

Nominal Clitics and Constructive Morphology in Hindi

Devyani Sharma
Stanford University

Proceedings of the LFG99 Conference

The University of Manchester

Miriam Butt and Tracy Holloway King (Editors)

1999

CSLI Publications

<http://www-csl.stanford.edu/publications/>

Abstract

This paper examines the establishment of grammatical and discourse functions of NPs by morphological marking in Hindi. I argue that a constructive morphology analysis of case marking can be generalized in Hindi to both case and discourse clitics. Nordlinger (1998) proposes constructive functions for case markers, whereby a lexical specification such as (SUBJ \uparrow) replaces the traditional c-structure annotation (\uparrow SUBJ)= \downarrow . Crucially, under her analysis, case markers also carry clause-level information about grammatical functions. I show that extending this mechanism to discourse clitics in Hindi can account for their ability to identify the clause-level discourse function of their host NP. The constructive analysis also accommodates incorporated forms, multiple embedding, and domain restrictions. However, as with constructive case (Butt and King 1999, Lee To appear), the ‘flattening’ effect of the constructive function on discourse markers is restricted to f-structural syntactic discourse functions and does not apply to semantic effects.

Introduction*

Case marking in Hindi has been studied in greater detail in the literature than discourse marking (Mahajan 1990, Mohanan 1994, Butt and King 1999). Furthermore, similarities in the licensing of case and focus have been observed in several studies, but they have been generally oriented toward *structural* licensing (Horvath 1995, Butt and King 1996). Here I examine morphological marking that is independent of positional licensing.

Traditionally in LFG, grammatical functions have been identified by functional descriptions stating relations such as (\uparrow OBJ)= \downarrow and (\uparrow CASE)=ACC. Nordlinger (1998), building on work by Andrews (1996) and Simpson (1991) amongst others, proposes constructive functions for case markers, such as (SUBJ \uparrow), in order to account for various properties of case morphology in nonconfigurational languages. In this paper, the extension of constructive morphology to discourse marking captures the similar ways in which case and discourse clitics contribute clausal information about their hosts independently of configurational positions. The main aims of this paper will be:

- [i] To account for the establishment of grammatical and discourse functions via cliticization in NPs in Hindi;
- [ii] To describe the similarities and differences in the syntactic behaviour of case and discourse clitics;
- [iii] To distinguish between syntactic and semantic effects of discourse clitics in particular.

In section 1, I give an overview of the behaviour of certain discourse markers, providing evidence that they are similar to case markers in being clitic-like. Section 2 provides a more detailed discussion of the syntactic properties of these clitics. In section

*I am indebted to Joan Bresnan and Peter Sells for detailed comments and insights on earlier drafts of this paper. Thanks also to the audience of LFG99 for many helpful suggestions. Any remaining errors are my own.

3, I present an analysis for Hindi case clitics using constructive morphology, and then extend this analysis to discourse clitics. Finally in section 4, I point out that although the ‘flattening’ constructive function proposed here identifies a syntactic function at f-structure, clitics ultimately require a distinct semantic mapping to establish fine-grained scope interpretations (Dalrymple 1993, Andrews and Manning 1999).

1 Structural status of discourse and case markers

The main discourse markers used in Hindi are listed in (1):²

- (1) *hii* exclusive contrastive focus (‘only’)
bhii inclusive contrastive focus (‘also’, additive/scalar)
to contrastive topic

More restricted markers:

- tak* scalar endpoint marker (‘even’)
bhar entirety (‘all’)

Hii marks exclusive focus, similar in some ways to *only* in English. It identifies a particular member out of a possible set. *Bhii* indicates inclusive focus, including a particular element in an existing set.³ Finally, *to* performs a topic contrasting function. More semantically and syntactically restricted clitics include *tak* and *bhar*.

For purposes of consistency and due to space limitations, I will restrict most of the discussion in this paper to the focus marker *hii*. The first three clitics listed above appear very frequently in conversational speech and perform a range of pragmatically and semantically restrictive functions. The definitions in (1) are somewhat coarse approximations of the complex functional range of each marker. In example (2) I show instances of their use.

- (2) a. Exclusive focus:

radhaa=ne=**hii** bacchon=ko kahanii sunaayi
radhaa=ERG=EXCL FOC children=ACC story make-hear-PERF.F.SG
‘It was (only) Radha who told the children a story.’

- b. Inclusive focus:

radhaa=ne=**bhii** bacchon=ko kahanii sunaayi
radhaa=ERG=INCL FOC children=ACC story make-hear-PERF.F.SG
‘*Radha* (also) told the children a story.’

²For discussions of the classification of discourse types, see Dik et al. (1981, Prince (1992, Vallduvi (1992, Lambrecht (1994) among others. The notions of grammaticalized focus and topic representations in the f-structure assumed here are based on the classification of discourse functions in Choi (1996) and Bresnan (1999, 115). It is important to note that these markers are optional in Hindi, as other mechanisms such as word order and intonation may also be used for expressing discourse prominence. This is unlike languages such as Somali, in which the presence of appropriate discourse markers is obligatory (Lunella Mereu, p.c.).

³The discourse marker *bhii* in particular shows specific negative polarity properties when used in certain constructions (Lahiri 1998).

c. Contrastive topic:

mombattii=**to** miii, lekin abh machiss gum gaye
 the candle-NOM=**TOP** found-PERF.F.SG but now matches-NOM lost go-PERF.F.PL
 ‘*The candle* was found but now the matches are lost.’

