

**INDICATIONS OF URDU TETRAVALENT VERBS
HAVING 'OBLIQUE AGENTS'
IN THE ARGUMENT STRUCTURE**

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Abstract

The data and analysis of the Urdu instrumental case marker '*se*' show that its role is quite diverse and it adopts various thematic roles in the argument structure of verbs. The marker '*se*' marks agents, instruments, time, space, postpositional phrases, adverbial phrases, etc. The analysis presents that semantic considerations about nouns help disambiguate classification of these roles. The marker '*se*' marks '*oblique agents*' for Urdu causative verbs form that ends in morpheme *-vaa*. This paper proposes that '*oblique agents*' exist as verb argument and result in tetravalent verbs. Semantic classification of case markers is used for mapping the four verb arguments.

1 Introduction

This paper presents key points from my dissertation work. The first section presents the classification of Urdu case markers and postpositions based on modeling requirement. In the second section, the data and analysis show that the role of the instrumental case marker '*se*' adopts various thematic roles in the argument structure of verbs. The marker '*se*' marks agents, instruments, time and space nouns, etc. The analysis presents that semantic considerations about nouns simplify classification of these roles. In the third section, the classification of marker '*se*' is used to mark '*oblique agents*' as verb argument for certain Urdu causative verbs. These '*oblique agents*' result in Urdu tetravalent causative verbs. This paper proposes this analysis and makes use of semantic case marking for their argument mapping.

2 Classification of Case Markers and Postpositions

The 'case marker' is generally attached morphologically at the lexical level for languages that employ case marking. The Urdu-Hindi nouns also change form at the lexical level, which is sometimes referred to as a case (Mohanani 1994; Arsenault 2002). However, the case markers in Urdu-Hindi, which help in mapping the verb argument structure appear as syntactic, not lexical, unit with the noun. To distinguish between syntactic case marking, morphological case marking and other postpositions, it is proposed that these may be classified based on the way they are handled or according to their function. The case marking and postposition system in Urdu/Hindi have been divided into five classes: (a) noun form, (b) core case markers, (c) oblique case markers, (d) possession markers and (e) 'pure' postpositions. The division of case markers into these categories is primarily based on the difference in the computational modeling required in each case. The division of case markers may be based on morphological (lexical), structural (syntactic) and on

functional (semantics) reasons. Therefore, the proposed division borrows heavily from the division of case markers presented by (Butt and King 1999), which includes lexical, structural, semantic and quirky case. However, the division presented here separates possession marking and also includes the use of semantic features to distinguish core and oblique verb arguments. Figure 1 shows the proposed hierarchical structure of case markers and postpositions in Urdu and Hindi.

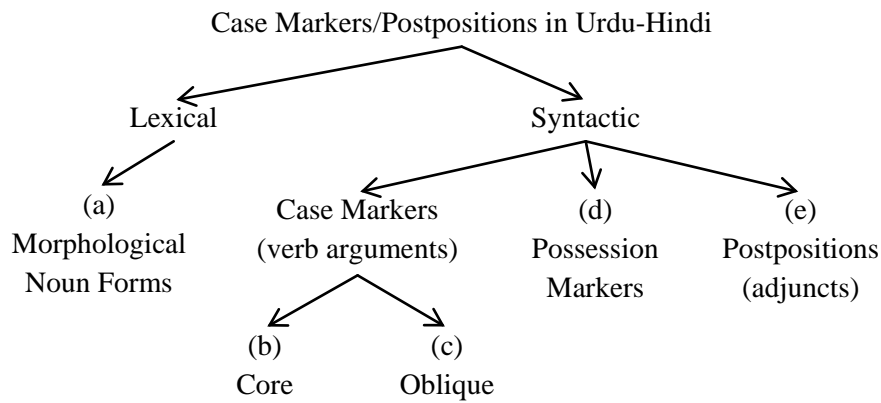


Figure 1: Classification of Case Markers/ Postpositions in Urdu-Hindi

2.1 Noun Forms

In the classification, the class (a) contain noun morphological forms. It is well known that nouns in Urdu/Hindi appear in nominative, oblique and vocative morphological forms. The syntactic coordination tests show that these noun suffixes like ‘-e’ in the oblique noun forms cannot be used in coordinated structures (Butt and King 2004) as shown in (1). The suffix is tightly coupled with the word as a unit, and this suffix cannot be shared in the coordination. These suffixes are, therefore, lexical in nature and need to be handled morphologically at the lexical level, while other case markers and postposition can be coordinated and those are therefore syntactic in nature. The example (2) shows that the ergative marker ‘ne’ can be used in a coordinated structure.

- | | |
|--|--|
| <p>(1) (a) <i>ghoR-e or bakr-i</i>
horse-sg.M.obl and goat-sg.M.obl
‘horses and goats’</p> | <p>(b) *<i>ghoR or bakr-i</i>
*horse and goat-sg.M.obl
‘horses and goats’</p> |
| <p>(2) (a) <i>ghoR-e=ne or bakr-i=ne</i>
horse=erg and goat=erg
‘horses and goats’</p> | <p>(b) <i>ghoR-e aor bakr-i =ne</i>
horse and goat =erg
‘horses and goats’</p> |

The lexical suffixes do not play a direct role in linking or mapping to the verb argument structure, as bare noun form cannot indicate which

grammatical function the noun may adopt. The oblique form is used with case markers and postpositions, which impart verb categorization features. However, the vocative form¹ is used as a ‘subject’ in the imperative mood. The nominative form appears in the absence of case marker or postposition.

