \boxed{1} \\ \text{noun: } \boxed{5} \\ \text{type: noun} \end{pmatrix}$$

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

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

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

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

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

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

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

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

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

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

$$(49) \quad \text{opt_newvar}(\text{hasvar: } -) \dot{\rightarrow}$$

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

$$(51) \quad \text{newvar}(\text{var: } [1]) \dot{\rightarrow} \underline{\text{var}}(\text{text: } [1]) \ltimes \begin{pmatrix} \text{hasvar: } + \\ \text{var: } [1] \end{pmatrix}$$

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

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

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

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:

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

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

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

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

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

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

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

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

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

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

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

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

$$(64) \quad \text{adjc} \begin{pmatrix} \text{embv: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix} \dot{\rightarrow} \underline{\text{adj_itr_comp}} [\text{than}] \quad np \begin{pmatrix} \text{case: acc} \\ \text{copula: } - \\ \text{embv: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix}$$

$$(65) \quad \text{adjc} \begin{pmatrix} \text{embv: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix} \dot{\rightarrow} [\text{more}] \underline{\text{adj_itr}} [\text{than}] \quad np \begin{pmatrix} \text{case: acc} \\ \text{copula: } - \\ \text{embv: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix}$$

$$(66) \quad \text{adjc} \begin{pmatrix} \text{embv: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix} \dot{\rightarrow} \underline{\text{adj_tr}}(\text{prep: } [6]) \quad np \begin{pmatrix} \text{case: acc} \\ \text{copula: } - \\ \text{embv: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix}$$

$$(67) \quad \text{adjc} \begin{pmatrix} \text{embv: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix} \dot{\rightarrow} [\text{more}] \underline{\text{adj_tr}}(\text{prep: } [6]) \quad np \begin{pmatrix} \text{case: acc} \\ \text{copula: } - \\ \text{embv: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{pmatrix}$$

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

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

$$(70) \quad \text{adjc} \begin{pmatrix} \text{embv:} [3] \\ \text{rel:} [2] \\ \text{subj:} [1] \\ \text{whin:} [4] \\ \text{whout:} [5] \end{pmatrix} \dot{\rightarrow} [\text{as}] \underline{\text{adj_tr}}(\text{prep:} [6]) \text{np} \begin{pmatrix} \text{case: acc} \\ \text{copula: -} \\ \text{embv:} [3] \\ \text{rel: -} \\ \text{subj:} [1] \\ \text{whin:} [4] \\ \text{whout:} [7] \end{pmatrix} [\text{as}] \underline{\text{adj_prep}}(\text{prep:} [6]) \text{np} \begin{pmatrix} \text{case: acc} \\ \text{copula: -} \\ \text{embv:} [3] \\ \text{rel:} [2] \\ \text{subj:} [1] \\ \text{whin:} [7] \\ \text{whout:} [5] \end{pmatrix}$$

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

$$(72) \quad \text{adjc} \begin{pmatrix} \text{embv:} [3] \\ \text{rel:} [2] \\ \text{subj:} [1] \\ \text{whin:} [4] \\ \text{whout:} [5] \end{pmatrix} \dot{\rightarrow} \underline{\text{adj_tr_comp}}(\text{prep:} [6]) \text{np} \begin{pmatrix} \text{case: acc} \\ \text{copula: -} \\ \text{embv:} [3] \\ \text{rel: -} \\ \text{subj:} [1] \\ \text{whin:} [4] \\ \text{whout:} [7] \end{pmatrix} [\text{than}] \text{np} \begin{pmatrix} \text{case: acc} \\ \text{copula: -} \\ \text{embv:} [3] \\ \text{rel:} [2] \\ \text{subj:} [1] \\ \text{whin:} [7] \\ \text{whout:} [5] \end{pmatrix}$$

$$(73) \quad \text{adjc} \begin{pmatrix} \text{embv:} [3] \\ \text{rel:} [2] \\ \text{subj:} [1] \\ \text{whin:} [4] \\ \text{whout:} [5] \end{pmatrix} \dot{\rightarrow} [\text{more}] \underline{\text{adj_tr}}(\text{prep:} [6]) \text{np} \begin{pmatrix} \text{case: acc} \\ \text{copula: -} \\ \text{embv:} [3] \\ \text{rel: -} \\ \text{subj:} [1] \\ \text{whin:} [4] \\ \text{whout:} [7] \end{pmatrix} [\text{than}] \underline{\text{adj_prep}}(\text{prep:} [6]) \text{np} \begin{pmatrix} \text{case: acc} \\ \text{copula: -} \\ \text{embv:} [3] \\ \text{rel:} [2] \\ \text{subj:} [1] \\ \text{whin:} [7] \\ \text{whout:} [5] \end{pmatrix}$$

