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kvs2811@yahoo.com

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The Role of Particles and Clitics in Disambiguation

Karumuri V. Subbarao

University of Delhi, India

1. The purpose of this paper is to demonstrate that there are identical phenomena across languages in disambiguating a sentence. Such disambiguation plays an important role in conveying the intended information with proper interpretation. We shall show that the occurrence of particles or verbal clitics or the process of copying the head or the presence vs. absence of reduplicated forms are some of the processes that block a specific interpretation and facilitate the other intended interpretation. We argue that the notion of syntactic dependency domain helps in sentence processing and enables us to explain the two different interpretations of specific sentences. Further, it also enables to explain why the occurrence of some specific particles facilitates one interpretation while the occurrence of some others does not. Our analysis demonstrates that reduplication is not just a phenomenon restricted to the area of morphology alone but it has syntactic implications to the extent that it can help disambiguate a sentence.

2.1. The role of the emphatic particle in Hindi-Urdu and Punjabi

10.

ham	dillii	jaa	kar	rahenge
<i>we</i>	<i>Delhi</i>	<i>go</i>	<i>cpm</i>	<i>be+fut</i>

- (i) We will go to Delhi and stay (sequential interpretation).
- (ii) We will definitely or certainly go to Delhi (aspectual interpretation).

With the emphatic clitic *hi* to the right of the conjunctive participle, only the aspectual meaning permitted and not the sequential meaning:

11.

ham	dillii	jaa	kar	hii	rahenge
<i>we</i>	<i>Delhi</i>	<i>go</i>	<i>cpm</i>	<i>emph</i>	<i>be+fut</i>

- (i) *We will go to Delhi and stay (sequential interpretation).
- (ii) We will definitely or certainly go to Delhi (aspectual interpretation).

With the inclusive clitic *bhii* ‘also’ to the right of the conjunctive participle, only the sequential meaning permitted and not the aspectual meaning:

12.

ham	dillii	jaa	kar	bhii	rahenge
<i>we</i>	<i>Delhi</i>	<i>go</i>	<i>cpm</i>	<i>also</i>	<i>be+fut</i>

- (i) *We will certainly go to Delhi and stay .
- (ii) We will even go to Delhi and stay.

In the sequential interpretation, **adjacency is not a requirement** and hence, **the two constituents *jaa kar* and *rahenge* can freely be scrambled**.

14.

[aagre	se	jaa	kar]	ham	dillii	rahenge
<i>Agra</i>	<i>from</i>	<i>go</i>	<i>cpm</i>	<i>we</i>	<i>Delhi</i>	<i>will stay</i>

‘We will go from Agra and stay in Delhi.’

In the **sequential interpretation both the elements are independently processed** while in the **aspectual interpretation both the elements are compositionally processed**.

Syntactic dependancy domain: When two elements are adjacently placed and are required to be adjacent for their interpretation, we can label such occurrence as a **syntactic dependancy domain**. The syntactic dependancy domain is not affected if a particle that intensifies the meaning occurs and the particle is in line with the projected semantic content of the compositional whole. In other words, the clitic that is added should be in consonance with the total meaning that is being projected compositionally by the individual units. Note that there are other similar syntactic dependancy domains in Hindi-Urdu. In (18) the phrase *kar dikhaana* has the interpretation of ‘demonstrate’ or ‘show’ and the elements *kar* and *dikhaana* are verbs and have their independent meaning.

Another instance of Syntactic Dependancy Domain:

Hindi-Urdu

18.

meraa	dost	yah	kaam	ek	minaT	meN	kar	dikhaayegaa
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my friend this work a minute in do will show

‘My friend will demonstrate this work (by doing it) in one minute.’

19.

?*meraa dost yah kaam kar ek minaT meN dikhaayegaa
my friend this work do a minute in will show

In sequential interpretation the conjunctive participle and the matrix verb do not constitute a syntactically dependent domain.

21.

meraa dost yah kaam ek minaT meN **kar**
my friend this work one minute in do

ke abhii dikhaayegaa
cpm right now will show

‘My friend will do this work in a minute and show it to you right now.’

2.2. **The conjunctive participle and particles:** (23) in Hindi-Urdu is ambiguous.