2.2 Core Case Markers

The core case markers are included in class (b), which assign nouns a universal grammatical relation like subject, object and indirect object. These core grammatical relations in a sentence are directly controlled by the verbal predicate and these help noun find a position in the argument structure of the verb. These contribute to the verb transitivity and valency. The nominative, ergative, dative and accusative cases have been analyzed extensively in the literature (Mohanani 1994; Butt and King 2004). The case markers and corresponding grammatical relations are summarized as follows:

2.2.1 Nominative Case

If there is no case marker with the noun (or the noun phrase), the noun is said to be in the nominative case, which is the default case for noun phrases, as shown in (3) below. Here both ‘boy’ and ‘book’ are in the nominative form, which assume subject and object functions respectively. Both subject and object have nominative case but the ‘animate’ attribute helps to determine that a ‘boy’ is the more suitable subject.

- (3) *laRk-aa* *ketaab* *xarid-e* *g-aa*
 boy-sg.M=*nom* book=*nom* buy-subj.obl AUX-fut-sg.M
 ‘A boy will buy a book’

2.2.2 Ergative Case

Noun phrases marked with the case marker ‘*ne*’ express the role of an actor or agent that fills the ‘subject’ argument in the list of grammatical functions. It is well known that the ergative case appears with verbs in a perfective form having a valency greater than one. An example is shown in sentence (4) for the transitive verb ‘*xarid-naa*’ (to buy).

- (4) *laRk-e=ne* *ketaab* *xarid-i*
 boy-sg.M=*erg* book.*nom* buy-perf.sg.F
 ‘A boy bought a book’

The example in (4) contains one ergative and one nominative argument. The verb-noun agreement is with the highest nominative argument

¹ The vocative form is governed by the verb in the imperative mood, therefore it is the only example of ‘lexical case’ in Urdu or Hindi

in the argument structure of the verb. In this example, the subject NP is ergative and the object NP is nominative. Therefore, the verb agreement is with the object '*ketaab*' (the book). Some intransitive verbs are usually used without ergative case but they are also known to be acceptable in the ergative case for deliberate and purposeful actions (Abdul-Haq 1991; Mohanan 1994; Butt and King 2004).

2.2.3 Dative Case

In the dative case, a noun phrase marked with case marker '*ko*', expresses the role of an indirect object, recipient, beneficiary or receiver as the third argument in the argument structure of a ditransitive verb, where the other two arguments are the subject and the object. An Urdu sentence expressing dative case is shown in (5), where 'book' is a direct object and the receiver 'boy' is an indirect object marked with the dative case.

- (5) *mañ=ne laRk-e=ko ketaab d-i*
 I=erg boy-sg.obl=dat book.nom buy-perf.sg.F
 'I gave the book to the boy'
- (6) *laRk-e=ko sardi lag rahi hai*
 boy-sg.obl=dat cold.nom feel-pres.continuous.sg.F
 'The boy is feeling cold'

Urdu verbs which express some feeling or state change of someone do not take ergative or nominative subjects and employ the dative case for subjects as shown in (6). Some Urdu verbs that show 'physical feelings' like cold '*sardi*', hot '*garmi*', hunger '*bhuk*', thirst '*pe-yaas*', etc. are used in the dative case pattern shown in (6). Similarly, a state change of subjects is expressed in the dative case, for verbs like fever '*buxaar*', headache '*sar-dard*', love '*pe-yaar*', hate '*nafrat*', etc.

2.2.4 Accusative Case

The accusative case of a noun or noun phrase is represented using the case marker '*ko*', which expresses direct object, undergoer or patient, usually for transitive verbs. The accusative marker '*ko*' is phonetically the same as the dative case marker; however, it marks a different grammatical function and therefore represents a separate case. An example is sentence (7), in which 'dog' is in the accusative case and occupies the patient or 'object' grammatical function position in the argument structure of the verb. The accusative case is mostly used with transitive verbs, while dative case is used with ditransitive verbs to mark 'object' and 'indirect object' respectively. The accusative case is normally used to mark animate nouns as objects, similar to the ergative case, which is used to mark animate nouns as subjects. The accusative marker is usually necessary, especially for proper, animate nouns. The 'accusative case' of Urdu needs a much detailed analysis.

- (7) *aakmal=ne* *kot't-e=ko* *maar-aa*
 Akmal=erg dog-sg.obl=acc beat-perf.sg.M
 'Akmal beat a dog'

2.3 Oblique Case Markers

The class (c) of case markers in Urdu includes oblique case markers, which assign nouns the oblique grammatical relation associated with a semantic role: these are governable by the verbal predicate through its argument structure. A noun phrase marked with an oblique case is not an optional phrase in a sentence, as its presence is predictable from the argument structure of the verb, in contrast to an optional postpositional phrase, which is not predictable from the argument structure. As English does not have a case marking system, the oblique arguments of the verbal predicate are treated as prepositional phrases. In strong case-marking languages, like Urdu, the oblique arguments may be treated as case marked rather than 'simple' postpositional phrases. For some Australian languages, such as Warlpiri, case marked oblique phrases have been observed (Nordlinger 1998). Some Urdu markers that act as the oblique case markers are:

<i>se</i>	instrument, space, time, etc.
<i>meñ</i>	in
<i>par</i>	on, at

The oblique case marked noun phrases are controlled by the argument structure of the verb and therefore these are counted in the verb's valency. '*nekaal-naa*' (to take out), '*ra^h-naa*' (to put), and '*Daal-naa*' (to put in) are transitive verbs but their argument structure contains three arguments, as shown in (8), resulting in a valency of three. For the verb '*nekaal-naa*' (to take out) one subject, one source location and one object is required, while for the verb '*ra^h-naa*' (to put) one subject, one destination location and one object is required. Two examples of oblique case markers in Urdu are shown in (9) and (10). These source or destination locations are not just bare locations in the form of post positions, because if we use destination location with '*nekaal-naa*' and source location with '*ra^h-naa*', the sentence will not be acceptable as shown in (11) and (12).

