

Hindi Aspectual Verb Complexes

HPSG-09

1 Introduction

One of the goals of syntax is to determine how much languages *do* vary, in the hope to be able to make hypothesis about how much natural languages *can* vary. The syntax of aspect is a fertile ground for comparing approaches to variation in the interface between syntax and semantics. Cinque (1999) is a leading example of a research program that attempts to show that at a particular level of representation, one can establish an almost isomorphic correspondence between the syntax and semantics of aspect. Other approaches hypothesize that the non-correspondence between the syntax and semantics of aspect is greater and that the surface strings’ imperfect correspondence might reflect the true extent of the non-correspondence between syntactic and semantic structure. Koenig and Muansuwan (2005), for example, argue that the two distinct ways of syntactically expressing aspectual notions in Thai cannot easily be reduced to the same syntactic structure “deep down”. In this paper, we present data from Hindi to show that *some* aspect markers in Hindi can be either verbs that take main verbs as complements to form complex predicates or are verbs that modify main verbs. Thus, the Hindi facts parallel the Thai facts except that the head/modifier dual structure is at the verb rather than at the VP level. More importantly, case marking facts provide compelling evidence that the syntactic structures involved in Hindi are truly distinct at a “deep” level.

2 Hindi Aspectual Verb Complexes

In Hindi, aspectual verb complexes involve two types of V-V structures. In what is standard for a head-final language, the non-finite verb denoting a situation-type (i.e., the MAIN verb) can be followed by a finite LIGHT verb, an aspectual functor which semantically modifies the main verb’s meaning (1) to form a *standard aspectual verb complex construction*. The order of the main and light verbs can also be reversed to form a *reverse aspectual verb complex construction*, where the finite light verb precedes the non-finite main verb (2).

(1) *Ram=ne Leela=ko tamaachaa maar di-yaa*
Ram=Erg Leela=Dat slap.M.Sg hit:MV give-M.Sg:LV
‘Ram slapped Leela (hit Leela with a slap).’

(2) *Ram=ne Leela=ko tamaachaa de maar-aa*
Ram=Erg Leela slap.M.Sg give:LV hit-M.Sg:MV
‘Ram slapped Leela (hit Leela with a slap).’

The semantics of examples (1) and (2) differ only in that the latter carries an indication of suddenness. Syntactically, the two verbs in both standard and reverse constructions form a single unit with respect to movement, co-ordination, and negation. The two constructions differ functionally with respect to agreement and subject case assignment. For instance, in (1)-(2), the light verb agrees with the highest unmarked argument *tamaachaa* in the standard construction, and the main verb in the reverse construction, as indicated by the inflection *-(y)aa*. Similarly, we show below that the subject is assigned case by the light verb in the standard and the main verb in the reverse construction.

2.1 Case assignment

Hindi is a split-ergative language where the ergative case is restricted to subjects of transitive verbs in the finite clause (usually considered the perfective), which is marked by adding the suffix *-(y)aa/ii* to the stem (3a). It is also a Fluid-S language, where certain intransitive “bodily function” verbs can optionally select for an ergative subject (3b).

- (3) a. *Ram=ne ghar banaa-yaa* b. *Ram(=ne) khaans-aa*
 Ram=Erg house make-M.Sg Ram(=Erg) cough-M.Sg
 ‘Ram made a house.’ ‘Ram coughed.’

The default subject for the verb *khaans* (cough) is unmarked; however, in certain contexts, such as (3), the subject is assigned ergative case. One prominent explanation for the selection of the ergative in this case is that the assignment of ergative case correlates with an expression of volitionality, or more specifically conscious control or choice that an agent is interpreted to have over the action (see Mohanan, 1994; Butt and King, 2002). Under this approach, when the ergative is not required structurally, it contributes the information that the action is within the internal control of the subject. Several attested corpus examples (cross-checked with consultants) suggest this analysis is incorrect. Consider the following example, where it is very doubtful that the dog made a conscious choice not to bark.

- (4) *court mein bahut log moujuud th-ee phir bhii kisii par bhii*
 court in many people present be-Past.3.Pl still any on also
 kuttee=ne bhauunk-aa tak nahii
 dog=Erg bark-M.Sg even neg
 ‘Many people were present in court but still the dog did not even bark at anyone.’

Other data (not presented here) suggest that ergative marking on verbs describing bodily functions (including sound emission) serves to indicate that the property expressed by rest of the sentence is *counter to expectation* for the subject’s denotation. The subject is assigned ergative case only when the action it performs, is not expected. For example, it is unexpected for the property of not barking to be a property borne by the dog (in the situational context of (4)). Therefore, we claim that when not required structurally, the ergative case serves to indicate that the property expressed by the rest of the sentence is *counter to expectation* for the subject’s denotation.