In interpretation (i) the scope of the negative is on the matrix verb. In (ii) the effect of the negative percolates down to the embedded clause from the matrix clause

Hindi-Urdu

23.

ravi riSwat le kar kaam nahii~ kartaa
Ravi bribes take cpm work not do

(i) Ravi takes bribes and does not do the work.

(ii) Ravi does not take bribes but (still) does the work.

The inclusive particle *bhii* ‘also’ blocks the interpretation in (ii) as the negative cannot percolate down to the embedded clause.

24.

ravi riSwat le kar **bhii** kaam nahii~ kartaa
Ravi bribes take cpm also work not do

- (i) Ravi takes bribes too and does not do the work. I.e., Ravi does not do the work even though he takes bribes.
- (ii) *Ravi does not take bribes and still does the work.

The embedded clause in (24) is an adverbial clause and the entire adverbial clause can freely ‘float’ and it does not form a syntactically dependent domain with the constituents of the matrix clause.

The inclusive particle with the embedded participle blocks the percolation of the negative to the embedded clause as the embedded clause forms a **syntactic island**.

The emphatic particle *hii* alone or together with the focus particle *to* too blocks the percolation of the negative to the embedded clause.

27.

ravi riSwat le kar **hii** (to) kaam nahii~ kartaa

Ravi bribes take cpm emph as for work not do

- (i) ‘Ravi takes bribes alright but does not do the work. I.e., Ravi does not do the work even though he takes bribes.’
- (ii) ‘*Ravi does not take bribes and still does the work.’

However, the occurrence of the focus particle *to* the right of the conjunctive participle does not block the percolation of the negative to the embedded participle.

28.

ravi riSwat le kar **to** kaam nahiiN kartaa

Ravi bribes take cpm as for work not do

lekin vaise hii kar letaa hai

but like that just do takes

‘Ravi does not take bribes but he (some how) does the work.’

*‘Ravi takes bribes but he (some how) does not do the work.’

Manipuri (Tibeto-Burman)

29.

tomba	paysa	ca-	raga	thabak	tau-	de
<i>Thomba</i>	<i>money</i>	<i>eat</i>	<i>cpm</i>	<i>work</i>	<i>do</i>	<i>not</i>

- (i) Thomba takes bribes and does not do the work.
- (ii) Thomba does not take bribes and (still) does the work.

With the inclusive particle *su* ‘also’: No ambiguity

30.

tomba	paysa	ca-	raga	su	thabak	tau-	de
<i>Thomba</i>	<i>money</i>	<i>eat</i>	<i>cpm</i>	<i>also</i>	<i>work</i>	<i>do</i>	<i>not</i>

- (i) ‘Thomba takes bribes too and does not do the work. I.e., Thomba does not do the work even though he takes bribes.’
- (ii) ‘*Thomba does not take bribes and still does the work.’

(Subbarao & T. Sarju Devi ms. , Sarju Devi, in preparation)

In Telugu too:

31.

Telugu (Dravidian)

ravi	lancaalu	tiis-	i	kon-	i	pani	ceyyaDu
<i>Ravi</i>	<i>bribes</i>	<i>take</i>	<i>cpm</i>	<i>self ben</i>	<i>cpm</i>	<i>work</i>	<i>does not do</i>

- (i) Ravi takes bribes and does not do the work.
- (ii) Ravi does not take bribes and (still) does the work.

With the inclusive particle *kuuDaa* ‘also,too’: the negative does not percolate down.

32.

ravi	lancaalu	tiis-	i	kon-	i	kuuDaa	pani	ceyyaDu
<i>Ravi</i>	<i>bribes</i>	<i>take</i>	<i>cpm</i>	<i>self ben</i>	<i>cpm</i>	<i>also</i>	<i>work</i>	<i>does not do</i>

- (i) Ravi takes bribes too and does not do the work. I.e., Ravi does not do the work even though he takes bribes.
- (ii) *Ravi does not take bribes and still does the work.

Just as in Hindi-Urdu, the occurrence of the focus particle *ayitee* ‘as for’ to the right of the conjunctive participle does not block the percolation of the negative.

33.

ravi	lancaalu	tiis-	i	kon-	i	ayitee	pani	ceyyaDu
<i>Ravi</i>	<i>bribes</i>	<i>take</i>	<i>cpm</i>	<i>self ben</i>	<i>cpm</i>	<i>as for</i>	<i>work</i>	<i>does not do</i>

‘Ravi does not take bribes but he (some how) does the work.’