In (2a) ‘Radha’ is exclusively focused; in (2b) ‘Radha’ is inclusively focused; and in (2c) the topic ‘candle’ is contrasted with the new information in the sentence. These examples show that discourse clitics identify the constituent which they immediately follow as marked for certain discourse roles. The discussion here is restricted to the nominal domain, but it must be noted that discourse clitics may also modify non-nominal elements in a clause, including verbal elements and adjuncts. Although the full range of these uses cannot be adequately addressed here, these facts are in keeping with the general property of discourse markers as identifying the focus of a clause, whether nominal or not. In fact, the analysis provided here for the nominal domain could ultimately be generalized to include further uses of discourse markers, as I discuss briefly in §3.5.

1.1 Clitic analysis

I follow the analysis of case markers in Mohanan (1994, 60) and Butt and King (1999) in analysing discourse markers also as syntactic clitics rather than morphological affixes. Some arguments in favour of this view are given in §1.1.

- Case markers may take phrasal scope over conjoined nominals. Example (3), from Butt and King (1999, 5), shows the difference between clitic and affix behaviour.

(3) a.	b.
*[kutt- aur ghor]-e]	[kutt-e aur ghor-e] =ko
dog and horse-OBL	dog-OBL and horse-OBL ACC
‘the dog and horse (obl)’	‘the [dog and horse]-ACC’

In (3a), the oblique affix cannot take scope over the conjoined nominal stems. In (3b), however, the single case marker *can* mark the conjoined stems. Discourse markers pattern like case markers in this regard. They can also take phrasal scope over conjoined elements, as shown in (4).

(4) [kutt-e aur ghor-e] =hii
 dog-OBL and horse-OBL FOC
 ‘[dogs and horses]-FOC’

- Pauses may intervene between nominals and their case markers (Mohanan 1994, 60). Discourse markers show the same property. By contrast, it is impossible to insert a pause between a nominal stem and an affix such as *-e* in (3b).
- Nominal agreement affixes affect the stress pattern of a noun, whereas case clitics do not (Butt and King 1999, 5). Again, discourse markers pattern like case markers in this regard and do not affect stress.

- Finally, discourse clitics and case clitics can be mutually reordered (although this is subject to dialectal variation). However, neither type of clitic can intervene between the nominal stem and regular affixes.

1.2 Host-adjoining clitics

Assuming that discourse markers are also clitics, it is fairly straightforward to argue that, like case, they are of the type which attach to a constituent rather than ones which occupy a clausal position, for example, directly under S. Several phenomena may be taken as evidence for this assumption.

Firstly, discourse clitics may appear *within* NPs with correspondingly restrictive scope. If these clitics appear in a position directly dominated by S or IP, their NP-internal positioning and scope cannot be easily accounted for.

Secondly, discourse markers only take scope over constituents to their left. This is distinct from non-constituent discourse particles in other languages. Koenig (1991) distinguishes between adverb-like and clitic-like behaviour of focus particles cross-linguistically. In the English examples in (5), the particle *only* shows adverb-like properties as its position and scope are relatively flexible.

English (adverb-like):

- (5) a. Maya **only** gave Anu A BOOK.
 b. Maya **only** gave ANU a book.

The focus marker *hii* in Hindi contrasts with this in exhibiting a stricter, constituent-like behaviour.

- (6) a. *maya=ne **hii** anu=ko KITAAB dii
 maya=ERG FOC anu=DAT book-NOM give-PERF.F.SG
 ‘Maya only gave Anu A BOOK.’
 b. *maya=ne **hii** ANU=KO kitaab dii
 maya=ERG FOC anu=DAT book-NOM give-PERF.F.SG
 ‘Maya only gave ANU a book.’
 c. MAYA=NE **hii** anu=ko kitaab dii
 maya=ERG FOC anu=DAT book-NOM give-PERF.F.SG
 ‘MAYA only gave Anu a book.’

In (6a & b) it is not possible for *hii* to take focal scope over any constituent that follows it. It can only focus the immediately preceding constituent, *Maya=ne*, as shown in (6c).

1.3 An exception: morphologically incorporated discourse markers

In order to consider the full range of positions that case and discourse clitics may occupy in NPs, an exception to the clitic generalizations listed in §1.1 must first be taken into account. This is a set of forms in which *hii* shows signs of being incorporated into its nominal host.

Since *hii* follows the element it modifies, it commonly follows case markers too (Verma 1971). However, when *hii* does occur between pronominals and their case markers, it usually shows signs of incorporation (Koul 1990, McGregor 1995). I list the personal and demonstrative pronominal forms with incorporated focus in (7).

- (7)
- | | |
|----------------|------------------------------------|
| <i>mujhi</i> | me-FOC (oblique) |
| <i>tujhi</i> | you-FOC (oblique) |
| <i>vahi</i> | he/she/it-FOC |
| <i>ussi</i> | he/she/it-FOC (oblique, distant) |
| <i>yahi</i> | he/she/it-FOC |
| <i>issi</i> | he/she/it-FOC (oblique, proximate) |
| <i>hamiiN</i> | I/we-FOC |
| <i>tumhiiN</i> | you.pl-FOC |
| <i>unhiiN</i> | they-FOC (oblique, distant) |
| <i>inhiiN</i> | they-FOC (oblique, proximate) |

We can take *hii* to be incorporated in these forms based on several characteristics:

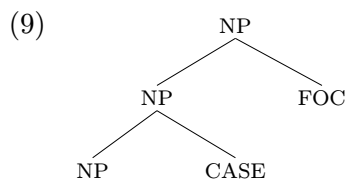
- (8)
- Stress distinctions: * *iss=hii=ne* ‘this =ERG’
 - Phonological reduction: *iss=hii* → *issi* (Koul 1990, 30)
 - Nasalization: (a) *hamiiN* ‘1ST.PL.OBL.FOC’
(b) *ham=hii* ‘1ST.PL.DIR=FOC’
 - Gaps in the paradigm: * *mai=hii=ne* ‘I=FOC=ERG’

The focus morpheme interacts with morphological stress; various types of phonological reduction take place; nasalization of the /i/ vowel occurs in these forms but never in cliticization; and gaps occur in the paradigm of forms which show these characteristics.

