



Center for Research in Urdu Language Processing
National University of Computer and Emerging Sciences, Lahore Pakistan

Reference No:

Revision History:

Name	Change Date	Version	Description of Changes
Shanza Nayer	25 th October, 04	0.1	Created

POS ID: EPOS101

Part of Speech Name: Auxiliary

Part of Speech String: aux

Lexical Entry Template:

<word>:aux, ^PERF = {POS / NEG / NULL}, ^PROG = {POS / NULL}, ^_AUX_FORM = {have / be / do},
^_MORPH_FORM = {BARE,TO_INF, PRES,PAST,PERF,PROG}, ^TENSE = {PRES/PAST}, ^VOICE
={ACTIVE,PASSIVE}.

Note: Number and Person features which are needed to check agreement with the SUBJ of the sentence are added as constraints.

Sample Lexical Entry:

is:aux,[^SUBJ NUM =c SG && ^ SUBJ PERS =c 3],^_AUX_FORM = 'be', ^_MORPH_FORM = PRES, ^TNS_ASP
TENSE = PRES, ^_ALLOWED_FORM = PROG, ^VOICE = ACTIVE, ^TNS_ASP PROG = POS, ^TNS_ASP PERF
= NEG.

is:aux,[^SUBJ NUM =c SG && ^ SUBJ PERS =c 3],^_AUX_FORM = 'be', ^_MORPH_FORM = PRES, ^TNS_ASP
TENSE = PRES, ^_ALLOWED_FORM = PERF, ^VOICE = PASSIVE.

have:aux, ^_AUX_FORM = 'have', ^_MORPH_FORM = {BARE,TO_INF}, ^_ALLOWED_FORM = PERF, ^VOICE =
{ACTIVE, PASSIVE}, ^TNS_ASP PERF = POS.

have:aux, ^_AUX_FORM = 'have', ^_MORPH_FORM = PRES, ~[^SUBJ NUM =c SG && ^ SUBJ PERS =c 3],
^TNS_ASP TENSE = PRES, ^_ALLOWED_FORM = PERF, ^VOICE = {ACTIVE, PASSIVE}, ^TNS_ASP PERF =
POS.

Description:

Following are the features and possible values of auxiliary lexical entry:

They are the aspectual values added to the structure of TNS_ASP

PERF (Perfective) can be: POS: *Example: have*
NEG: *Example: is*
It can be null: *Example: 'is' in passive form*

PROG (Progressive) can be: POS: *Example: is*
It can be null: *Example: have*

They are the tense values added to the structure of TNS_ASP

TENSE (Tense) can be: PRES: *Example: is*
PAST: *Example: was*
It can be null: *Example: be*



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This feature gives the root form of the word. It is a garbage feature which will be just used for checking well-formedness condition. It will not be passed to the f-structure.

_AUX_FORM (Auxiliary form) can be:

have: *Example: had*
be: *Example: am*
do: *Example: did*

It has three fixed values as given above. It cannot be null.

This feature gives the morphological form of the word. Like addition of –ing to the bare form makes the word in its progressive form. It is a garbage feature which will be just used for checking the well-formedness. It will not be passed to the f-structure.

_MORPH_FORM (Morphological form) can be:

BARE: *Example: be (used with modals)*
TO_INF: *Example: have (used with infinitival clause)*
PRES: *Example: is, are*
PAST: *Example: was, were*
PERF: *Example: been*
PROG: *Example: being*

It cannot be null.

This feature gives the form of word which the current lexical entry requires for the verb following it. It is a garbage feature which will be just used for checking the well-formedness. It will not be passed to the f-structure.

_ALLOWED_FORM can be:

BARE: *Example: will*
PERF: *Example: have*
PROG: *Example: is*

It cannot be null.

This tells that whether the particular lexical is in its active/passive form

VOICE:

ACTIVE: *Example: 'is' used for 'is playing'*
PASSIVE: *Example: 'was' used for 'was examined'*
BOTH: *Example: have used for 'have played' and have used for 'have been examined'*

It cannot be null

Examples:

1. She has been being examined by the doctor.
2. This girl is playing with the doll.



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POS Status: Active

Reference:

[1] Randolph Quirk et al., "A Comprehensive Grammar of the English Language"

Related Rules: EGR101, EGR136

Related POS: -

Replaces: -

Reason: -

Replaced by: EPOS012

Reason: Changes in the auxiliary structure in the new release



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Analysis: Following is the in-depth analysis of the rule.

Analysis: Verbs, as a class of words, can be divided into three major categories, according to their function within the verb phrase; we distinguish the open class of FULL VERBS (or lexical verbs) such as LEAVE from the closed class of PRIMARY VERBS (BE, HAVE and DO) and of MODAL AUXILIARY VERBS (will, might, etc.) (p. 96, [1])

Primary verbs can act both as main verbs as well as auxiliaries. Their behavior as auxiliaries is represented by this part of speech, namely 'aux'. When they behave as main verbs, a separate lexical entry for them in the lexicon is picked up, having the part of speech 'verb'.

List of possible auxiliaries is given below:

Be, is, am, are, was, were, been, being, do, does, did, have, has, had.

Example: i) She has appeared.

Result: We decided on the above analysis.

Future Work:

1. The usage of 'do' in forming questions has not been done yet.
2. Cause of parser limitation, constraints having functional uncertainty could not be implemented. Like *I am sleeping* Vs. **I are sleeping*.