*‘Ravi takes bribes but he (some how) does not do the work.’

The blocking of the negative by the emphatic particle is also observed in Kokborok, Boro (Tibeto-Burman) and Ho (Munda) and in other Indo-Aryan and Dravidian languages too.

2.3. The occurrence of the verbal clitics: The third case concerns the occurrence of the verbal clitics that block long-distance binding. These include verbal anaphors (reflexives and reciprocals), self-benefactive or other-benefactive clitics with the matrix or embedded verb.

2.3.1. Verbal clitics and long-distance binding: The verbal anaphor functions also as a self-benefactive and an inchoative marker (Lust et al 2000).

In Telugu the nominal anaphor *tana koosam* ‘for self’ is coindexed with the matrix subject and the embedded verb does not carry any verbal anaphor.

Telugu (Dravidian)

34.

aSook _i	sarita _j	ni	tana koosam _{i/*j}	Tii	ceeyya	mani	ceppeeDu
<i>Ashok</i>	<i>Sarita</i>	<i>acc</i>	<i>self for</i>	<i>tea</i>	<i>do(imp)</i>	<i>quot</i>	<i>said</i>
<i>(male)</i>	<i>(female)</i>						

‘Ashok asked Sarita to make some tea for self (Ashok).’

The verbal anaphor/self-benefactive in Telugu is *kon*. If the self-benefactive *kon* occurs with the embedded verb, the nominal anaphor is coindexed with the embedded subject PRO which in turn is coindexed with the matrix object *sarita* ‘Sarita’.

35.

aSook _i	sarita _j	ni	[PRO	tana koosam _{*i/j}	Tii	ceesi	kona
<i>Ashok</i>	<i>Sarita</i>	<i>acc</i>		<i>self for</i>	<i>tea</i>	<i>do</i>	<i>self ben</i>

(male) (female)

mani] ceppeeDu
quot said

‘Ashok_i asked Sarita_j to make tea for herself_{*i/j}.’

When the other benefactive *peTT* ‘keep’ occurs with the embedded verb, the anaphor unambiguously refers to the matrix subject *aSok* ‘Ashok’ alone.

36.

aSook _i	sarita _j	ni ²	[PRO	tana koosam _{i/*j}	Tii	ceesi	peTTa
<i>Ashok</i>	<i>Sarita</i>	<i>acc</i>		self for	<i>tea</i>	<i>do</i>	<i>other ben</i>
(male)	(female)						

mani] ceppeeDu
quot said

‘Ashok_i asked Sarita_j to make tea for self_{i/*j}.’

In Hindi-Urdu: local binding and long-distance binding of the simplex anaphor *apne liye* ‘for self’ are permitted.

Hindi-Urdu

37.

aSok _i	ne	sarita _j	se	[PRO _j	apne liye_{i/j}	caay
<i>Ashok</i>	<i>erg</i>	<i>Sarita</i>	with		<i>for self</i>	<i>tea</i>
banaane	ko	kahaa				
<i>make</i>	<i>to</i>	<i>asked</i>				

‘Ashok_i asked Sarita_j to make tea for self_{i/j}.’

(Subbarao1971, Davison 2001)

With the **self-benefactive *le*** ‘take’ occurs with the embedded verb, **only local binding** is permitted and not long-distance binding.

38.

aSok _i	ne	sarita _j	se	[PRO _j	apne liye _{*i/j}	caay
<i>Ashok</i>	<i>erg</i>	<i>Sarita</i>	<i>with</i>		<i>for self</i>	<i>tea</i>

banaa	lene	ko]	kahaa
<i>make</i>	<i>self ben</i>	<i>to</i>	<i>asked</i>

‘Ashok_i asked Sarita_j to make tea for self_{*i/j}.’

With the **other-benefactive clitic** *denaa* ‘to give’, only **long-distance binding and no local binding**:

39.

aSok _i	ne	sarita _j	se	[PRO _j	apne liye _{i/*j}	caay
<i>Ashok</i>	<i>erg</i>	<i>Sarita</i>	<i>with</i>		<i>for self</i>	<i>tea</i>
banaa	dene	ko]	kahaa			
<i>make</i>	<i>other ben</i>	<i>to</i>	<i>asked</i>			

‘Ashok_i asked Sarita_j to make tea for self_{i/*j}.’