To summarize the data discussed so far, I have argued that:

- Both case and discourse markers are clitic-like in nature;
- Discourse markers tend to follow case markers if both appear with a nominal;
- Instances of the reverse ordering, i.e. NSTEM-DISC-CASE, are often cases in which the focus marker is morphologically incorporated into a pronoun.

A simplified representation of these generalizations is shown in (9). This structure will be refined in the next sections.



2 Syntactic properties of nominal clitics

In this section I turn to various syntactic properties of both types of nominal clitics, including position with regard to phrasal boundaries, clausal cooccurrence, and domain restrictions.

2.1 Discourse marking on NP constituents

As mentioned already, discourse clitics may attach to the right edge of the focused or topicalized constituent. The appearance of discourse clitics on an NP does not require any changes in word order, as seen in (10).

- (10) a. *alka=ne mohan=ko=hi dekha*
Alka=ERG Mohan=ACC=EXCL see-PERF.M.SG
'Alka saw (only) Mohan.'
- b. *alka=ne=hi mohan=ko dekha*
Alka=ERG=EXCL Mohan=ACC see-PERF.M.SG
'(Only) Alka saw Mohan.'

Unlike agreement affixes on nouns, discourse clitics do not contribute information to the f-structure of the NP but rather to the f-structure of the *outer clause which contains the NP*. They identify their NP as the TOP or FOC of the main clause. In this capacity, they resemble case clitics since they perform a *clause-level* function.

2.2 NP-internal cliticization

Case clitics must be adjoined to the right of the nominal head; this can be seen in (11).

- (11) a. *in tiin ladkon=ko*
these three boys=DAT
'These three boys'
- b. **in tiin=ko ladkon*
these three=DAT boys
- c. **in=ko tiin ladkon*
these=DAT three boys
- d. **in=ko tiin=ko ladkon=ko*
these=DAT three=DAT boys=DAT

(11b & c) show that case cannot appear on a modifier inside the noun phrase, and (11d) shows that case cannot be multiply iterated in a single noun phrase. Discourse

clitics, on the other hand, may attach to a wider range of constituents in the NP, as shown in (12).⁴

- (12) a. in tiin ladkon=ko=**hii** chot lagi
 these three boys=DAT=FOC hurt-F be-applied-to-PERF.F.SG
 ‘(Only) *these three boys* got hurt.’
- b. (% in tiin ladkon=**hii**=ko chot lagi
 ‘(Only) these three *boys* got hurt.’
- c. in tiin=**hii** ladkon=ko chot lagi
 ‘(Only) these *three* boys got hurt.’
- d. in**hii**N tiin ladkon=ko chot lagi
 ‘(Only) *these* three boys got hurt.’

(12b & c) contrast with (11b & c) in allowing the focus marker to appear on modifiers. Note that (12d) involves focus marking which is morphologically incorporated into the demonstrative. Given a constructive analysis which I will describe shortly, the morphological rather than syntactic appearance of *hii* here does *not* affect the establishment of clausal focus.

Finally, although a wider range of positions is possible for the discourse markers, they cannot be instantiated more than once in the NP, as seen in (13).

- (13) # in**hii**N tiin=**hii** ladkon=ko=**hii**
 these=FOC three=FOC boys=DAT=FOC
 ‘*These three boys*’

This restriction on multiple discourse marking of a constituent resembles the case restriction in (11d). I assume for now that the occurrence restriction derives from semantic incompatibility, rather than a structural restriction.

2.3 Syntactic discourse functions (DF identification at f-str)

Even when focus occurs in an NP-internal position, as in (12b-d), *the whole NP* is identified as clausal focus in terms of syntactic behaviour. Certain word order and syntactic focus phenomena support this generalization.

Multiple focii

One indication can be found in cases of multiple focii. There is a restriction on having two morphologically focused arguments in the same clause in Hindi unless the speaker resorts

⁴Note that (12b) is subject to dialectal variation. Koul (1990) offers the following example as ungrammatical:

*ghar=bhii=meN garmii hai
 house=FOC=LOC heat be-PRES.SG
 ‘It’s even hot in the house.’

McGregor (1995) cites a similar restriction on the positioning of ‘emphatic particles’, however he specifically observes that this restriction is not necessarily adhered to strictly by all speakers.

to very marked intonation in unusual contexts.⁵ Given this restriction, a cooccurrence clash implies that *hii* is identifying two different values for a single focus function in a clause.

If a marker is *within* an NP, a regular (outside-in) function such as $(\uparrow \text{FOC}) = \downarrow$ would not rule out such a cooccurrence. For example, if a modifier inside an NP has a clitic with the annotation $(\uparrow \text{FOC}) = \downarrow$, focus would just map as an NP-internal attribute, as the simplified f-structure in (14) shows. Consequently, if two focus markers appear within two NPs, each NP would simply have a focus attribute inside it and no clause level clash would be registered.



However, (15) shows that NP-internal discourse marking percolates up to the clausal f-structure. In these examples, the discourse markers occur on specifiers within NPs to show that in spite of being embedded inside NPs they are ‘visible’ at the clause level and can clash.

- (15) a. [us=ke=**hii** jootē] [mere kamre=me] pade thhe
 he=POSS.PL=FOC shoes my room=LOC lying be-PST.M.PL
 ‘*His* shoes were lying in my room.’
- b. [us-ke jootē] [mere=**hii** kamre=me] pade thhe
 he=POSS.PL shoes my=FOC room=LOC lying be-PST.M.PL
 ‘His shoes were lying in *my* room.’
- c. # [us-ke=**hii** jootē] [mere=**hii** kamre=me] pade thhe
 he=POSS.PL=FOC shoes my=FOC room =LOC lying be-PST.M.PL
 ‘*His* shoes were lying in *my* room.’

