



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
Kiran Khurshid	27 th July, 04	0.1	Created
Kiran Khurshid	9 th Dec, 04	0.2	Added negation
Zunaira Malik	20 th May, 05	0.3	New Release

Rule ID: EGR214

Rule Syntax: Following is the constituent description of the rule.

HelpVP -> AuxP
HelpVP -> modal (neg)
HelpVP -> modal (neg) AuxP

Rule Functional Description: Following are the functional specifications of the rules.

- 1) HelpVP -> AuxP: ^_MAUX = !_MAUX;
- 2) HelpVP -> modal: ^_MAUX = !, ^MODAL_STRUCT = !MODAL_STRUCT, ^_MAUX VOICE = ACTIVE, ^_FLAG = {INTERROGATIVE, DECL};(neg: ^=!;).
- 3) HelpVP -> modal: ^= !; (neg: ^=!;) AuxP: ^= !, !_AUX1 _MORPH_FORM =c ^_ALLOWED_FORM, ^_MAUX TNS_ASP = ^TNS_ASP;

Frequency: -

Description: This rule shows the functional and constituent structure of Helping Verbs. It gives the detail of the Helping Verb Phrase in active and passive form with all possible forms of auxiliaries.

c-structure: A Helping Verb Phrase can have an AuxP alone, a modal alone or a modal preceded by an AuxP. AuxP consists of at least one and at most three auxiliaries. For details see EGR036. The first production is for AuxP alone, second is for modal alone and third is having a modal and at least one auxiliary in a helping verb phrase.

f-structure: _MAUX is the garbage structure, used to check well-formedness of the helping verb phrase and in turn of the VPact_main. It contains all the relevant features, such as VOICE and TNS_ASP, which are required to make these checks. _MAUX is passed the AuxP and modals.

Examples:

- 1) She is / has been working hard. (For production 1)
- 2) A car may hit her. (For production 2)
- 2) A car may not hit her. (For production 2)
- 3) The boy may have been sleeping in the car. (For production 3)
- 3) The boy may not have been sleeping in the car. (For production 3)



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Rule Status: Active

Reference: -

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

Related Rules: EGR216

Related POS: EPOS114, EPOS120

Replaces: EGR100

Reason: New Release

Replaced by: -

Reason: -



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

Analysis: Previously, four rules (EGR017, EGR020, EGR021 and EGR022) were being used to represent the auxiliaries and modals which can come before the main verb. Now this rule has been made to have a generic rule which represents all possible combinations of modals and auxiliaries.

The possible combinations of modals and auxiliaries are taken from [1, p. 159]. They are also listed below:

	ACTIVE	PASSIVE
Present:	Sees	Is seen
Past:	Saw	Was seen
Modal:	May see	May be seen
Perfective:	Has seen	Has been seen
Progressive:	Is seeing	Is being seen
Modal + Perfective:	May have seen	May have been seen
Modal + Progressive:	May be seeing	May be being seen
Perfective + Progressive:	Has been seeing	Has been being seen
Modal + Perfective + Progressive:	May have been seeing	May have been being seen

Using the above table, we can also devise the following combinations of modals and auxiliaries including negation:

	ACTIVE	PASSIVE
Present:	does not see	Is not seen
Past:	did not see	Was not seen
Modal:	May not see	May not be seen
Perfective:	Has not seen	Has not been seen
Progressive:	Is not seeing	Is not being seen
Modal + Perfective:	May not have seen	May not have been seen
Modal + Progressive:	May not be seeing	May not be being seen
Perfective + Progressive:	Has not been seeing	Has not been being seen
Modal + Perfective + Progressive:	May not have been seeing	May not have been being seen

Result: We decided on the above analysis.

Future Work: