



### Revision History:

Name	Change Date	Version	Description of Changes
Tafseer Ahmed	13 Sep, 2004	4.1.0.1	created.
Tafseer Ahmed	27 Oct, 2004	4.1.0.2	Analysis is modified after meeting with Dr. Miriam Butt.
Tafseer Ahmed	4 Nov, 2004	4.1.0.3	Rules updated
Sara Hussain	17 <sup>th</sup> Jan, 2005	4.1.0.4	Added Kar phrase (KarP) and sentence level adjunct (S_Adjunct) in each rule
Sara Hussain	7 <sup>th</sup> Feb, 2005	4.1.0.5	Added gender agreement check for infinitivals in Subject and object position (KPmain)
Aasim Ali	05-AUG-2005	5.1.0.1	Documenting the analyses and modifications (on the basis of these analyses) made by Nayyara

**Rule ID:** UGR103

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

Sdec -> KPmain; @SAP @OBLIQUE (KPmain;) VPperf ;.  
Sdec -> KPmain; @SAP @OBLIQUE (KPmain;) VPperf;.  
Sdec -> KPmain; @SAP @OBLIQUE KPmain; VPperf;.  
Sdec -> KPmain; @SAP @OBLIQUE (KPmain;) VPperf;.

Sdec -> KPmain; @SAP @OBLIQUE (KPmain;) VPnonperf;.  
Sdec -> KPmain; @SAP @OBLIQUE (KPmain;) VPnonperf;.

Sdec -> KPmain; @SAP @OBLIQUE (KPmain;) VPraha;.  
Sdec -> KPmain; @SAP @OBLIQUE (KPmain;) VPraha;.

Sdec -> KPmain; @SAP @OBLIQUE KPmain; VPperf;.  
Sdec -> KPmain; @SAP @OBLIQUE KPmain; VPnonperf;.  
Sdec -> KPmain; @SAP @OBLIQUE KPmain; VPraha;.

Sdec -> KPmain; @SAP @OBLIQUE KPmain; VPmodal;.  
Sdec -> KPmain; @SAP @OBLIQUE (KPmain;) VPmodal;.  
Sdec -> KPmain; @SAP @OBLIQUE (KPmain;) VPmodal;.



### Rule Functional Description:

Sdec -> KPmain:^ SUBJ =!,! CASE =c NOM;  
@SAP  
@OBLIQUE  
(KPmain: ! CASE =c NOM, ! SEM\_TYPE =c {UNANIM\_CONC,ANIMAL,ABSTRACT}, ^ OBJ =!; )  
VPperf : ^ =!, ^ SUBJ CASE =c ! \_SUBJ\_CASE, ^ TNS\_ASP MODAL =c NONE,  
^ TNS\_ASP NEED =c NEG, ^ TNS\_ASP PERF =c POS, ^ TNS\_ASP PROG =c NEG,  
^ SUBJ PERS =c ! PERS, ^ SUBJ GEND =c ! GEND, ^ SUBJ NUM =c ! NUM,  
^ SUBJ RESPECT =c ! RESPECT, !VOICE =c ACTIVE;.

Sdec -> KPmain:^ SUBJ =!,! CASE =c NOM;  
@SAP  
@OBLIQUE  
(KPmain: ! CASE =c ACC,! SEM\_TYPE =c HUMAN, ^ OBJ =!; )  
VPperf : ^ =!, ^ SUBJ CASE =c ! \_SUBJ\_CASE, ^ TNS\_ASP MODAL =c NONE,  
^ TNS\_ASP NEED =c NEG, ^ TNS\_ASP PERF =c POS, ^ TNS\_ASP PROG =c NEG,  
^ SUBJ PERS =c ! PERS, ^ SUBJ GEND =c ! GEND, ^ SUBJ NUM =c ! NUM,  
^ SUBJ RESPECT =c ! RESPECT, !VOICE =c ACTIVE;.

Sdec -> KPmain:^ SUBJ =!,! CASE =c ERG;  
@SAP  
@OBLIQUE  
KPmain: ! CASE =c NOM, ! SEM\_TYPE =c {UNANIM\_CONC,ANIMAL,ABSTRACT}, ^ OBJ =!;  
VPperf : ^ =!, ^ SUBJ CASE =c ! \_SUBJ\_CASE, ^ TNS\_ASP MODAL =c NONE,  
^ TNS\_ASP NEED =c NEG, ^ TNS\_ASP PERF =c POS, ^ TNS\_ASP PROG =c NEG,  
^ OBJ PERS =c ! PERS, ^ OBJ GEND =c ! GEND, ^ OBJ NUM =c ! NUM,  
^ OBJ RESPECT =c ! RESPECT, !VOICE =c ACTIVE;.