- (8) *nekaal-naa* < 'agent', 'source location', 'patient' >
ra^h-naa < 'agent', 'destination location', 'patient' >
- (9) *laRk-e=ne* *ferej=se* *paani* *nekaal-aa*
 boy-sg.M=erg fridge=source water=nom take out-perf.sg.M
 'The boy took the water out of the fridge'

- (10) *aadmi=ne kamr-e=meñ saamaan rak^h-aa*
 man-sg.M=erg room=dest luggage put-perf.sg.M
 ‘The man put the luggage in the room’
- (11) **laRk-e=ne ferej=meñ paani nekaal-aa*
 boy-sg.M=erg fridge=dest water=nom take out-perf.sg.M
 ‘The boy took out the water in the fridge’
- (12) **aadm-i=ne kamr-e=se saamaan rak^h-aa*
 man-sg.M=erg room=source luggage put-perf.sg.M
 ‘The man put the luggage from the room’

2.4 Possession Marking

The fourth class of postpositions in Urdu, class (d), contains possession markers and is represented by the genitive markers and this class is different from the classes of case markers due to the following reasons:

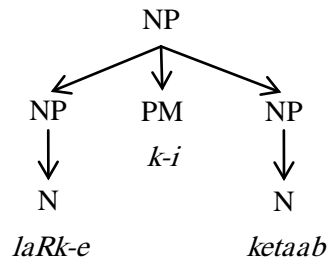
1. The possession markers appear between two nominals and cannot form a ‘noun phrase’ by combining with just one nominal
2. The possession markers change form to agree in gender and number with the second nominal
3. The possession markers designate that the first nominal is the possessor of the second nominal
4. The possession markers are not controlled by a verbal predicate and therefore do not directly mark a grammatical function

These four characteristics suggest that a ‘genitive’ or ‘possession’ marker is distinct from a case marker. Therefore, for these markers a new term ‘possession marker’ instead of ‘genitive case marker’ is proposed. There are three possession markers in Urdu, which require the first nominal in the oblique form and gender-number agreement with the second nominal.

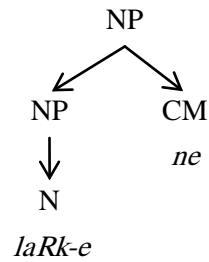
Possession Marker	Gender	Number
<i>kaa</i>	masc	sg
<i>ki</i>	fem	–
<i>ke</i>	masc	pl

The possession markers define a possessor and a possessee relationship between two noun phrases. The possessive markers require that the first noun (or noun phrase) is in ‘oblique’ form and require number and gender agreement with the second noun (or noun phrase). The possessive noun phrases, therefore, require two nouns (or noun phrases) one each on the left and right side of the marker, as shown in noun phrases (13), (14) and (15).

- | | | | | |
|------|----|---------------------------------|------------------------|-----------------------------|
| (13) | NP | <i>laRk-e</i>
boy-sg.obl.M | <i>k-i</i>
PM-sg.F | <i>ketaab</i>
book.sg.F |
| (14) | NP | <i>gaaR-i</i>
car-sg.F | <i>k-aa</i>
PM-sg.M | <i>taal-aa</i>
lock.sg.M |
| (15) | NP | <i>gaaR-i</i>
car-sg.F | <i>k-e</i>
PM-pl.M | <i>taal-e</i>
lock.pl.M |
| (16) | NP | * <i>laRk-e</i>
boy-sg.obl.M | <i>k-i</i>
PM-sg.F | |
| (17) | NP | * <i>gaaR-i</i>
car-sg.F | <i>k-aa</i>
PM-sg.M | |



(a) Possession Marker (PM)



(b) Case Marker (CM)

Figure 2: Possession Marker versus Case Marker

Figure 2 shows phrase structures of ‘possession marker’ (PM) and ‘case marker’ (CM). To make a well-formed noun phrase, a possession-marker requires two noun phrases, one on the left and one on the right side of a possession-marker, while a case marker just requires a noun phrase to its left. Using a possessive marker as a case marker results in phrases like the ones shown in (16) and (17), which cannot be used at a place where a noun phrase is required. Such phrases are incomplete ‘noun phrases’ and need another noun phrase for the completion. In other words, the ‘possessive marker’ has a valency for combining with two noun phrases, while ‘case marker’ has a valency for combining with one noun phrase.

2.5 Postpositions

The class (e) represents pure postpositions, these postpositions are not controlled by a verbal predicate and a sentence is complete in its meaning with or without postpositional phrases. Postpositional phrases are optional because these are not controlled by the argument structure of the verb. These, therefore, are counted neither in the transitivity nor in the valency of a verb. The semantic features of nouns, as employed for case markers, are also important for better machine translation of the postpositional adjunct phrases from one natural language to another language. Urdu has a large list of postpositions that act as adjuncts in Urdu.

- (18) *aadm-i* *kamr-e=meñ* *k^haanaa* *k^haa rahaa hai*
man-sg.M=nom room=loc food eat-sg.M.prog
'The man is eating food in the room'

For example, the sentence in (18) is complete, even if the postpositional phrase '*kamr-e meñ*' (in the room) is omitted. The postpositional phrases add information to the event happening but are not directly related to the argument structure of the verbal predicate. There may be zero or more postpositional phrases, which appear as a set of adjuncts to the verbal predicate.