In (15a), *hii* marks the possessive modifier of the subject and in (15b) it marks the possessive modifier of the locative. In (15c), despite the fact that the two discourse clitics are structurally within NPs, a clausal cooccurrence is registered, resulting in an infelicitous sentence.

The general classification of *hii* and *bhii* as types of focus and *to* as a type of topic predicts further that the former two cannot occur multiply but they may cooccur with *to*.

- (16) [us-ke=**to** jootē] [mere=**hii** kamre=me] padhe thhe
 he=POSS.PL=TOP shoes my=FOC room =LOC lying be-PST.M.PL
 ‘*His_{top}* shoes were lying in *my_{loc}* room.’

⁵A more refined representation of scalar discourse prominence would eventually be necessary to permit a precise generalization of cooccurrence restrictions.

(16) supports this prediction, showing that a topic function and a focus function can legitimately cooccur. This contrast is a further indication that the clausal f-structure is sensitive to NP-internal discourse markers.

Preverbal focus position

The syntactic status of focused NPs can also be verified by examining the interaction of clitic marking with the grammaticalized focus *position* in Hindi: the preverbal position (Butt and King 1996). When a part of an NP is focused, the entire NP may occupy this focus position.

6

(17) a. Canonical order:

mai=ne [in**hii** tiin ladkon=ko] kamre-me bheja
 I=ERG these=FOC three boys=DAT room=LOC send-PERF.M.SG
 ‘I sent [*these* three boys] to the room.’

b. Focused element in preverbal position:

*mai=ne [() tiin ladkon=ko] kamre-me [in**hii**] bheja
 I=ERG three boys=DAT room=LOC these=FOC send-PERF.M.SG
 ‘I sent [*these* three boys] to the room.’

c. Focused NP in preverbal position:

mai=ne kamre-me [in**hii** tiin ladkon=ko] bheja
 I=ERG room=LOC these=FOC three boys=DAT send-PERF.M.SG
 ‘I sent [*these* three boys] to the room.’

In (17a), the NP containing the focus marker is in situ. (17b) shows that the marked element alone cannot appear preverbally, but in (17c) the entire host NP can optionally occupy this position.

Focus domain

Finally, it is important to establish the syntactic domain of focus in Hindi. In other words, what is the limit beyond which cooccurrences are permissible? Based on the contrast in (18), I take the finite clause to be the domain within which restrictions on multiple focii must hold.

(18) a. # raam=ne=**hii** anu=ko=**hii** bulaaya

raam=ERG=FOC anu=ACC=FOC call-PERF.M.SG

‘*Raam* called *Anu*.’

b. raam=ne=**hii** anu=ko bolaa [ki vah director=se=**hii** baat kare]

raam=ERG=FOC anu=ACC told that she director=INSTR=FOC talk do-SUBJUNCTIVE

‘*Raam* told *Anu* that she should talk to the *director*.’

(18a) is infelicitous due to the occurrence of two identical focus values. This contrasts with (18b), which contains an embedded finite clause with focus.

⁶The blank space in (17b) is merely to clarify that *inhii* is the modifier of the object.

3 Parallel analysis of discourse and case clitics

3.1 Constructive case clitics

A regular annotation for identifying the grammatical function of an NP in a c-structure, for instance $(\uparrow \text{SUBJ}) = \downarrow$, defines a path from the clausal f-structure down to the value of its SUBJ attribute.

In Nordlinger’s use of constructive morphology for case, however, case-markers themselves constructively identify the grammatical relations of arguments to the verb. When a case clitic bears a constructive specification, it contributes information about the higher f-structure within which it is contained, via an inside-out (IO) function application.

For example, if a case marker bears the functional description (SUBJ \uparrow), the whole expression (SUBJ \uparrow) represents an attribute-value pair which exists in the higher f-structure. The \uparrow indicates that the nominal itself is the value of a SUBJ attribute in a *higher* f-structure. The annotation defines a path outward, from the lexical item to the clausal f-structure.

Some of the features of Hindi grammar are in keeping with Nordlinger’s original arguments in favour of a constructive approach to case. As a discourse configurational language, Hindi allows considerable freedom in argument positioning. It shows little evidence for configurationally licensed grammatical functions.

Furthermore, mood, aspect, and semantic information can be contributed by the presence of certain case markers. For example, the dative marker *ko* can imply specificity and the ergative marker *ne* has been argued to indicate control on the part of the subject.

- (19) a. lakshmi zor=se chilaayii
 Lakshmi-NOM force=ABL yell-PERF.F.SG
 ‘Lakshmi yelled loudly. (non-volitional)’
- b. lakshmi=ne zor=se chilaaya
 Lakshmi=ERG force=ABL yell-PERF.M.SG
 ‘Lakshmi yelled loudly. (volitional)’

In (19), the only distinction in interpretation between the two sentences is in whether the action was deliberate on the part of the subject. Annotations on case clitics have therefore been argued to contribute both syntactic and semantic information to the clause level (Mohanani 1994, Butt and King 1999, Lee To appear). This assumption is in keeping with Nordlinger’s (1998:74) discussion of encoding semantic restrictions within the case marker.

Most importantly for the discussion here, a constructive view allows us to unify under a single analysis the shared patterns of “bottom up” function identification found in Hindi clitic behaviour.

3.2 Constructive discourse clitics

The representation in (20) shows how case and discourse clitics on nominals can employ similar constructive functions to indicate the clausal function(s) of their NP hosts.

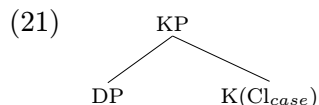
- (20) Cl_{case} Cl_{disc}
 (GF \uparrow) (DF \uparrow)

Case clitics identify the grammatical function of the NP, while discourse clitics identify which of a set of possible discourse functions the NP is associated with.