Sdec -> KPmain:^ SUBJ =!,! CASE =c ERG;  
@SAP  
@OBLIQUE  
(KPmain: ! CASE =c ACC,! SEM\_TYPE =c HUMAN, ^ OBJ =!; )  
VPperf : ^ =!, ^ SUBJ CASE =c ! \_SUBJ\_CASE, ^ TNS\_ASP MODAL =c NONE,  
^ TNS\_ASP NEED =c NEG, ^ TNS\_ASP PERF =c POS, ^ TNS\_ASP PROG =c NEG,  
! NUM =c SG, ! GEND =c M, ! PERS =c 3, ! RESPECT =c NORESPECT, !VOICE =c ACTIVE;.

Sdec -> KPmain:^ SUBJ =!,! CASE =c NOM;  
@SAP  
@OBLIQUE  
(KPmain: ! CASE =c ACC,! SEM\_TYPE =c HUMAN, ^ OBJ =!; )  
VPnonperf : ^ =!,! \_SUBJ\_CASE =c {NOM,ERG}, ^ TNS\_ASP MODAL =c NONE,  
^ TNS\_ASP PERF =c NEG, ^ TNS\_ASP NEED =c NEG, ^ TNS\_ASP PROG =c NEG,  
^ SUBJ PERS =c ! PERS, ^ SUBJ GEND =c ! GEND, ^ SUBJ NUM =c ! NUM,  
^ SUBJ RESPECT =c ! RESPECT, !VOICE =c ACTIVE;.



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Sdec -> KPmain:^ SUBJ =!,! CASE =c NOM;

@SAP

@OBLIQUE

(KPmain: ! CASE =c NOM, ! SEM\_TYPE =c {UNANIM\_CONC,ANIMAL,ABSTRACT}, ^ OBJ =!; )

VPnonperf : ^ =!,! \_SUBJ\_CASE =c {NOM,ERG}, ^ TNS\_ASP MODAL =c NONE,

^ TNS\_ASP PERF =c NEG, ^ TNS\_ASP NEED =c NEG, ^ TNS\_ASP PROG =c NEG,

^ SUBJ PERS =c ! PERS, ^ SUBJ GEND =c ! GEND, ^ SUBJ NUM =c ! NUM,

^ SUBJ RESPECT =c ! RESPECT, !VOICE =c ACTIVE;.

Sdec -> KPmain:^ SUBJ =!,! CASE =c NOM;

@SAP

@OBLIQUE

(KPmain: ! CASE =c ACC,! SEM\_TYPE =c HUMAN, ^ OBJ =!; )

VPraha : ^ =!,! \_SUBJ\_CASE =c {NOM,ERG}, ^ TNS\_ASP MODAL =c NONE, ^ TNS\_ASP NEED =c NEG,

^ TNS\_ASP PROG =c POS, ^ SUBJ PERS =c ! PERS, ^ SUBJ GEND =c ! GEND,

^ SUBJ NUM =c ! NUM, ^ SUBJ RESPECT =c ! RESPECT, !VOICE =c ACTIVE;.

Sdec -> KPmain:^ SUBJ =!,! CASE =c NOM;

@SAP

@OBLIQUE

(KPmain: ! CASE =c NOM,! SEM\_TYPE =c {UNANIM\_CONC,ANIMAL,ABSTRACT}, ^ OBJ =!; )

VPraha : ^ =!,! \_SUBJ\_CASE =c {NOM,ERG}, ^ TNS\_ASP MODAL =c NONE, ^ TNS\_ASP NEED =c NEG,

^ TNS\_ASP PROG =c POS, ^ SUBJ PERS =c ! PERS, ^ SUBJ GEND =c ! GEND,

^ SUBJ NUM =c ! NUM, ^ SUBJ RESPECT =c ! RESPECT, !VOICE =c ACTIVE;.