3 Classification of Cases Marked with 'se'

After presenting a classification of postpositions and case markers in Urdu, the classification of cases marked with 'se' is presented in this section. The case marked with 'se' is usually treated as the 'instrumental case', which adopts different roles (Mohan 1994; Butt and King 2004). The case marker 'se' is very versatile and noun phrases marked with 'se' occupy different grammatical relations. It fills subject, object, indirect agent and other oblique argument roles that are controlled by the verb's argument structure and also 'se' as a postposition appears in a postpositional phrase or in an adverbial phrase, which act as an adjunct to main verb phrase. Sometimes 'se' is used for comparison between two things and sometimes it is used with adjectives. It is proposed that it be classified according to its role function, instead of terming it a bare 'instrumental case' marker in all cases.

3.1 Marker 'se' after an Animate Noun – (Agentive)

An animate noun (or noun phrase) marked with the case marker, 'se', is categorized as an 'agentive case' and it occupies the 'subject' or 'oblique agent' role in the verb's argument structure. Sentence (19) shows an agent in the passive voice form, where the focus is on the object 'letter', which appears in the nominative case and therefore the gender-number agreement of the verb is with the object. In Urdu, the agent in the active voice is assigned

‘nominative’ or ‘ergative’ case, while in the passive voice it is changed to ‘agentive case’. For English sentences in the passive voice, the subject and object positions are interchanged and therefore it is assumed that the object (in active voice) becomes the subject (in passive voice). While in Urdu, the position of the subject and the object are relatively less important due to the freer phrase order in Urdu.

- (19) *xat* *laRk-e=se* *lek^h-aa* *ga-yaa*
 letter.sg.M=nom boy.sg.M=agent write-perf.sg.M go-perf.sg.M
 ‘A letter was written by a boy’
- (20) *xat* (*X=se*) *lek^h-aa* *ga-yaa*
 letter.sg.M=nom (*X=agent*) write-perf.sg.M go-perf.sg.M
 ‘A letter was written (by someone)’

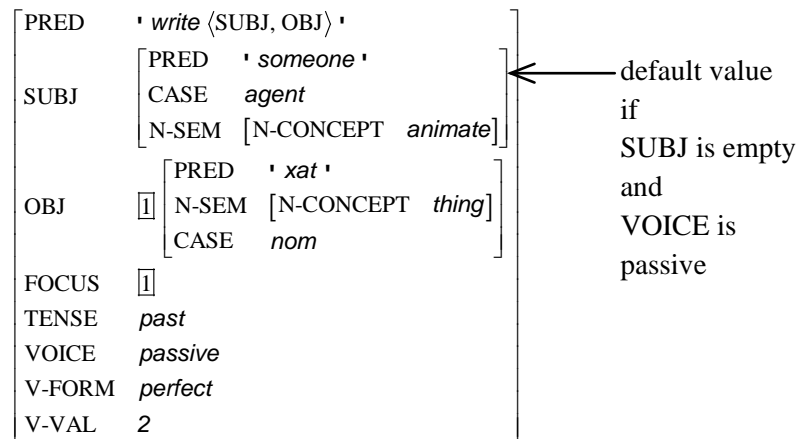


Figure 3: F-Structure of ‘*xat (X=se) lek^h-aa ga-yaa*’

For example, for the passive sentence in (19), in both English and Urdu, the ‘doer of the action’ is a ‘boy’ and the ‘undergoer of the action’ is a ‘letter’; therefore according to the thematic hierarchy they may fill the subject and object arguments respectively. The analysis of the passive, *majhool*, presented here assumes that in the passive voice, the primary focus is on the undergoer and the agent becomes secondary, and therefore sometimes is omitted. If the agent is omitted from a passive sentence, then it is ‘semantically implied’ as there is a slot for an ‘oblique agent’ in the argument structure of the verb. We cannot assume that for an action there is no actor. Therefore, for sentence (20), an unknown agent ‘X’ is assumed to fill the ‘writer’ slot of the verb ‘write’. This work analyzes the passive by assuming that there is no change in the verb’s argument structure, as shown in Figure 3, the FOCUS attribute points to OBJ and a default SUBJ is assumed if it is omitted in a passive sentence.

3.2 Marker 'se' with an Animate Noun – (Comitative)

Some verbs represent a reciprocal activity, which is performed mutually between two (or more) animate and/or human subjects and objects. In these activities, the presence of each participant is needed to perform the activity. The case marker 'se' is used to mark animate participating nouns for grammatical 'object' position in the verb's argument structure. Here the marked noun is undergoer or experiencer of the action involved and thus occupies object position. An example sentence is shown in (21). Again, it is the argument structure of the verb, which requires an object marked with the case marker 'se', instead of nominative or accusative case. The verb is neither causative nor is it in the passive. The verb's argument structure requires 'ergative case' for its subject and 'participant case' for its object. This case is usually translated in English as a prepositional phrase employing 'with' or 'from' as a preposition.

- (21) *Haamed=ne Hameed=se baat k-i*
Hamid=erg Hameed=participant talk=nom do.perf.sg.F
'Hamid talked with Hameed'

3.3 Marker 'se' with An Instrumental Noun – (Instrumental)

The inanimate nouns (or noun phrases) known as instrumental nouns in Urdu, *æsm-e-aalah*, are marked with the case marker 'se' and these are categorized here as 'instrumental case'. These are typically used by some agent or actor as an aid to accomplish some task by himself (or herself). Example sentences are given in (22) and (23). The noun phrases in 'instrumental case' assume oblique grammatical functions and sometimes act as adjuncts to a sentence. This case is usually translated in English as a prepositional phrase employing 'with' as a preposition.