If the anaphor is **scrambled** to the left of the matrix object, the binding possibilities change.

Without the verbal clitic:

40.

aSok _i	ne	apne liye _{i/*j}		sarita _j	se	[PRO	t _i	caay
<i>Ashok</i>	<i>erg</i>	<i>for self</i>		<i>Sarita</i>	<i>with</i>	<i>for self</i>		<i>tea</i>
banaane	ko]	kahaa						
<i>make</i>	<i>to</i>	<i>asked</i>						

‘Ashok_i asked Sarita_j to make tea for self_{i/*j}.’

The binding possibilities however do not change when the self-benefactive or the other-benefactive clitics occur with the embedded verb.

With the self-benefactive clitic:

41.

aSok _i	ne	apne liye _{*i/j}		sarita _j	se	[PRO	t _i	caay
<i>Ashok</i>	<i>erg</i>	<i>for self</i>		<i>Sarita</i>	<i>with</i>	<i>for self</i>		<i>tea</i>

banaa	lene	ko]	kahaa
<i>make</i>	<i>self ben</i>	<i>to</i>	<i>asked</i>

‘Ashok_i asked Sarita_j to make tea for self_{i/*j}.’

With the other-benefactive clitic:

42.

aSok _i	ne	apne liye _{i/*j}	sarita _j	se	[PRO	t _i	caay
<i>Ashok</i>	<i>erg</i>	<i>for self</i>	<i>Sarita</i>	<i>with</i>	<i>for self</i>		<i>tea</i>
banaa	dene	ko]	kahaa				
<i>make</i>	<i>other ben</i>	<i>to</i>	<i>asked</i>				

‘Ashok_i asked Sarita_j to make tea for self_{i/*j}.’

The reason why scrambling does not affect binding possibilities is due to the occurrence of the self-benefactive clitic which is ‘subject-oriented’ and ‘clause-bound’ and in contrast, the other-benefactive clitic is not ‘subject-oriented’ and not necessarily ‘clause-bound’.

A similar phenomenon in **embedded adverbial clauses with imperfect participles:**

43.

pitaji	ke	saare	kaam	khatm	kar-	te hii
<i>father</i>	<i>gen</i>	<i>all</i>	<i>work</i>	<i>finish</i>	<i>do</i>	<i>right after</i>
bacce	khuS	ho gaye				
<i>children</i>	<i>happy</i>	<i>became</i>				

(i) ‘As soon as the children finished all the jobs (work) of their father, they felt happy.’

(ii) As soon as their father finished all his jobs (work), the children felt happy.’

However, if the self-benefactive *le* ‘take’ occurs with the embedded imperfect participle, the sentence has the interpretation in (ii) above alone as the self-benefactive is subject oriented and subject orientation is ‘clause bound’.

With the self-benefactive *le* ‘take’ with the embedded verb, only the interpretation in (ii) permitted because **lena is subject oriented**.

44.

pitaji	ke	saare	kaam	khatm	kar-	le
<i>father</i>	<i>gen</i>	<i>all</i>	<i>work</i>	<i>finish</i>	<i>do</i>	<i>self ben</i>

te hii	bacee	khuS	ho gaye
<i>right after</i>	<i>children</i>	<i>happy</i>	<i>becamee</i>

- (i) ‘*As soon as the children finished their all the jobs (work) of their father, they felt happy.’
- (ii) As soon as their father finished all his jobs (work), the children felt happy.’

The vector verb *denaa* ‘to give’ functions as the other-benefactive as well as completion marker. In contrast to *lenaa*, the self benefactive, ***denaa* is not subject oriented**. Hence, if *denaa* ‘to give’ occurs with the embedded verb, the sentence still is ambiguous.

45.

pitaji	ke	saare	kaam	khatm	kar	de-	te hii
<i>father</i>	<i>gen</i>	<i>all</i>	<i>work</i>	<i>finish</i>	<i>do</i>	<i>give</i>	<i>right after</i>

bacce	khuS	ho gaye
<i>children</i>	<i>happy</i>	<i>became</i>

- (i) ‘As soon as the children finished their all the jobs (work) of their father, they felt happy.’
- (ii) ‘?As soon as their father finished all his jobs (work), the children felt happy.’