Sdec -> KPmain:^ SUBJ =!,! CASE =c DAT;

@SAP

@OBLIQUE

KPmain: ! CASE =c NOM, ^ OBJ =!;

VPperf : ^ =!,! \_SUBJ\_CASE =c DAT, ^ TNS\_ASP MODAL =c NONE, ^ TNS\_ASP NEED =c NEG,

^ TNS\_ASP PERF =c POS, ^ TNS\_ASP PROG =c NEG, ^ OBJ PERS =c ! PERS,

^ OBJ GEND =c ! GEND, ^ OBJ NUM =c ! NUM, ^ OBJ RESPECT =c ! RESPECT,

!VOICE =c ACTIVE;.

Sdec -> KPmain:^ SUBJ =!,! CASE =c DAT;

@SAP

@OBLIQUE

KPmain: ! CASE =c NOM, ^ OBJ =!;

VPnonperf : ^ =!,! \_SUBJ\_CASE =c DAT, ^ TNS\_ASP MODAL =c NONE, ^ TNS\_ASP PERF =c NEG,

^ TNS\_ASP NEED =c NEG, ^ TNS\_ASP PROG =c NEG, ^ OBJ PERS =c ! PERS,

^ OBJ GEND =c ! GEND, ^ OBJ NUM =c ! NUM, ^ OBJ RESPECT =c ! RESPECT,

!VOICE =c ACTIVE;.



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Sdec -> KPmain:^ SUBJ =!,! CASE =c DAT;  
@SAP  
@OBLIQUE  
KPmain: ! CASE =c NOM, ^ OBJ =!;  
VPraha : ^ =!,! \_SUBJ\_CASE =c DAT, ^ TNS\_ASP MODAL =c NONE, ^ TNS\_ASP NEED =c NEG,  
^ TNS\_ASP PROG =c POS, ^ OBJ PERS =c ! PERS, ^ OBJ GEND =c ! GEND,  
^ OBJ NUM =c ! NUM, ^ OBJ RESPECT =c ! RESPECT, !VOICE =c ACTIVE;.

Sdec -> KPmain:^ SUBJ =!,! CASE =c DAT;  
@SAP  
@OBLIQUE  
KPmain: ! CASE =c NOM, ^ OBJ =!;  
VPmodal : ^ =!,! \_SUBJ\_CASE =c DAT, ^ TNS\_ASP MODAL =c ! TNS\_ASP MODAL,  
^ TNS\_ASP NEED =c NEG, ^ OBJ PERS =c ! PERS, ^ OBJ GEND =c ! GEND,  
^ OBJ NUM =c ! NUM, ^ OBJ RESPECT =c ! RESPECT, !VOICE =c ACTIVE;.

Sdec -> KPmain:^ SUBJ =!,! CASE =c NOM;  
@SAP  
@OBLIQUE  
(KPmain: ! CASE =c ACC,! SEM\_TYPE =c HUMAN, ^ OBJ =!; )  
VPmodal : ^ =!,^ TNS\_ASP MODAL =c ! TNS\_ASP MODAL, ^ TNS\_ASP NEED =c NEG,  
^ SUBJ PERS =c ! PERS, ^ SUBJ GEND =c ! GEND, ^ SUBJ NUM =c ! NUM,  
^ SUBJ RESPECT =c ! RESPECT, !VOICE =c ACTIVE;.

Sdec -> KPmain:^ SUBJ =!,! CASE =c NOM;  
@SAP  
@OBLIQUE  
(KPmain: ! CASE =c NOM,! SEM\_TYPE =c {UNANIM\_CONC,ANIMAL,ABSTRACT}, ^ OBJ =!; )  
VPmodal : ^ =!,^ TNS\_ASP MODAL =c ! TNS\_ASP MODAL, ^ TNS\_ASP NEED =c NEG,  
^ SUBJ PERS =c ! PERS, ^ SUBJ GEND =c ! GEND, ^ SUBJ NUM =c ! NUM,  
^ SUBJ RESPECT =c ! RESPECT, !VOICE =c ACTIVE;.

### Frequency: -

**Description:** This rule shows the sentence level production of Urdu Grammar.

*c-structure:* Sentence consists of Case Phrases (KP) and a Verb Phrase (VP). Sentence level adjunct phrase (@SAP) and oblique (@OBLIQUE) are optional and handled through macro.

*f-structure:* The Case Phrases can be Subject or Predlink according to their Case. The adjunct phrase and Xadjunct phrase act as adjuncts of a sentence.



