

Syntax 1: The Official Rule Format

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The structure of the sign

$$\left[\begin{array}{l} \text{sign} \\ \text{PHON } \textit{list} \\ \text{SYN } \left[\begin{array}{ll} \text{cat} & \\ \text{POS} & \textit{pos} \\ \text{SPR} & \textit{list} \\ \text{COMPS} & \textit{list} \end{array} \right] \end{array} \right]$$

Part of Speech Features and their Possible Values

Part of speech X	FEATURE of X	Possible values of FEATURE
V	AUX	<i>yes, no</i>
	VFORM	<i>fin, bare (infinitive), pres-part, past-part, passive</i>
	AGR	<i>thd-sg</i> <i>non-thd-sg: [fst-sg, sec-sg, fst-pl, sec-pl, thd-pl]</i> <i>none</i>
N	AGR	<i>thd-sg</i> <i>non-thd-sg: [fst-sg, sec-sg, fst-pl, sec-pl, thd-pl]</i> <i>none</i>
	CASE	<i>subj: [plain, nom]</i> <i>obj: [plain, acc]</i>
D	AGR	<i>thd-sg</i> <i>non-thd-sg: [fst-sg, sec-sg, fst-pl, sec-pl, thd-pl]</i> <i>none</i>
P	—	
A	—	
ADV	—	
C	—	

Assignment of inflectional feature values to words

Case

- ❶ Nouns which can only be used in subject position are *nom(inative)*.
Examples: *I, she, we*
- ❷ Nouns which can only be used in object position are *acc(usative)*.
Examples: *me, her, us, whom*
- ❸ Nouns which can be used in both subject and object position are *plain*.
Examples: *you, it, Kim, student, who*

Case government by verbs and prepositions:

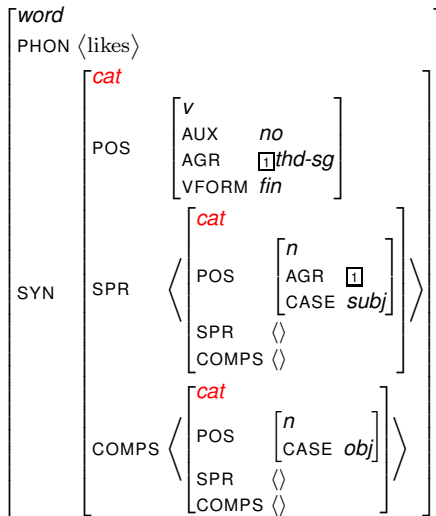
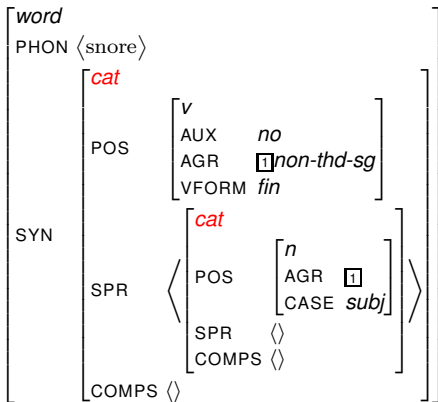
- ❶ Finite verbs require their subject's case to be *subj*. Both *nom* and *plain* count as *subj*.
- ❷ All verbs and all prepositions require their object's case to be *obj*. Both *acc* and *plain* count as *obj*.

Assignment of inflectional feature values to words

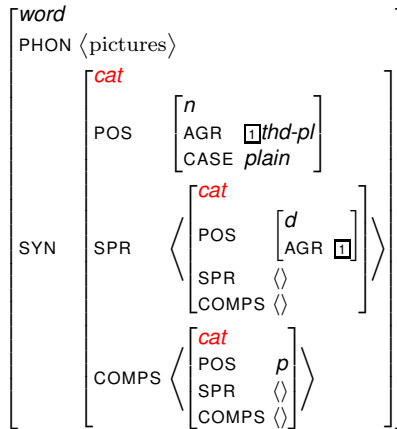
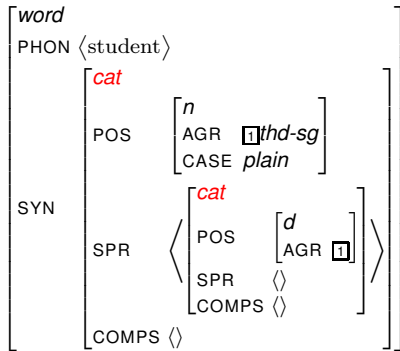
Agreement