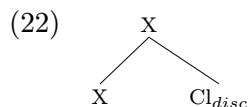
3.3 Distinct structural positions for case and discourse clitics

I have already indicated some important differences between the two types of clitics. Although they share similar lexical properties, they have distinct syntactic positions.

As (11) showed, case markers must cliticize only to the right edge of the NP. I follow Butt and King (1999) in assuming the structure for case given below, in which the case clitic serves as the head of the functional projection KP. On the analysis here, DP is the sister of K and specifier functions are within DP.⁷



Discourse markers, on the other hand, may adjoin to any part of the NP and in fact are not even restricted to nominal elements. To cover this range, I assume the simple structure in (22) for now:



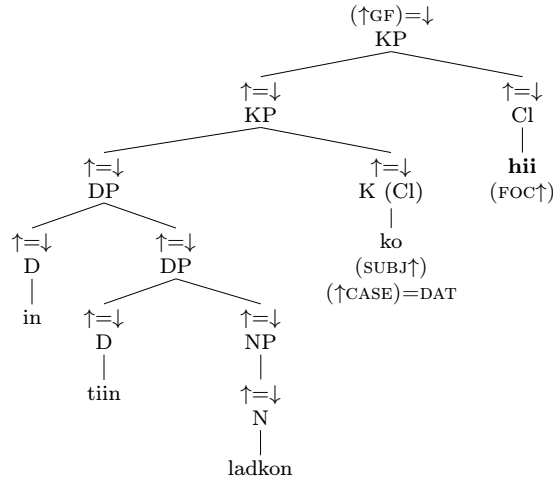
The important difference here is that case clitics head their own functional projection while discourse clitics merely adjoin under their sister's category.

3.4 Constructing DFs from within the NP

The set of examples in (23) correspond to the focus-bearing sentences I introduced in (12). These examples show that in spite of the repositioning of *hii* within an NP, the f-structure of the NP in each case is 'flattened' in an identical manner due to the constructive function mapping of FOC.

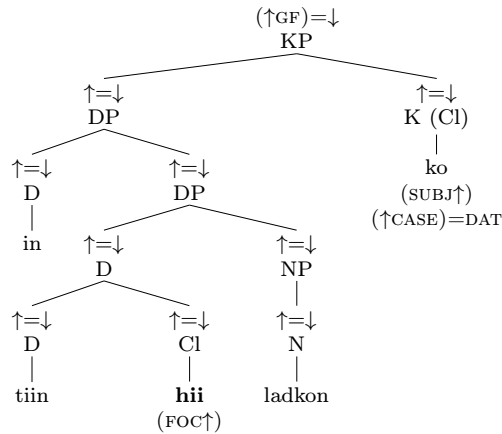
⁷The assumption that case heads its own functional projection is not crucial in the analysis presented here. It is one of several possible structural descriptions of case, but may be supported by certain head-like phenomena of case cross-linguistically.

- (23) a. in tiin ladkon=ko=**hii**
 these three boys=DAT=EXCL
 ‘(Only) *these three boys*...’

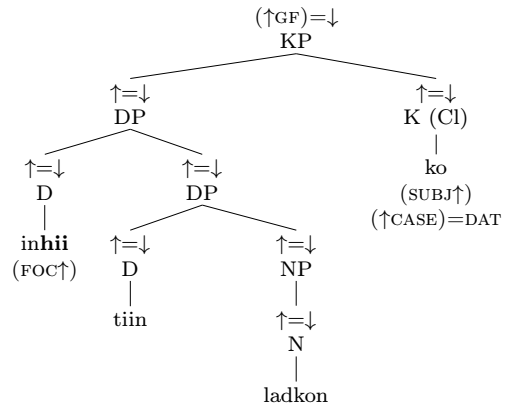


SUBJ	CASE	DAT
	PERS	3
	NUM	PL
	COUNT	3
	DEIX	PROX
FOC	[]	
PRED	‘...⟨-, -⟩’	

- b. in tiin=**hii** ladkon=ko
 these three=EXCL boys=DAT
 ‘(Only) *these three* boys...’



- c. in**hii**N tiin ladkon=ko
 these-EXCL three boys=DAT
 ‘(Only) *these three* boys...’



In (23a), the focus marker is on the right edge of the whole NP; in (23b) it is adjoined to the numeral and in (23c) it is incorporated into the demonstrative pronoun. (23c) shows that the incorporated focus forms discussed in §1.3 are equally accounted for by this analysis.

In each case, the NP is established as clausal focus in the f-structure because (FOC ↑) identifies the entire NP f-structure as the value of the outer f-structure’s focus function. Consequently, all three c-structures share the single f-structure above.

3.5 Multiple embedding

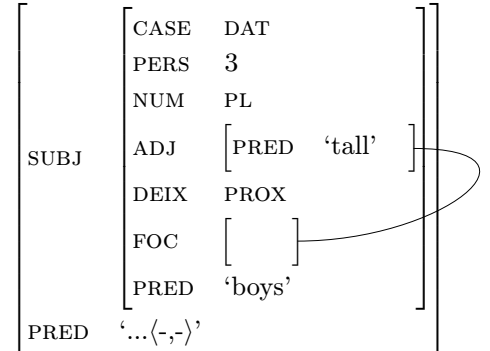
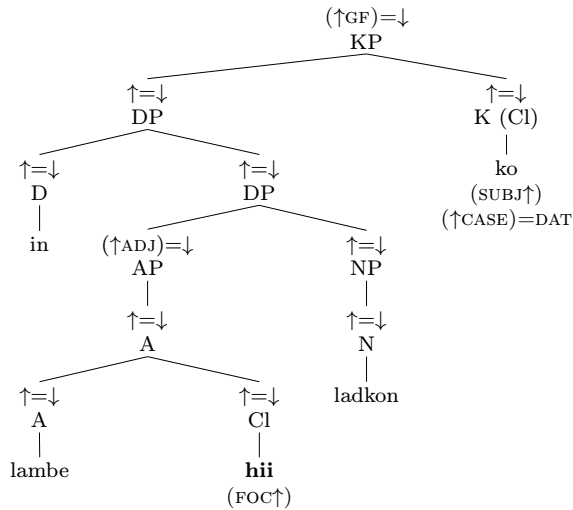
The examples in (23) describe structures in which *functional* projections carry a focus marking. For these situations, the mapping of the constructive function is straightforward, as a direct path of $\uparrow=\downarrow$ allows access to the outer clausal f-structure. Multiply embedded constituents do not permit a direct mapping of the constructive function to the clause level.