$$(74) \quad \text{adjc} \begin{pmatrix} \text{embv:} [3] \\ \text{rel:} [2] \\ \text{subj:} [1] \\ \text{whin:} [4] \\ \text{whout:} [5] \end{pmatrix} \dot{\rightarrow} \underline{\text{adj_tr_comp}}(\text{prep:} [6]) \text{np} \begin{pmatrix} \text{case: acc} \\ \text{copula: -} \\ \text{embv:} [3] \\ \text{rel: -} \\ \text{subj:} [1] \\ \text{whin:} [4] \\ \text{whout:} [7] \end{pmatrix} [\text{than}] \underline{\text{adj_prep}}(\text{prep:} [6]) \text{np} \begin{pmatrix} \text{case: acc} \\ \text{copula: -} \\ \text{embv:} [3] \\ \text{rel:} [2] \\ \text{subj:} [1] \\ \text{whin:} [7] \\ \text{whout:} [5] \end{pmatrix}$$

Relative Clauses

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

$$(75) \quad \text{relcl} \begin{pmatrix} \text{whin:} [1] \\ \text{whout:} [1] \end{pmatrix} \dot{\rightarrow}$$

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

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

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

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

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

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

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

$$(82) \quad \text{relcl2} \left(\begin{array}{l} \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [3] \\ \text{whout: } [4] \end{array} \right) \xrightarrow{\sim} np \left(\begin{array}{l} \text{case: nom} \\ \text{copula: } - \\ \text{embv: } [7] \\ \text{id: } [5] \\ \text{pl: } [6] \\ \text{refl: } - \\ \text{rel: } - \\ \text{subj: } [1] \\ \text{whin: } [3] \\ \text{whout: } [8] \end{array} \right) \text{verb} \left(\begin{array}{l} \text{be: } - \\ \text{exist: } + \\ \text{pl: } [6] \\ \text{vcat: tr} \\ \text{vform: fin} \end{array} \right) \text{vmod} \left(\begin{array}{l} \text{copula: } - \\ \text{embv: } [7] \\ \text{rel: } [2] \\ \text{subj: } [5] \\ \text{whin: } [8] \\ \text{whout: } [4] \end{array} \right)$$

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

$$(83) \quad \text{relpron} \left(\begin{array}{l} \text{relpron: that} \end{array} \right) \xrightarrow{\cdot} [\text{that}]$$

$$(84) \quad \text{relpron} \left(\begin{array}{l} \text{human: } + \\ \text{relpron: who} \end{array} \right) \xrightarrow{\cdot} [\text{who}]$$

$$(85) \quad \text{relpron} \left(\begin{array}{l} \text{human: } - \\ \text{relpron: which} \end{array} \right) \xrightarrow{\cdot} [\text{which}]$$

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

$$(86) \quad \text{or_relpron} \left(\begin{array}{l} \text{human: } [1] \\ \text{relpron: } [2] \end{array} \right) \xrightarrow{\cdot} [\text{or}] \quad \text{relpron} \left(\begin{array}{l} \text{human: } [1] \\ \text{relpron: } [2] \end{array} \right)$$

$$(87) \quad \text{or_relpron} \left(\begin{array}{l} \text{relpron: that} \end{array} \right) \xrightarrow{\cdot} [\text{or that}]$$

$$(88) \quad \text{or_relpron} \left(\begin{array}{l} \text{human: } + \\ \text{relpron: who} \end{array} \right) \xrightarrow{\cdot} [\text{or who}]$$

$$(89) \quad \text{or_relpron} \left(\begin{array}{l} \text{human: } - \\ \text{relpron: which} \end{array} \right) \xrightarrow{\cdot} [\text{or which}]$$

$$(90) \quad \text{and_relpron} \left(\begin{array}{l} \text{human: } [1] \\ \text{relpron: } [2] \end{array} \right) \xrightarrow{\cdot} [\text{and}] \quad \text{relpron} \left(\begin{array}{l} \text{human: } [1] \\ \text{relpron: } [2] \end{array} \right)$$