- ❶ Verbs which have only one form for all person-number combinations have *agr* as their agreement value.
Examples: *will, can, smoked, ate*
- ❷ Verbs which can only have third person singular subjects have *thd-sg* as their agreement value.
Examples: *is, smokes, has, eats*
- ❸ Verbs which can have all person-number combinations except for third person singular have *non-thd-sg* as their agreement value.
Examples: *smoke, eat, like*
- ❹ All non-finite verbs have *none* as their agreement value.
Examples: *sing (bare), singing, sung, be, being, been, eat (bare), eating, eaten*

Lexical entries for typical verbs



Lexical entries for typical nouns



Lexical entries for typical nouns, 2

$$\left[\begin{array}{l} \text{word} \\ \text{PHON } \langle \text{she} \rangle \\ \text{SYN } \left[\begin{array}{l} \text{POS } \left[\begin{array}{l} n \\ \text{AGR } \textit{thd-sg} \\ \text{CASE } \textit{nom} \end{array} \right] \\ \text{SPR } \langle \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \end{array} \right]$$
$$\left[\begin{array}{l} \text{word} \\ \text{PHON } \langle \text{her} \rangle \\ \text{SYN } \left[\begin{array}{l} \text{POS } \left[\begin{array}{l} n \\ \text{AGR } \textit{thd-sg} \\ \text{CASE } \textit{acc} \end{array} \right] \\ \text{SPR } \langle \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \end{array} \right]$$
$$\left[\begin{array}{l} \text{word} \\ \text{PHON } \langle \text{it} \rangle \\ \text{SYN } \left[\begin{array}{l} \text{POS } \left[\begin{array}{l} n \\ \text{AGR } \textit{thd-sg} \\ \text{CASE } \textit{plain} \end{array} \right] \\ \text{SPR } \langle \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \end{array} \right]$$

Lexical entries for other parts of speech

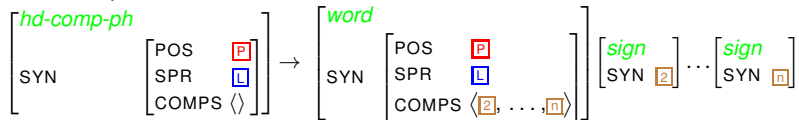
$$\left[\begin{array}{l} \text{word} \\ \text{PHON} \langle \text{those} \rangle \\ \text{SYN} \left[\begin{array}{l} \text{POS} \text{ *cat* } \\ \text{SPR} \langle \rangle \\ \text{COMPS} \left[\begin{array}{l} \text{AGR} \text{ *d* } \\ \text{thd-pl} \end{array} \right] \end{array} \right] \end{array} \right]$$

$$\left[\begin{array}{l} \text{word} \\ \text{PHON} \langle \text{fond} \rangle \\ \text{SYN} \left[\begin{array}{l} \text{POS} \text{ *cat* } \\ \text{SPR} \text{ *a* } \\ \text{COMPS} \left\langle \left[\begin{array}{l} \text{POS} \text{ *cat* } \\ \text{SPR} \langle \rangle \\ \text{COMPS} \langle \rangle \end{array} \right] \text{ *p* } \right\rangle \end{array} \right] \end{array} \right]$$

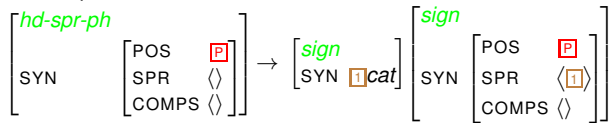
$$\left[\begin{array}{l} \text{word} \\ \text{PHON} \langle \text{of} \rangle \\ \text{SYN} \left[\begin{array}{l} \text{POS} \text{ *cat* } \\ \text{SPR} \text{ *p* } \\ \text{COMPS} \left\langle \left[\begin{array}{l} \text{POS} \text{ *cat* } \\ \text{SPR} \langle \rangle \\ \text{COMPS} \left[\begin{array}{l} \text{CASE} \text{ *n* } \\ \text{obj} \end{array} \right] \end{array} \right] \right\rangle \end{array} \right] \end{array} \right]$$

Giving the grammar rules their official names as well

Head-Complement Rule:



Head-Specifier Rule:



Head-Complementizer Rule:

$$\left[\begin{array}{c} \text{hd-c-ph} \\ \text{SYN} \left[\begin{array}{cc} \text{POS} & \boxed{\text{P}} \\ \text{SPR} & \langle \rangle \\ \text{COMPS} & \langle \rangle \end{array} \right] \end{array} \right] \rightarrow \left[\begin{array}{c} \text{word} \\ \text{SYN} \left[\text{POS } c \right] \end{array} \right] \left[\begin{array}{c} \text{phrase} \\ \text{SYN} \left[\begin{array}{cc} \text{POS} & \boxed{\text{P}} \\ \text{SPR} & \langle \rangle \\ \text{COMPS} & \langle \rangle \end{array} \right] \left[\begin{array}{c} v \\ \text{VFORM } fin \end{array} \right] \end{array} \right]$$