- (22) *laRk-e=ne pensel=se xat lek^h-aa*
boy-sg.M=erg pencil.sg.F=inst letter write-perf.sg.M
'A boy wrote a letter with the pencil'
- (23) *maa^N=ne ch^hur-i=se seb kaat-aa*
mother-sg.F=erg knife-sg.F=inst apple=nom cut-perf.sg.M
'The mother cut the apple with the knife'

3.4 Marker 'se' with various Spatial Nouns

The verbs that depict activities related to movement or travel require various inanimate noun (or noun phrase) marked with the case marker *se* to convey information about 'transportation means', 'vehicle', 'path', 'passage' or 'source location'. The sentence in (24) shows an example, where someone traveled by boarding a vehicle, and the noun representing the vehicle is

marked with the case marker ‘*se*’. The sentence in (25) describes a *path* and the one in (26) describes a *passage* followed in a journey.

- (24) *us=ne* *jahaaz=se* *safar* *ki-aa*
 He/She-sg=erg plane.sg.M=vehicle travel.sg.M do-perf.sg.M
 ‘He/She traveled by plane’
- (25) *us=ne* *saRak=se* *safar* *ki-aa*
 He/She-sg=erg road.sg.M=path travel.sg.M do-perf.sg.M
 ‘He traveled by road’
- (26) *vo* *darwaaz-e=se* *kamr-e=meñ* *aa-i*
 She-sg=nom door-obl.sg.m=passage room=loc.in come-perf.sg.F
 ‘She came into the room through the door’

3.5 Marker ‘*se*’ with various Temporal Nouns

Temporal nouns, in Urdu known as *æsm-e-zarf-e-zamañ*, refer to ‘time’ or ‘duration’, and when these accompany the marker ‘*se*’, they represents temporal case as shown in (27) and (28). These cases are usually translated in English as a prepositional phrase by using ‘since’ and ‘for’ as a preposition.

- (27) *vo* *SobaH=se* *maqaalah* *lek^h rahaa hai*
 He/She-sg=nom morning=temporal paper=nom write.root.sg.M.cont.pres
 ‘He has been writing a paper since morning’
- (28) *vo* *do den=se* *tomhaaraa* *entezaar kar rahi hai*
 She-sg=nom two days=temporal your=nom wait.root.sg.F.cont.pres
 ‘She has been waiting for you for two days’

3.6 Marker ‘*se*’ with Adverbs – (Adverbial Usage)

Adverbs add information to a verb. In English adverbs could be formed morphologically from adjectives such as hurriedly, carefully, and attentively. In Urdu to form an adverbial phrase from a noun, the marker ‘*se*’ is used, normally with those nouns that represent various ‘concepts’. Examples of adverbial phrases in Urdu are shown in sentences (29) and (30). These are normally translated in English using an adverb and alternately these can be translated using prepositions such as ‘in a hurry’, ‘with keenness’ and ‘with attention’ instead of the adverbs ‘hurriedly’, ‘keenly’ and ‘attentively’.

- (29) *vo* *jaldi=se* *sakool* *pohanch-i*
 He/She-sg=nom hurriedly=adverbial school reach-perf.sg.F
 ‘She reached school hurriedly’

- (30) *vo shaoq=se sabaq pafh-taa hai*
 He/She-sg=nom keenly=*adverbial* lesson read-repeat.sg.M AUX=pres
 ‘He reads the lesson keenly’

3.7 Marker ‘se’ with Infinitives

Urdu infinitives (also called ‘verbal nouns’) are marked with ‘se’ and sometimes with other markers. Some example sentences with infinitives marked with ‘se’ are shown in (31). These phrases are normally translated in English by using an infinitive (to + verb) or a prepositional phrase using English gerund form (-ing).

- (31) *use paRh-ne=se nafrat hai*
 He/She=acc/dat read-inf.obl.m=inf hatred=nom be.pres
 ‘He/She has hatred for reading’
- (32) *mojh-e ger-ne=se chaoT lag-i*
 I=acc/dat fall-inf.obl.m=inf injury.sg.F=nom AUX-perf.sg.F
 ‘I got an injury from falling’

3.8 Marker ‘se’ for Comparison of two Similar Nouns

The marker ‘se’ is also used in Urdu for the comparison between two noun phrases in the indicative. Two examples of such cases are shown in (33) and (34). The semantic concept of two nouns being compared is the same. Dissimilar nouns may not be compared.

- (33) *ye jootaa us=se behtar hai*
 this=pro shoe=nom that.pro=comp better AUX.pres
 ‘This shoe is better than that (shoe)’
- (34) *Zafar mozzafar=se lambaa hai*
 Zafar=nom Muzzafar=comp taller AUX.pres
 ‘Zafar is taller than Muzzafar’

4 Argument Structure of Causatives Verbs

After proposing classification of postpositions in Urdu based on modeling requirements, and especially the need of semantic information to classify cases marked with ‘se’, the mapping of verb arguments of the causative verbs based on above classification may be analyzed in this section. The Urdu and Hindi languages use a morphological causative formation, in contrast to English which engages verbs like ‘make’, ‘get’, ‘have’, ‘help’ or ‘let’ for representing causative structures. The causative verb forms (or transitivized verb forms) in Urdu are normally derived from intransitive and transitive verb-root-forms by adding the suffixes: *-aa* and *-vaa*. Adding these suffixes to the root-form of a verb creates the stems of new verbs. Our analysis proposes that this causativization is normally a valency increasing

process in Urdu, which changes not only the argument structure of the verb but also the semantics conveyed. The formation of higher valency causative argument structure from the univalent and bivalent verbs can be seen in the examples presented in this section.