$$(91) \quad \text{and_relpron} \left(\begin{array}{l} \text{relpron: that} \end{array} \right) \xrightarrow{\cdot} [\text{and that}]$$

$$(92) \quad \text{and_relpron} \left(\begin{array}{l} \text{human: } + \\ \text{relpron: who} \end{array} \right) \xrightarrow{\cdot} [\text{and who}]$$

$$(93) \quad \text{and_relpron} \left(\begin{array}{l} \text{human: } - \\ \text{relpron: which} \end{array} \right) \xrightarrow{\cdot} [\text{and which}]$$

Verb Phrase Modifiers

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

$$(94) \quad \text{vmod} \left(\begin{array}{l} \text{whin: } [1] \\ \text{whout: } [1] \end{array} \right) \xrightarrow{\cdot}$$

$$(95) \quad \text{vmod} \left(\begin{array}{l} \text{copula: } [3] \\ \text{embv: } - \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{array} \right) \xrightarrow{\cdot} \text{adv_coord} \left(\begin{array}{l} \text{copula: } [3] \end{array} \right) \text{vmod_x} \left(\begin{array}{l} \text{copula: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{array} \right)$$

$$(96) \quad \text{vmod} \left(\begin{array}{l} \text{copula: } [3] \\ \text{embv: } - \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{array} \right) \xrightarrow{\cdot} pp \left(\begin{array}{l} \text{embv: } [6] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [7] \end{array} \right) \text{vmod} \left(\begin{array}{l} \text{copula: } [3] \\ \text{embv: } [6] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [7] \\ \text{whout: } [5] \end{array} \right)$$

$$(97) \quad \text{vmod_x} \left(\begin{array}{l} \text{whin: } [1] \\ \text{whout: } [1] \end{array} \right) \xrightarrow{\cdot}$$

$$(98) \quad \text{vmod_x} \left(\begin{array}{l} \text{copula: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{array} \right) \xrightarrow{\cdot} pp \left(\begin{array}{l} \text{embv: } [6] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [7] \end{array} \right) \text{vmod} \left(\begin{array}{l} \text{copula: } [3] \\ \text{embv: } [6] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [7] \\ \text{whout: } [5] \end{array} \right)$$

The category 'pp' represents prepositional phrases:

$$(99) \quad pp \left(\begin{array}{l} \text{embv: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{array} \right) \xrightarrow{\cdot} \text{prep} \quad np \left(\begin{array}{l} \text{case: acc} \\ \text{embv: } [3] \\ \text{rel: } [2] \\ \text{subj: } [1] \\ \text{whin: } [4] \\ \text{whout: } [5] \end{array} \right)$$

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

$$(100) \quad \text{adv_coord} \left(\begin{array}{l} \text{copula: } - \end{array} \right) \xrightarrow{\cdot} \text{adv_phrase}$$

$$(101) \quad \text{adv_coord} \left(\begin{array}{l} \text{copula: } - \end{array} \right) \xrightarrow{\cdot} \text{adv_phrase} \quad [\text{and}] \quad \text{adv_coord}$$

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

$$(102) \quad \text{adv_phrase} \xrightarrow{\cdot} \underline{\text{adv}}$$

$$(103) \quad \text{adv_phrase} \xrightarrow{\cdot} [\text{more}] \quad \underline{\text{adv}}$$

$$(104) \quad \text{adv_phrase} \xrightarrow{\cdot} \underline{\text{adv_comp}}$$

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

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

Verbs

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

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

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

$$(109) \quad \textit{verb} \left(\begin{smallmatrix} \text{be:} - \\ \text{vcat:} \textit{itr} \\ \text{vform:} \textit{inf} \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} \underline{\textit{iv_infpl}}$$

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

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

$$(112) \quad \textit{verb} \left(\begin{smallmatrix} \text{be:} - \\ \text{vcat:} \textit{tr} \\ \text{vform:} \textit{inf} \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} \underline{\textit{tv_infpl}}$$

$$(113) \quad \textit{verb} \left(\begin{smallmatrix} \text{be:} + \\ \text{vcat:} \textit{tr} \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} \underline{\textit{tv_pp}}$$