**Example:**

وہ آیا۔  
- وہ سیب کھاتا ہے۔  
اس نے سیب کھایا۔  
سیب کھایا گیا۔  
اس سے سیب کھایا گیا۔  
- اسے سیب کھانا ہے۔  
- اسے بخار ہے۔  
- اسے سردی لگی۔  
- سیب میٹھا ہے۔  
- سیب ٹوکری میں ہیں۔  
- میز کے اوپر سیب ہیں۔  
- آج صبح سے بلی باغ میں ہے۔

**Rule Status:** Active

**Reference:** [1] Butt and King, “*The Status of case*”  
[2] Tara Mohanan, “Argument Structure in Hindi” Page 55.  
[3] Rajesh Bhatt, Survey, Dative Subject, Passivization.  
<http://web.mit.edu/rbhatt/www/24.956/>  
[4] Mirium Butt, Discussion at EGD\_ULP meetings.

**Related Rules:**

**Related POS:**

**Replaces:** - UGR001

**Reason:** -

**Replaced by:** -



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**Analysis:** Following is the analysis of the rule.

**Analysis 1:**

Urdu is free-order language. It means that phrases can change their place in a sentence. We have analyzed only the most commonly used phrase order of Urdu.

On the basis of Verbal Phrase structure and CASE of Subject, Urdu Sentences can be divided into following types:

**Usual Sentences:** It is the most commonly used type of Urdu Sentences. It consist of default behavior of all its constituent i.e. Subject is in Nominative case, and any verb can be part of the Complex Predicate. Example sentences are:

وہ سیب کھاتا ہے۔  
وہ سیب کھا رہا ہے۔

**Perfective Sentences:** Urdu like other South Asian language has special syntax for Perfective Sentences. The simplest model for this type of sentence is that Transitive Verbs requires Ergative Subject and Intransitive verbs like Nominative Subject. For Example,

Ergative Subject: اس نے سیب کھایا۔  
Nominative Subject: وہ آیا۔

But there are few examples in which the above rule fails. For Example,

وہ کرکٹ کھیلا۔  
اس نے تھوکا۔

Hence the Rule is that: if Subject of a Verb has control on action, then it will have Ergative Case, Otherwise it Verb will have Nominative case. We denote this property by PerfControl feature.

**Predicate Sentences:** The sentences having “fail-e-naqis” ( copular verb) has a subject and its modifier(called PREDLINK in LFG). There are two types of PREDLINK sentences.

- (1) سیب میٹھا ہے۔
- (2) ٹوکری میں سیب ہیں۔
- (3) سیب ٹوکری میں ہیں۔

In sentence 1, سیب is SUBJ and میٹھا is PREDLINK. In sentences 2 and 3, Grammatical Function identification is disputed. Tara Mohanan says that ٹوکری is SUBJ in sentence 3 and میں is case marker. But the problem is that in sentence 2, سیب becomes the SUBJ. Both sentences 2 and 3 are same except the difference in phrase order. This is why, we inferred that 2 is commonly order of sentence 3, and we will analyze both the sentences in similar way. i.e. سیب is SUBJ and ٹوکری میں is PREDLINK. Another argument in favor of this analysis is that there are many similar sentences that has postposition and nominal postposition phrase at start of the sentence. For example,

ٹوکری کے اندر سیب ہیں۔  
میز کے اوپر سیب ہیں۔

If we consider میں as Case Marker then we have to classify about all the postpositions and nominal postpositions as Case Marker.

Following sentence is an example of sentence having PredLink. It has Genitive Subject ('gari') and a Predlink (paihay').

گاڑی کے چار پہیے ہیں۔

**Passive Sentences:** Passive constructions in Urdu involves Auxiliary verb 'Ja'. The Subject of passive sentence (usually Logical Object) is in Nominative form. For Example:

سیب کھایا گیا۔(4)

An alternate analysis is that 'saib' is Object in above sentence, and a NULL subject is present in the sentence. This analysis says that 'larka' is Subject and 'saib' is Object in following sentence.



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لڑکے سے سیب کھایا گیا۔ (5)  
لڑکے کے ذریعے سیب کھایا گیا

The problem with first sentence is the multiple usage of word 'ja'. It is used as Passive Auxiliary as in (4), but it is also used as Ability Auxiliary and Habitual Auxiliary as in following examples.

Ability. اس سے چلا نہیں جاتا۔

Habitual. وہ کھاتا چلا جاتا ہے۔

Sentence (5) is similar to Ability sentence. Hence we will analyze it as different type of sentence. Sentence (6) is a passive sentence, but "ke zarye" is used as an ADJUNCT. Historically "ke zarye" examples are not present in traditional text. It is introduced after interaction with English in which "by Somebody" is present in passive sentence.