Adjectival modifiers

It is important to first note that several speakers considered focus-marking on adjectives much less acceptable than focus-marking on determiners like possessives.⁸ In the absence of a more comprehensive corpus study, the solution given here is somewhat tentative and subject to dialectal restrictions. However, it is an intuitive extension and can in fact accommodate the observed speaker variation.

Assuming that these cases are possible for some speakers, an intervening node annotated $(\uparrow \text{ADJ})=\downarrow$ prevents a direct identification of focus at the clause level. Instead, the ADJ will be identified as focus within the NP, as shown in the ‘incorrect’ f-structure in (24).

- (24) in lambe=hii ladkon=ko
 these tall=EXCL boys=DAT
 ‘Only these *tall* boys...’



This example does not identify the NP as the focus of the clause because the intervening ADJ f-structure maps focus to the outer NP f-structure only.

However, (25) indicates that adjectives are no different than other NP sites in terms of clausal focus identification.

- (25) a. [us-ke purane=**hii** joote] [mere kamre=me] pade thhe
 his old=FOC shoes my room=LOC lying be-PST.M.PL
 ‘His *old* shoes were lying in my room.’

⁸In such cases, these speakers generally claimed a preference for an NP-final clitic with intonational marking of the adjective.

- b. # [us-ke purane=**hii** jote] [mere=**hii** kamre=me] pade thhe
 his old=FOC shoes my=FOC room=LOC lying be-PST.M.PL
 ‘His *old* shoes were lying in *my* room.’

For speakers who allow (25a), (25b) is bad due to the identification of two focus values. This is the same effect as in (15c) earlier, suggesting that focus on adjectives must be equally visible at the clause level.

Embedded infinitives

In addition, certain speakers’ judgements indicate that focus in embedded *infinitives* also percolates to the finite clause level, disallowing other instantiations of focus marking in the entire clause. This phenomenon is shown in (26), where the embedded instance of *hii* clashes with a second use of the morpheme in the main clause.

- (26) (%) # raam=ne=**hii** anu=ko [director=se=**hii** baat karne=ko] bolaa
 raam=ERG=FOC anu=ACC director=INSTR=FOC talk do-INFIN=ACC told
 ‘*Raam* told Anu to talk to the *director*.’

Extension of analysis

Both of these embedded contexts – adjectival modifiers and infinitival complements – are problematic for a (FOC \uparrow) annotation because a second intervening node is annotated (\uparrow GF) = \downarrow . This node blocks percolation of the focus to the top f-structure of the finite clause itself.

I account for these provisionally with a simple extension of the analysis given so far. The (DF \uparrow) annotation can be substituted with the inside-out functional uncertainty equation in (27) (Kaplan and Zaenen 1995, Dalrymple 1993, Bresnan 1999).

- (27) ((GF* \uparrow) DF)= \uparrow

This description states that the end value of an unspecified string of attributes is also associated with a particular discourse function. Because of the uncertainty of the string, this can accommodate *both* NP-internal ADJ functions as well as embedded infinitives, in addition to the simpler cases.

Speaker variation

Furthermore, the speaker variation in allowing or disallowing these multiply embedded focii can be accommodated with a simple distinction in the lexical entries of discourse clitics:

- (28) a. Dialects which allow discourse marking at multiple levels of embedding:
 ((GF⁺ \uparrow) DF)= \uparrow
 b. Dialects which allow discourse marking only within one level of embedding:
 ((GF \uparrow) DF)= \uparrow

(28a) requires one or more attributes in the GF string. (28b) is equivalent to the original proposal of (FOC \uparrow).⁹ An added advantage of this representation is that it can be extended beyond the nominal domain. As mentioned in the presentation of the initial data, discourse markers can also appear on non-nominal elements in a clause, particularly verbal morphemes. In such cases, the GF in the annotations suggested in (28) may itself be optional, allowing the annotation to reduce to a simple statement of $(\uparrow DF)=\uparrow$.¹⁰

Finite clause as focus domain

In order to ensure that the outer limit of the focus domain is the finite clause, I include a second functional description in the lexical entries of all discourse clitics stating the existential constraint in (29):

(29) ((FOC \uparrow)TENSE)

This is in keeping with Nordlinger’s (1998:122) use of clause-level information specification. Synthesizing the latest two additions, the functional descriptions in (28) associate a DF with a GF, and the addition of (29) in the lexical entry states that the association must be such that the focus attribute is in an f-structure which also bears a tense attribute. This takes care of attribute strings which would otherwise stop short of the clausal f-structure in their mapping.

A prediction of this domain restriction is that one should not find stranded instances of discourse marked NPs. The example in (30) shows that this seems to be the case:

- (30) a. billi=ko kaun khilaata hai?
 cat=ACC who-NOM feedPROG.M.SG do
 ‘Who feeds the cat?’
- b. [i.] [ii.] [iii.]
 Raam *Raam=hii Raam=hii khilaata hai
 raam-NOM raam-NOM=FOC raam-NOM=FOC feedPROG.M.SG do
 ‘Raam.’ ‘Raam.’ ‘Raam feeds (it).’