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

$$(114) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} + \\ \text{exist:} + \\ \text{pl:} - \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} [\text{is}]$$

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

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

$$(117) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} + \\ \text{exist:} + \\ \text{pl:} + \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} [\text{are}]$$

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

$$(119) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} + \\ \text{exist:} - \\ \text{pl:} + \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{are}] \quad [\text{not}]$$

$$(120) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} - \\ \text{exist:} - \\ \text{pl:} - \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{does not}]$$

$$(121) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} - \\ \text{exist:} - \\ \text{pl:} + \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{do not}]$$

$$(122) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} - \\ \text{exist:} - \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{can}]$$

$$(123) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} - \\ \text{exist:} - \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{should}]$$

$$(124) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} - \\ \text{exist:} - \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{must}]$$

$$(125) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} - \\ \text{exist:} - \\ \text{pl:} - \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{has to}]$$

$$(126) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} - \\ \text{exist:} - \\ \text{pl:} + \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{have to}]$$

$$(127) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} + \\ \text{exist:} - \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{can}] \quad [\text{be}]$$

$$(128) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} + \\ \text{exist:} - \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{should}] \quad [\text{be}]$$

$$(129) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} + \\ \text{exist:} - \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{must}] \quad [\text{be}]$$

$$(130) \quad \textit{aux} \left(\begin{smallmatrix} \text{be:} + \\ \text{exist:} - \\ \text{pl:} - \end{smallmatrix} \right) \xrightarrow{\dot{\rightarrow}} // [\text{has to}] \quad [\text{be}]$$

$$(131) \quad aux \left(\begin{smallmatrix} \text{be: +} \\ \text{exist: -} \\ \text{pl: +} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [have to] [be]}$$

$$(132) \quad aux \left(\begin{smallmatrix} \text{be: +} \\ \text{exist: -} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [cannot] [be]}$$

$$(133) \quad aux \left(\begin{smallmatrix} \text{be: +} \\ \text{exist: -} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [can] [not] [be]}$$

$$(134) \quad aux \left(\begin{smallmatrix} \text{be: +} \\ \text{exist: -} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [should] [not] [be]}$$

$$(135) \quad aux \left(\begin{smallmatrix} \text{be: +} \\ \text{exist: -} \\ \text{pl: -} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [does not] [have to] [be]}$$

$$(136) \quad aux \left(\begin{smallmatrix} \text{be: +} \\ \text{exist: -} \\ \text{pl: +} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [do not] [have to] [be]}$$

$$(137) \quad aux \left(\begin{smallmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: -} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [cannot]}$$

$$(138) \quad aux \left(\begin{smallmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: -} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [can] [not]}$$

$$(139) \quad aux \left(\begin{smallmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: -} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [should] [not]}$$

$$(140) \quad aux \left(\begin{smallmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: -} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [does not] [have to]}$$

$$(141) \quad aux \left(\begin{smallmatrix} \text{be: -} \\ \text{exist: -} \\ \text{pl: +} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [do not] [have to]}$$

Quantifiers

Existential and universal quantifiers are represented by 'quant':

$$(142) \quad quant \left(\begin{smallmatrix} \text{exist: +} \end{smallmatrix} \right) \xrightarrow{\cdot} \text{ [a]}$$

$$(143) \quad quant \left(\begin{smallmatrix} \text{exist: +} \end{smallmatrix} \right) \xrightarrow{\cdot} \text{ [an]}$$

$$(144) \quad quant \left(\begin{smallmatrix} \text{exist: -} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [every]}$$

$$(145) \quad quant \left(\begin{smallmatrix} \text{exist: -} \end{smallmatrix} \right) \xrightarrow{\cdot} // \text{ [no]}$$

The category 'num_quant' stands for numerical quantifiers:

$$(146) \quad num_quant \xrightarrow{\cdot} \text{ [at least]}$$

$$(147) \quad num_quant \xrightarrow{\cdot} \text{ [at most]}$$

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

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

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

Indefinite Pronouns

Indefinite pronouns are represented by 'ipron':

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

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

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

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

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

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

Anaphoric Pronouns

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

$$(157) \quad \underline{pron} \left(\begin{smallmatrix} \text{human: -} \\ \text{refl: +} \end{smallmatrix} \right) \xrightarrow{\cdot} \text{ [itself]}$$

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

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

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

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

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

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

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