The example in (35) shows a univalent verb '*ger-naa*' (to fall), which requires an unergative subject. The causative form 1 of the verb is '*ger-aa-naa*' (to make someone fall), which is a bivalent verb as shown in (36). It requires an ergative agent for the perfect verb form and a nominative agent otherwise. The verb '*ger-aa-naa*' requires an accusative object if the object is 'animate' and a nominative object otherwise. The causative form 2 of the verb is '*ger-vaa-naa*' (to make someone fall through someone), which is a trivalent verb as shown in (37).

- (35) *Haamed* *ger-aa*
Hamid.sg.m=nom fall.perf.sg.m
'Hamid fell (down)'
- (36) *Hameed=ne* *Haamed=ko* *ger-aa-yaa*
Hameed.sg.m=erg Hamid.sg.m=acc fall-make.caus1.perf.sg.m
'Hameed caused Hamid fall (down)'
- (37) *Hameed=ne* *Haamed=ko* *aeHmad=se* *ger-vaa-yaa*
Hameed=erg Hamid=acc Ahmad=agent fall-make.caus2.perf.sg.m
'Hameed engaged Ahmad to cause Hamid fall (down)'
- (38) *Hameed=ne* *Haamed=ko* (*X=se*) *ger-vaa-yaa*
Hameed=erg Hamid=acc (*X=agent*) fall-make.caus2.perf.sg.m
'Hameed engaged someone to cause Hamid fall (down)'

It is often argued that the 'intermediate agent' marked with '*se*' is optional and even after semantically recognizing the presence of an 'intermediate' or 'logical' agent, it is assumed that the presence of an 'intermediate agent' is not dictated by the verb's argument structure because it is syntactically optional (Mohan 1990; Bhatt and Embick 2003; Butt 2003). However, this work proposes the following:

1. The 'intermediate agent' marked with '*se*' is governed by the argument structure of the causative verb form 2.
2. The 'intermediate agent' marked with '*se*' is *not optional*; however, it is sometimes *omitted* either because the 'intermediate agent' is already known in a discourse, requires least focus or cannot be precisely stated or does not require focus for the current discussion.

This work presents the following arguments to support the above stated assumptions:

1. The ‘intermediate agent’ marked with ‘*se*’ cannot be used with the causative verb form 1. The use of an ‘intermediate agent’ is syntactically incorrect, because it does not act as a normal adjunct.
2. If the ‘intermediate agent’ marked with ‘*se*’ is omitted, then it is semantically implied. Because, if two sentences have the same words with the same syntactic structures, such that one employs causative verb form 1 and the other uses causative verb form 2, then the interpretation of the two sentences should be different. For example, if the sentence in (36) is compared with the sentence in (38), the different interpretations are seen, because the indication of the ‘intermediate agent’ is embedded in causative form 2; these semantics can always be contrasted in similar sentence pairs.
3. The ‘intermediate agent’ marked with ‘*se*’ when used with causative verb form 2 does not add extra meaning to the interpretation but only gives the information about the ‘intermediate agent’. In (38), the ‘intermediate agent’ is omitted and the interpretation is ‘Hameed caused Hamid fall down, *through someone*’, but in (37) the interpretation is more specific about the ‘intermediate agent’ that ‘Hameed caused Hamid fall down, *through Ahmad*’.
4. Omitting a syntactic unit is not a new concept. Urdu and Hindi are ‘pro-drop’ languages, i.e., sometimes these languages can form a sentence without an overt noun (or a pronoun), if the referent of the noun (or noun phrase) could be semantically implied in a discourse.

The negative sentences employing causative form 1 and 2 in (39) and (40), similar to those given in (36) and (38), have complementary interpretations. The interpretation for example (39) is that it is not Hameed who made Hamid fall down, but he might have engaged someone to do this task. In example (40), which uses causative form 2 and omits the ‘*se*’ phrase, the interpretation is ‘Hameed did not engage *any* ‘intermediate agent’ to cause Hamid fall down’; however he himself might have done so. In contrast, the interpretation in (41) is ‘Hameed *did not engage Ahmad* to make Hamid fall down, although he *might have engaged someone else* to cause Hamid fall down.’

- (39) *Hameed=ne Haamed=ko nahiñ ger-aa-yaa*
 Hameed.sg.m=erg Hamid.sg.m=acc not fall-make.caus1.perf.sg.m
 ‘Hameed didn’t cause Hamid fall (down)’
- (40) *Hameed=ne Haamed=ko (X=se) nahiñ ger-vaa-yaa*
 Hameed=erg Hamid=acc (X=agent) not fall-make.caus2.perf.sg.m
 ‘Hameed didn’t engage **anyone** to cause Hamid fall (down)’
- (41) *Hameed=ne Haamed=ko aHmad=se nahiñ ger-vaa-yaa*
 Hameed=erg Hamid=acc Ahmad=agent not fall-make-caus2.perf.sg.m
 ‘Hameed didn’t engage Ahmad to cause Hamid fall (down)’

The example of a transitive verb ‘*son-i*’ (to listen to something) is shown in the sentence (42). The examples in (43) and (44) show causative forms of the transitive verb ‘*son-i*’. The causative form 1 of this verb is ‘*son-naa-i*’, which is trivalent and means ‘to involve someone in listening to something, recited by the agent himself’, is shown in the sentence (43). The causative form 2 of the verb is ‘*son-naa-i*’, which is tetravalent and means ‘to involve someone in listening to something, recited by some intermediate agent (including electronic devices)’, is shown in (44).