Subj-Aux-Inversion Rule:

$$\left[\begin{array}{c} \text{sai-ph} \\ \text{SYN} \left[\begin{array}{cc} \text{POS} & \boxed{\text{P}} \\ \text{SPR} & \langle \rangle \\ \text{COMPS} & \langle \rangle \end{array} \right] \end{array} \right] \rightarrow \left[\begin{array}{c} \text{word} \\ \text{SYN} \left[\begin{array}{cc} \text{POS} & \boxed{\text{P}} \\ \text{SPR} & \langle \boxed{1} \rangle \\ \text{COMPS} & \langle \boxed{2} \rangle \end{array} \right] \left[\begin{array}{c} v \\ \text{AUX } yes \\ \text{VFORM } fin \end{array} \right] \end{array} \right] \left[\begin{array}{c} \text{sign} \\ \text{SYN } \boxed{1} \end{array} \right] \left[\begin{array}{c} \text{sign} \\ \text{SYN } \boxed{2} \end{array} \right]$$

Head daughters and non-head daughters

Definitions:

- 1 The daughter of a phrase which shares its part of speech with it, is its **head daughter**.
- 2 All other daughters of a phrase are its **non-head daughters**.

Constraint on the Non-head daughters of a phrase

All non-head-daughters of a phrase are complete signs:

$$\left[\begin{array}{c} \text{sign} \\ \text{SYN} \left[\begin{array}{cc} \text{SPR} & \langle \rangle \\ \text{COMPS} & \langle \rangle \end{array} \right] \end{array} \right]$$

Formalizing the Filler-gap relationship

The definition of the gap

<i>gap</i>	
PHON	$\langle \rangle$
SYN	$\boxed{1}$
GAPS	$\langle \boxed{1} \rangle$

This means the following:

- 1 The gap is phonologically silent.
- 2 The gap is like a joker card: since it is syntactically maximally unspecific, it can stand in for any sign whatsoever.
- 3 The syntactic category of the gap also appears as the sole element on its gap list.

The Gap Principle

We distinguish between two kinds of phrases:

- ❶ Stand(ard) phrases: *hd-comp-ph*, *hd-spr-ph*, *hd-c-ph*, *sai-ph*
- ❷ Head-Filler phrases: *top-ph*, *question*

$$\left[\begin{array}{c} \text{stand-ph} \\ \text{GAPS} \quad \boxed{L1} \oplus \dots \oplus \boxed{Ln} \end{array} \right] \rightarrow \left[\begin{array}{c} \text{sign} \\ \text{GAPS} \quad \boxed{L1} \end{array} \right] \cdots \left[\begin{array}{c} \text{sign} \\ \text{GAPS} \quad \boxed{Ln} \end{array} \right]$$

Remarks:

- ❶ \oplus is the list merger operator.¹
- ❷ $L1 \oplus L2$ is the new list $L3$ which contains all the elements of list $L1$ followed by all the elements of list $L2$.

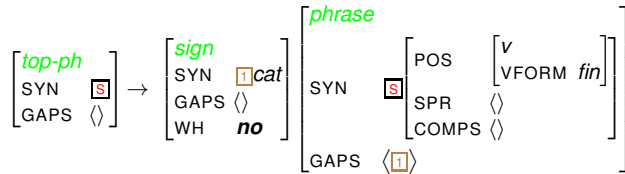
Examples:

- ❶ $\langle \rangle \oplus \langle a \rangle = \langle a \rangle$
- ❷ $\langle a \rangle \oplus \langle \rangle = \langle a \rangle$
- ❸ $\langle a, a \rangle \oplus \langle a, b, c \rangle = \langle a, a, a, b, c \rangle$

¹ to merge = verschmelzen.

The Topicalization Rule is a Head-Filler Rule

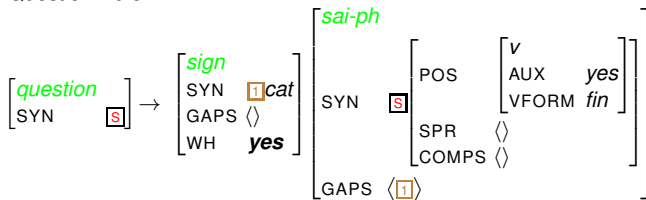
Top Rule:



In words: a *top-ph* can be formed from a filler and a finite sentence that has a gap if the filler is not a **wh-word** and the syntactic category of the filler and the gap match.

The Question Rule is a Head-Filler Rule

Question Rule:



In words: a *question* can be formed from a filler and a subject inversion phrase that has a gap if the filler is a **wh-word** and the syntactic category of the filler and the gap match.