The unambiguous interpretation of (44) demonstrates that the occurrence of the self-benefactive requires that it be coindexed with a subject as the self-benefactive is ‘subject-oriented’. Scrambling of the matrix and embedded sentences do not have any effect on binding possibilities. In Ao (Tibeto-Burman) a simplex nominal anaphor in the embedded clause permits local as well as long-distance binding:

Ao (Tibeto-Burman)

46.

akumla _i	nA	arenla _j	tangko	[pa _{i/j/k}	tomAka	sAnga	yanglu-
<i>Akumla</i>	<i>nom</i>	<i>Arenla</i>	<i>for</i>	<i>self</i>	<i>for</i>	<i>tea</i>	<i>make</i>

‘Akumla_i asked Arenal_j to make some tea for self_{i/j/k}.’

ang]	ta	sa
<i>imp</i>	<i>comp</i>	<i>said</i>

The other-benefactive clitic blocks long-distance binding and the anaphor can only be coindexed locally.

47.

akumla _i	nA	arenla _j	tangko	[pa _{i/*j/k}	tomAka	sAnga	yanglu-
<i>Akumla</i>	<i>nom</i>	<i>Arenla</i>	<i>for</i>	<i>self</i>	<i>for</i>	<i>tea</i>	<i>make</i>

ang	bi]	ta	sa
<i>imp</i>	<i>other ben</i>	<i>comp</i>	<i>said</i>

‘Akumla asked Arenla to make some tea for self_{i/j/k}.’

(Pangarsenla 2004)

2.3.2. Long-distance binding and the morphological nature of the anaphor: The complex anaphor is a reduplicated form of the simplex form (Subbarao & Lalitha Murthy, 2000 for Telugu, Lust et al 2000 for other South Asian languages). A reduplicated form does not permit long-distance binding while it is the simplex form that permits long-distance binding.

Hindi-Urdu

48.

mantrii _i	ne	raajaa _j	se	[PRO _j	apne aap _{*i/j/*k}	ko	doS
<i>minister</i>	<i>erg</i>	<i>king</i>	<i>with</i>		<i>self (complex)</i>	<i>dat</i>	<i>blame</i>

‘The minister_i told the the king_j not to blame self_{*i/j/*k}.’

na	dene	ko	kahaa
<i>not</i>	<i>give</i>	<i>to</i>	<i>said</i>

49.

mantrii _i	ne	raajaa _j	se	[PRO _j	apne _{i/j/*k}	ko	doS
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<i>minister</i>	<i>erg</i>	<i>king</i>	<i>with</i>	<i>self (simplex)</i>	<i>dat</i>	<i>blame</i>
na	dene	ko	kahaa			
<i>not</i>	<i>give</i>	<i>to</i>	said			

‘The minister_i told the the king_j not to blame self_{i/j/*k}.’

In Telugu too a simplex anaphor permits long-distance binding while a complex anaphor does not. The complex anaphor is formed by the reduplication of the simplex anaphor and Case Copying (Subbarao & Lalitha Murthy 2000).

Telugu

50.

karuNa _i	sarita	ni _j	tana _{i,j}	miida	ciraaku
<i>Karuna</i>	<i>Sarita</i>	<i>acc</i>	<i>self</i>	on	<i>irritation</i>
paDa	waddu ³	ani	andi		
<i>fall</i>	<i>not (imp)</i>	<i>quot</i>	<i>said</i>		

‘Karuna_i asked Sarita_j not to get irritated at self_{i,j}.’

51.

karuNa _i	sarita	ni _j	tana	miida	tanu _{*i/j}	ciraaku	paDa	waddu
<i>Kauna</i>	<i>Sarita</i>	<i>acc</i>	<i>seld</i>	on	<i>self</i>	<i>irritation</i>	<i>fall</i>	<i>not (imp)</i>
ani	andi							
<i>quot</i>	<i>said</i>							

‘Karuna_i asked Sarita_j not to get irritated at self_{*i,j}.’