In response to the question “Who feeds the cat?” in (30a), just saying *Raam* is perfectly acceptable. However, if the marker *hii* is adjoined to *Raam*, then *Raam=hii* cannot be a complete utterance; it requires a tensed verb as in (b(iii)).

To summarize, this section has shown how discourse clitics may mark various parts of an NP and still identify the whole NP as the focus of the clause. Discourse clitics exploit constructive functions in a manner similar to case, and in some dialects appear to be restricted to one level of embedding. In those dialects that allow further embedding within the NP, functional uncertainty and the requirement that focus percolate to a tense-bearing f-structure ensures the appropriate mapping.

⁹The expanded expression in (28b) simply states that this f-structure is the value of a focus attribute as well as the value of some GF. The simpler inside-out function application lacks the additional GF requirement but this can be ensured by Extended Coherence, whereby any discourse function must be associated with a GF.

¹⁰At this point, the analysis would encounter the problem discussed by King (1997) of restricting focus to subparts of a verbal f-structure.

4 Semantic interpretation (scope identification at s-str)

The discussion so far has specifically addressed syntactic functions. However, if we return to the examples in (12), repeated below in (31), we can see from the English translations that semantic scope differences actually emerge based on repositioning the clitic within the NP. Such NP-internal scope distinctions based on the position of discourse markers can be observed in many languages and are discussed specifically with regard to Hindi in Verma (1971, 85) as well.

- (31) a. in tiin ladkon=ko=**hii** chot lagi
 these three boys=DAT=FOC hurt-F be-applied-to-PERF.F.SG
 ‘(Only) *these three boys* got hurt.’
- b. (% in tiin ladkon=**hii**=ko chot lagi
 ‘(Only) these three *boys* got hurt.’
- c. in tiin=**hii** ladkon=ko chot lagi
 ‘(Only) these *three* boys got hurt.’
- d. in**hii**N tiin ladkon=ko chot lagi
 ‘(Only) *these* three boys got hurt.’

The constructive mechanism does not account for these scope differences. Precisely because of its radically flattening effect, the constructive mapping overgeneralizes focus and does not represent these scope and meaning differences directly at the f-structure.

Note that this type of distinction can be seen in various other cross-linguistic phenomena. One possible example is wh-feature percolation:

- (32) [In return for how much money] will you let us go free?

In (32), the wh-expression is contained *within* the constituent appearing in the clause-initial position (McCawley 1988, 477). There is a distinction between the semantic interpretation of the wh-subconstituent and the syntactic behaviour of the entire, containing constituent.

Returning to Hindi, we can observe rather subtle semantic distinctions in the reordering of focus and instrumental case clitics. Noguchi and Harada (1990) discuss a similar phenomenon in Japanese, in which the reordering of *dake* (“only”) and *de* (“by”) results in distinct semantic interpretations. They describe these as **absolute** (*de-dake*) and **minimal** (*dake-de*) restriction readings. I adopt this basic terminology for the examples below.

- (33) a. mai vahaaN saikal=se=**hii** pahuNch saktii huuN
 I=NOM.SG.F there bicycle=LOC=FOC reach can-prog.sg.f be-PRES.SG
 ‘I can get there only with a bike.’
- b. mai vahaaN saikal=**hii**=se pahuNch saktii huuN
 I=NOM.SG.F there bicycle=FOC=LOC reach can-prog.sg.f be-PRES.SG
 ‘I can get there with only a bike.’

From the meaning distinctions in the English translations in (33), we can see that (33a) implies an absolute necessity restriction while (33b) means that a bicycle is minimally sufficient (but not absolutely necessary).

Reading these fine semantic relations directly off the f-structure is inadequate due to the ‘flattening’ of the NP. Andrews and Manning (1999, 11) discuss how the flattening of f-structure is necessary for certain syntactic associations, but is often an insufficient guide for semantic interpretation. Their examples include ‘concentrically scoped’ modifiers and complex predicates, and they argue against the mediation of semantics by the f-structure. In their ‘subset’ view, where projections represent groupings of information, certain attributes may be shared while others are restricted. The semantic distinctions arising in the data presented here calls for a similar treatment.¹¹

I do not provide an account of the semantics of these clitics here. However, I suggest that rather than unifying all of the information into a single level, whether f- or s-structure, a comprehensive analysis must distinguish the syntactic mapping proposed in this paper from the fine-grained semantics alluded to in this section.¹² In other words, in the syntax the entire NP is constructively identified as clausal focus, regardless of position of discourse clitics within NP; however, semantically, meaning differences emerge based on clitic adjunction.

Conclusions

This paper has presented a preliminary attempt to account for the status of discourse clitics in Hindi as being parallel in many ways to that of case clitics. While further research is still necessary for a more complete account of the intricacies of clitic behaviour, I have argued in favour of the following generalizations:

- Case and discourse clitics share similar constructive annotations, from which they are able to identify the clause-level function of their host NP.
- The more restricted distribution of case clitics is account for by differences in their structural cliticization possibilities.
- Like case clitics, discourse clitics contribute semantic information which can be mapped independently from their NP’s syntactic function. Syntactic discourse function identification is established at f-structure by constructive morphology; scope distinctions are more fine-grained. They are therefore not read off the f-structure and are independent of constructive morphology.

¹¹Another approach to retaining the semantic distinctions of discourse marking would be to annotate the c-structure such that it maps to a highly embedded f-structure. There are several disadvantages to this approach: (a) it builds into the f-structure information which seems to belong in a distinct level of representation; (b) multiple annotations would be required at each detailed projection within the NP to allow the constructive function to reach the clause level; (c) the syntactic behaviour of the entire NP as the grammaticized discourse function would not be predicted.