- (42) *Haamed=ne naZam son-i*
 Hamid=*erg.sg.M* poem=*nom.sg.F* listen.*perf.sg.F*
 ‘Hamid listened to a poem’
- (43) *Hameed=ne Haamed=ko naZam son-aa-i*
 Hameed.*sg.m=erg* Hamid.*sg.m=acc* poem=*nom.sg.F* listen-make.*caus1*
 ‘Hameed made Hamid listen to a poem (recited by Hameed)’
- (44) *Hameed=ne Haamed=ko aeHmad=se naZam son-vaa-i*
 Hameed=*erg* Hamid=*acc* Ahmad=*agent* poem=*nom* listen-make.*caus2*
 ‘Hameed made Ahmad recite and made Hamid listen to a poem (recited by Ahmad)’

For the causative form 1 (formed with *-aa*) the causee is in the ‘accusative case’ marked with the case marker ‘*ko*’, while for causative form 2 (formed with *-vaa*) the causee is in the ‘agent case’ marked with the case marker ‘*se*’. The examples in (45) to (49) have been taken from (Butt and King 2004), who show that accusative case is compatible with causative form 1, while agent case is compatible with causative form 2. While using agent case with causative form 1 and using accusative case with causative form 2 is incorrect. The case selection for the verb argument is dictated by the causative form. The causative form 1, ‘*kat-aa-yaa*’, is also sometimes used in place of ‘*kat-vaa-yaa*’ to convey the same semantics, but actually it does not exist in formal Urdu usage, because ‘*kat-aa-naa*’ is not compatible with the agent case as shown in (45).

- (45) *anjom=ne Saddam=ko/*se k^haanaa k^hel-aa-yaa*
 Anjom=*erg* Saddam=*dat/*agent* food.*nom* eat.*caus1.perf*
 ‘Anjom made Saddam eat food (gave Saddam food to eat)’
- (46) *anjom=ne Saddam=*ko/se podaa kat-vaa-yaa*
 Anjom=*erg* Saddam=**acc/agent* plant.*nom* cut-*caus2.perf*
 ‘Anjom had Saddam cut a/*the plant’
- (47) *anjom=ne Saddam=ko meSaalHah chak^h-aa-yaa*
 Anjom=*erg* Saddam=*acc* spice=*nom* taste-*caus1.perf*
 ‘Anjom had Saddam taste the seasoning’

- (48) *anjom=ne* *Saddaf=se* *meSaalHah* *chak^h-vaa-yaa*
 Anjom=*erg* Saddaf=*agent* spice=*nom* taste-*caus2-perf*
 ‘Anjom made Saddaf *have someone* taste the seasoning’, or
 ‘Anjom made Saddaf *have herself* taste the seasoning’
- (49) *anjom=ne* *Saddaf=ko* *meSaalHah* *chak^h-vaa-yaa*
 Anjom=*erg* Saddaf=*acc* spice.*nom* taste-*caus2-perf*
 ‘Anjom *made someone* have Saddaf taste the seasoning’

There is a semantic difference in the sentences in (47), (48) and (49). In (47), the meaning conveyed is ‘Anjom presented ‘gravy’ to Saddaf and Saddaf tasted the seasoning’. In (48), the meaning conveyed is ‘Anjom ordered (or requested) Saddaf to make seasoning tasted by someone (or by herself)’. In this case, Anjom has somehow initiated the action but she is not involved directly and she could even be away from the place. In (49), the meaning conveyed is ‘Anjom engaged some intermediate agent and made Saddaf taste the seasoning’. It was some intermediate agent engaged by Anjom, who presented the seasoning to Saddaf and Saddaf tasted it.

The proposed argument structures of some Urdu-Hindi verbs, under the assumptions made in this work, are shown in (50).

- (50) a. fall *ger-naa*<SUBJ>
 ger-aa-naa<SUBJ, OBJ>
 ger-vaa-naa<SUBJ, OBL_{agent}, OBJ>
- b. laugh *hans-naa*<SUBJ>
 hans-aa-naa<SUBJ, OBJ>
 hans-vaa-naa<SUBJ, OBL_{agent}, OBJ>
- c. taste *chak^h-naa*<SUBJ, OBJ>
 chak^h-aa-naa<SUBJ, OBJ, OBJ_θ>
 chak^h-vaa-naa<SUBJ, OBL_{agent}, OBJ, OBJ_θ>
- d. eat *k^haa-naa*<SUBJ, OBJ>
 k^hel-aa-naa<SUBJ, OBJ, OBJ_θ>
 k^hel-vaa-naa<SUBJ, OBL_{agent}, OBJ, OBJ_θ>

The causatives of ditransitive verbs shown in (50), under the analysis presented here, appear as tetravalent verbs. The semantics of well-formed sentences employing these verbs provide the following evidence for their analysis as tetravalent verbs.

1. A noun with instrument case is not optional; if it is omitted, then it is generally implied.
2. A noun with instrument case is the actual actor of the action performed, and therefore it is assigned the notion of an ‘intermediate’ agent.