Verbal anaphor blocks long-distance binding:

52.

maalati _i	mamati _j	ni	tana	ni	tanu _{*i/j}	poguDu	kona _{*i/j}
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Malati Mamata acc self acc self praise vr

waddu ani ceppindi
not quot said

‘Malati_i told Mamata_j not to praise self_{*i/j}.’

53.

*maalati_i mamati_j ni tana ni_{*i/j} poguDu kona_{*i/j}*
Malati Mamata acc self acc praise vr

waddu ani ceppindi
not quot said

‘Malati_i told Mamata_j not to praise self_{*i/j}.’

A verbal clitic blocks long-distance binding and hence, Munda languages such as Ho and Mundari in which there is only a verbal anaphor and hence, no long-distance coindexation of the anaphor with the matrix subject is permitted.

2.3.3. Copying/Repetition of a noun as a disambiguating device: In internally-headed relative clauses in Mizo a sentence in (54) is ambiguous. The sentence becomes unambiguous, if the head noun is repeated in the matrix clause as in (55).

Mizo (Tibeto-Burman)

54.

nimin-ah chang changurna a- lei- na cu ϕ a-
yesterday bread bakery 3sg bring nozr def 3sg

hlui
old

‘The bread that she brought yesterday is old.’

‘The bakery from which she brought the bread is old.’

In (55) the noun *changurna* is copied in the main clause as a result of which the sentence is no longer ambiguous.

55.

nimin-ah	chang	changurna	a-	lei-	na	cu	changurna	a- hlui
yesterday	bread	bakery	3sg	bring	nozt	def	bakery	3sg old

*‘The bread that she brought yesterday is old.’

‘The bakery from which she brought the bread is old.’

(Om Prakash & Subbarao 2004, Om Prakash (in preparation))

In Sema (Tibeto-Burman) An ablative PP can head an internally-headed relative clause if and only if the NP is repeated as the internal head as well as the external head subject to the following conditions:

- (i) the external head should not carry the generic possessive marker.
- (ii) no lexical case marker other than the nominative occurs with the NP occurring in the position of the external head.

DO as head and not the ablative PP:

Sema (Tibeto-Burman)

56.

nO - nO azlkhikhi lOnO azl sll - keu ti - ye miThe mO
you [+trm]well from water brought NOZ that [-trm] clean neg

*‘The well from which you brought the water is dirty.’

‘The water which you brought from the well is dirty.’

Ablative PP as Head:

57.

nO - nO **azlkhikhi** lOnO azl sll - keu **zlkhikhi-** ye miThe
you [+trm] well from water brought NOZ well [-trm] clean

‘The well from which you brought the water is dirty.’

*‘The water which you brought from the well is dirty.’

(Subbarao & Kevichusa 1999, Kevichusa in preparation)

Notes

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Abbreviations: acc: accusative, cpm: conjunctive participial marker, dat: dative, emph: def: definite marker, emphatic marker, erg: ergative, fut: future, imp: imperative, nm: nominative marker, nozr: nominalizer, other ben: other benefactive, self ben: self benefactive, pl: plural, quot: quotative, sg: singular, trm: transitive marker, vr-verbal reflexive

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Mundari Data

1. raam_i mohan-ke [aaya_i-lagiid caahaa babaiya] kajii-ya-a
Ram Mohan Acc self for tea to prepare tell Pst FinM
'Ram_i told Mohan to prepare tea for self_i.'
2. raam_i saritaa_j-ke [aaya_{i/*j}-lagiid oma jome-a] kajii-ya -a
Ram Sarita Acc self to give eat tell Pst FinM
'Ram_i told Sarita_j to bring food for self_{i/*j}.'
3. raam_i mohan_j-ke [aaya_{i/*j} kaamii laiya] kaji-ya-a
Ram Mohan Acc self work to do tell Pst FinM
'Ram_i told Mohan_j to do self_{i/*j} work.'
4. raam_i mohan_j-ke [aaya_{i/*j} da? a om-ow] kaji-ya-a
Ram Mohan Acc self water to give tell Pst FinM
'Ram_i told Mohan_j to give water for self_{i/*j}.'
5. raam_i mohan-ke [naja_{i/*j} kitaab om-o] kajii-ya-a
Ram Mohan Acc self book to give tell Pst FinM
'Ram_i told Mohan_j to give his_{i/*j} book.'