¹²This positional sensitivity of semantic interpretation may ultimately account for various scoping interactions of focus with semantic information such as definiteness, volitionality, and negation.

Appendix: some formal implications

This extension of constructive annotations to discourse clitics has two formal consequences that go beyond those of case.

- [i] These clitics appear within NP nodes which are annotated with $(\uparrow \text{GF}) = \downarrow$. I assume that GF in this annotation refers to the broad set of grammatical functions, including argument, discourse, and ADJ functions. As discussed by Nordlinger (1998, 67), multiple case marking can be ruled out by general well-formedness principles (Bresnan 1999). However, in the extension here, it *is* actually possible for the annotation to permit identification of the NP as having both an argument function *and* a discourse function. Since function-argument Uniqueness will rule out the assignment of incompatible argument functions to a single NP, the single annotation $(\uparrow \text{GF}) = \downarrow$ need not be restricted to allowing an NP to be associated with only a single GF.
- [ii] Constructive case clitics will ensure that their NP is identified with an argument required by the verb's argument structure (Nordlinger 1998, 68). However, discourse functions are not licensed in this way. Thus, one interpretation of the analysis for discourse markers here is that their f-description ($\text{DF } \uparrow$) actually requires a minimal f-structure containing that DF attribute.

References

- Anderson, S. 1996. How to Put your Clitics in their Place. *The Linguistic Review* 13:165–191.
- Andrews, A., and C. Manning. 1999. *Complex Predicates and Information Spreading in LFG*. Stanford University: CSLI Publications.
- Andrews, A. 1996. Semantic Case-Stacking and Inside-Out Unification. *Australian Journal of Linguistics* 16(1):1–55.
- Bresnan, J. 1999. Lexical-Functional Syntax. Ms. Stanford University.
- Butt, Miriam, M. D. A. F. 1997. An Architecture for Linking Theory in LFG. In *Proceedings of the LFG97 Conference*, <http://www-csli.stanford.edu/publications/LFG2/lfg97.html>.
- Butt, M., and T. H. King. 1996. Structural Topic and Focus without Movement. In *Proceedings of the First LFG Conference*, XRCE, Grenoble.
- Butt, M., and T. H. King. 1999. The Status of Case. Ms. University of Stuttgart and Stanford University.
- Choi, H.-W. 1996. Optimizing Structure in Context: Scrambling and Information Structure. PhD Dissertation, Stanford University.
- Dalrymple, M. 1993. *The Syntax of Anaphoric Binding*. Stanford: CSLI Publications.
- Dik et al., S. 1981. On the Typology of Focus Phenomena. In H. et al. (Ed.), *Perspectives on Functional Grammar*. Foris Dordrecht.
- Horvath, J. 1995. Structural Focus, Structural Case, and the Notion of Feature-Assignment. In K. E. Kiss (Ed.), *Discourse Configurational Languages*, 28–64. Oxford: Oxford University Press.
- Kaplan, R., and A. Zaenen. 1995. *Long-distance Dependencies, Constituent Structure, and Functional Uncertainty*. Stanford, California: CSLI Publications. chapter 3, 137–165.
- King, T. H. 1997. Focus Domains and Information Structure. In *Online Proceedings of the LFG97 Conference*, <http://www-csli.stanford.edu/publications/LFG2/lfg97.html>.
- Koenig, E. 1991. *The Meaning of Focus Particles: A Comparative Perspective*. London: Routledge.
- Koul, O. N. 1990. The Use of Particles in Hindi. *International Journal of Dravidian Linguistics* 19(1):22–36.
- Lahiri, U. 1998. Focus and Negative Polarity in Hindi. *Natural Language Semantics* 6(1).
- Lambrecht, K. 1994. *Information Structure and Sentence Form: Topic, Focus, and the Mental Representation of Discourse Referents*. Cambridge: Cambridge University Press.
- Lee, H. To appear. Aspectual and Thematic Licensing of Grammatical Case. *Proceedings of the Chicago Linguistics Society* 35(1).
- Mahajan, A. 1990. *The A/A' Distinction and Movement Theory*. PhD thesis, MIT. MIT Working Papers in Linguistics.
- McCawley, J. 1988. *The Syntactic Phenomena of English*. Vol. 2. Chicago: The University of Chicago Press.
- McGregor, R. S. 1995. *Outline of Hindi Grammar*. Oxford: Oxford University Press.
- Mohanan, T. 1994. *Argument Structure in Hindi*. Stanford: CSLI Publications.

- Noguchi, N., and Y. Harada. 1990. Semantic and Pragmatic Interpretation of Japanese Sentences with *Dake* (“only”). Ms. CSLI, Stanford University.
- Nordlinger, R. 1998. *Constructive case: Dependent-Marking Nonconfigurationality in Australia*. Stanford: CSLI.
- Prince, E. 1992. The ZPG Letter: Subjects, Definiteness, and Information-Status. In W. Mann and S. Thompson (Eds.), *Discourse Description: Diverse Linguistic Analyses of a Fund-Raising Text*, 295–325. Amsterdam: Benjamins.
- Sadler, L. 1998. Syntactic clitics, the Structure-Function Mapping and Morphological Blocking. In *Online LFG Archive*, <http://www-lfg.stanford.edu/lfg/archive/archive.html>.
- Simpson, J. 1991. *Warlpiri Morpho-Syntax*. Dordrecht, Holland: Kluwer Academic Publishers.
- Vallduvi, E. 1992. Information Packaging: A Survey. Research Paper.
- Verma, M. K. 1971. *The Structure of the Noun Phrase in English and Hindi*. New Delhi: Motilal Banarsidass.