**Ability Sentences:** The syntax of Ability sentences is similar to Passive Sentences, but these sentences require Dative Subject. The sentences shows ability/disability of Subject to perform the action.

**Dative Subject Sentences:** The verbs of these sentences require a Dative Subject. Dative subject is required due to different types of Verbal Phrases. Modal verbs like 'chahiye' and 'par' need dative subject as:

اسے پڑھنا چاہیے تھا۔

اسے جانا پڑ سکتا ہے۔

Similarly verb 'ho' has a special usage which needs dative subject. For example:

اسے بخار ہے۔

اسے بخار تھا۔

The verb 'ho' named as 'hay\_dat' is different from the verb 'ho' in following examples.

اسے بخار ہوا۔

اسے بخار ہو سکتا ہے۔

Other verbs like 'dikh' and 'lag' also needs Dative Subject.

اسے سردی لگی۔

مجھے تارا دکھا۔

In Summary, Subjects can be Nominative, Dative, Genitive and Ergative. Object can be Nominative or Accusative. The transitive Verb can be used in a sentence without its object. For example:

تم نے دیکھا۔

### Analysis 2:

This was observed that resolving the type of sentence on the basis of syntax in the early stages is more efficient and effective for the application; therefore, some checks have been introduced at sentence level (which were being performed at some deeper level in the parse tree) to prune the huge production-set to the most suitable subset, as early as possible.

Following are the major types of sentences on the basis of Verb Phrase:

Perfective (VPperf), Non-Perfective (VPnonperf), Progressive (VPraha), Modal (VPmodal), Infinitival (VPinf);

**VPperf:** There are subtle differences among multiple productions of VPperf:

CASE		Example
Subject	Object	
Nominative	Accusative	لڑکا سلیم کو ملا / ملا ہے / ملا تھا / ملا ہوگا۔
Nominative	Nominative	لڑکا گھر گیا / گیا ہے / گیا تھا / گیا ہوگا۔



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Ergative	Nominative	میں نے کتاب پڑھی / پڑھی ہے / پڑھی تھی / پڑھی ہوگی -
Ergative	Accusative	میں نے تمہیں دیکھا / دیکھا ہے / دیکھا تھا / دیکھا ہوگا -
Dative	Nominative	لڑکے کو سردی لگی / لگی ہے / لگی تھی / لگی ہوگی -

Everything else is more or less same in all productions of VPpref.

**VPnonperf:** There are subtle differences among multiple productions of VPnonperf:

CASE		Example
Subject	Object	
Nominative	Accusative	لڑکا مجھے ملتا ہے / ملے گا -
Nominative	Nominative	لڑکی کتاب پڑھتی ہے / پڑھے گی -
Dative	Nominative	لڑکے کو سردی لگتی ہے / لگے گی -

Everything else is same in all productions of VPnonpref.

**VPraha:** There are subtle differences among multiple productions of VPraha:

CASE		Example
Subject	Object	
Nominative	Accusative	لڑکا تمہیں دیکھ رہا ہے / تھا / ہوگا -
Nominative	Nominative	لڑکی کتاب پڑھ رہی ہے / تھی / ہوگی -
Dative	Nominative	لڑکے کو سردی لگ رہی ہے / تھی / ہوگی -

Everything else is same in all productions of VPraha.

**VPmodal:** There are subtle differences among multiple productions of VPmodal:

CASE		Example
Subject	Object	
Nominative	Accusative	لڑکا تمہیں دیکھ سکتا ہے / تھا / ہوگا -
Nominative	Nominative	لڑکی کتاب پڑھ سکتی ہے / تھی / ہوگی -
Dative	Nominative	لڑکے کو سردی لگ سکتی ہے / تھی / ہوگی -

Everything else is same in all productions of VPmodal.

### Infinitival Agreement

Gender agreement of infinitival verb with its embedded object is dependant on its position in the sentence. When ever the subject or the object is an infinitival occurring in nominative case this agreement varies. When an infinitival act as an object and its subject is in ergative, dative or instrumental case then this agreement is positive. For other cases it is negative. Reasons behind these agreements are discussed in detail in the document UGR104.

**Result:** We decided on analysis 2.

### Future Work:

VPchahiyay





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