3. A noun with instrument case is not like a bare instrument, which is typically used by the agent to perform the action, and the agent is animate having capability to perform the action itself.
4. A noun with ergative case engages someone (forcefully or by request) to perform an action but is not the actual actor of the action performed

Therefore the four arguments of a tetravalent verb in (51) are: (i) an ergative (or nominative) subject, (ii) an oblique (intermediate) agent, (iii) a direct object and (iv) an oblique object in dative case. These arguments are summarized in Table 1.

Table 1: Arguments of a Tetravalent Verb (Perfective Form)

<i>Argument</i>	<i>NP Case</i>	<i>Thematic Role</i>
subject	ergative	causer/initiator of the action
indirect agent	agentive	causee/agent of the action
indirect object	dative	beneficiary of the action
object	nominative	object of the action

- (51) *maa*N=*ne* *baap*=*se* *bach.ch-ey*=*ko* *k^haanaa* *k^hel-vaa-yaa*
 mother=*erg* father=*ag* child.*obl*=*dat* food.*nom* eat.*caus2*
 The mother caused (asked, requested) the father to give food to the child.
- (52) *maa*N=*ne* *chamche*=*se* *bach.ch-ey*=*ko* *k^haanaa* *k^hel-aa-yaa*
 mother.*erg* spoon=*inst* child.*obl*.*dat* food.*nom* eat.*caus1*
 The mother gave the food to the child by using a spoon, *or*
 The mother made the child eat food by means of a spoon.

The sentences in (51) and (52) have four noun phrases with the same case markers, and each sentence has one verbal predicate. The tetravalent predicate, ‘*k^hel-vaa-yaa*’, in (51), takes all four noun phrases as functional arguments, while the trivalent predicate, ‘*k^hel-aa-yaa*’, in (52), takes only three noun phrases as functional arguments: The spoon in (52) is used as an instrument. The spoon is not animate and so cannot perform the action of its will, and therefore cannot take the position of an agent for performing the action. The mother in (52) is the actual performer of the action, making the child eat food. The spoon is used by the mother to perform the action. The instrumental argument ‘spoon’ is optional, and therefore it is not controlled by the predicate and acts as an adjunct. It may again be noted that the phrase ‘*baap=se*’, cannot be used in place of ‘*chamche=se*’ in (52); however ‘*chamche=se*’ can be used in (51). Figure 4 shows an f-structure with a tetravalent predicate for the sentence in (51) and Figure 5 shows an f-structure with a trivalent predicate for the sentence in (52). The difference between an ‘indirect agent’ OBL_{agent} and an optional ADJUNCT can be seen in the f-structures.

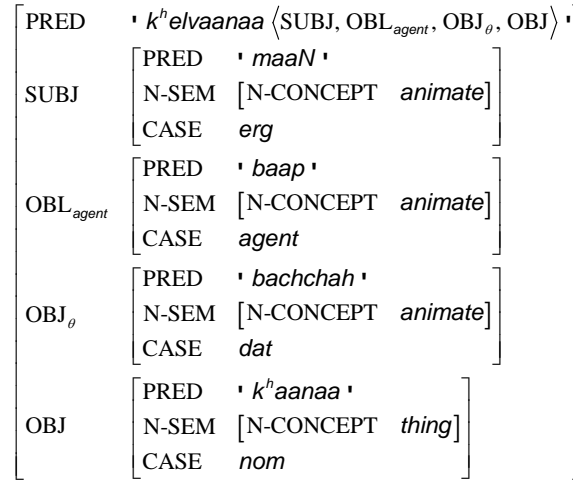


Figure 4: F-Structure of
 ‘*maan=ne baap=se bach.ch-e=ko k^haanaa k^hel-vaa-yaa*’

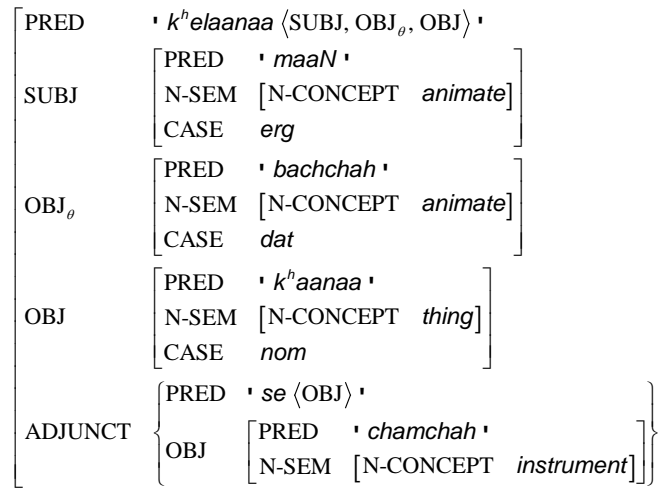


Figure 5: F-Structure of
 ‘*maan=ne chamche=se bach.ch-ey=ko k^haanaa k^hel-aa-yaa*’

It is proposed that ‘intermediate agent’, in the absence of an overt argument, can take a **default** value of ‘*someone*’ in non-negative sentences and ‘*anyone*’ in negative sentences. This satisfies the notion of completeness and the assumption that “if an intermediate agent is omitted, it is semantically implied”.

5 Conclusions

In this paper, modeling-based classification of Urdu case markers and postpositions is presented. Verb forms, core case markers, oblique case markers, postpositions and possession markers are classified separately. The use of semantic features of nouns to classify and better resolve argument mapping of instrumental cases in Urdu has been proposed. The agentive case marked with ‘*se*’ for animate nouns is used to propose the ‘oblique agent’ as full verb argument for the causative form 2 verbs in Urdu. Causative form 2 verbs, that end in *-vaa* suffix, are thus analyzed as having trivalent or tetravalent argument structure.

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