With respect to complex predicates, previous research (on the standard construction) has argued that the light verb always assigns case to the subject (Butt, 1994); the subject must be ergative if the light verb is transitive and nominative (henceforth unmarked) if the light verb is intransitive. (The (in)transitivity of the light verb is a leftover from its non-idiosyncratic, main verb usage.) For instance, with the transitive main verb *gaa* (sing), the subject is assigned ergative case (5a) if the light verb is transitive and is unmarked (5b) if the light verb is intransitive. A similar pattern is illustrated in (6) for the main verb *ciikh* (scream). Note that among intransitive verbs, only verbs denoting bodily function can appear with either a transitive or an intransitive light verb.

- (5) a. *Ram=ne gaanaa gaa* ‘Ram sang a song (had to).’
 Ram.M=Erg song sing:MV
 daal-aa
 put-M.Sg:LV
 b. *Ram gaanaa gaa pad-aa*
 Ram.M song sing:MV fall-M.Sg:LV
 ‘Ram sang a song (without wanting to).’

- (6) a. *Ram ciikh pad-aa* b. *Ram=ne ciikh daal-aa*
 Ram.M scream:MV fall-M.Sg:LV Ram=Erg scream:MV put-M.Sg:LV
 ‘Ram screamed suddenly.’ ‘Ram screamed violently.’

The above pattern does not apply to the reverse construction and here it is the main verb that assigns case to the subject. For instance, even though the light verb *de* (give) is transitive, the subject in (7) is unmarked for case, because the main verb *bhaag* (run) is intransitive. Similarly, when the transitive light verb *de* (give) forms a reverse aspectual verb complex in (8) with the transitive main verb *maar* (hit), the subject is ergative. Even with an intransitive light verb *jaa* (go) in (9), the transitive main verb *beech* (sell) selects for an ergative subject.

- (7) *Ram de bhaag-aa*
 Ram.M give:LV run-M.Sg:MV
 ‘Ram ran (rapidly).’
- (8) *Ram=ne Leela=par kiitaab de maar-ii*
 Ram.M=Erg Leela=Loc book give:LV hit-F.Sg:MV
 ‘Ram threw the book on Leela (forcefully).’
- (9) *Ram=ne apnaa makaan jaa beech-aa*
 Ram.M=Erg self house go:LV sell-M.Sg:MV
 ‘Ram sold his house.’

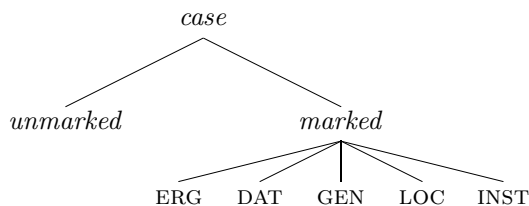


Figure 1: *Hindi Case Ontology*

Thus, while the light verb assigns case to the subject in the standard construction, the main verb assigns case to the subject in the reverse construction. Case assignment in aspectual verb complex constructions is therefore positional, i.e., assigned by the last verb of the aspectual verb complex. The Hindi case values are organized as shown in Figure 1. The ergative/unmarked alternation is captured by the rules in (10-12). If there is no case specification, then the subject is unmarked (Rule 1). This default is overridden in the perfective by the other two case assignment constraints. While the assignment of ergative case for the transitive verbs (Rule 2) is straightforward, the assignment of ergative case to the subject of an intransitive verb (Rule 3) is more constrained (we use Minimal Recursion Semantics, Copestake et al. (2005), to model the semantic contribution of ergative case). Note that the aspectual value of the verb is treated as a head feature since it affects verbal morphology.

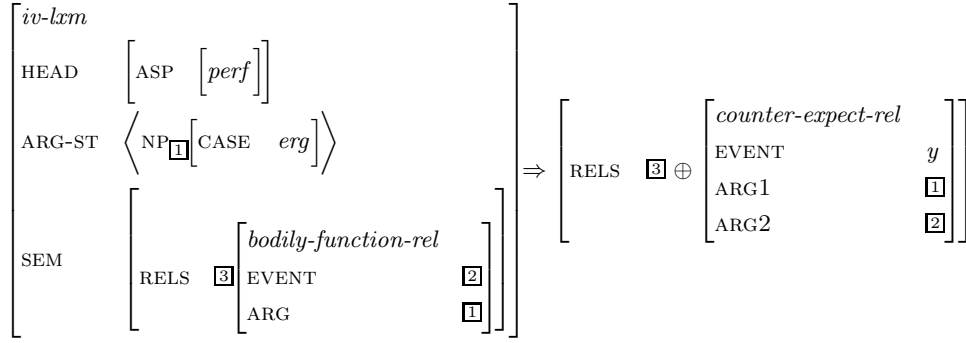
- (10) *Rule 1: By default, the subject is unmarked.*

[CASE /unmarked]

- (11) *Rule 2: If the verb is transitive and perfective, then the subject is assigned (ERG) case.*

$$\left[\begin{array}{c} tv-lxm \\ \text{HEAD} \quad \left[\text{ASP} \quad [perf] \right] \end{array} \right] \Rightarrow \left[\text{ARG-ST} \quad \left\langle \text{NP} \left[\text{CASE} \quad erg \right], \dots \right\rangle \right]$$

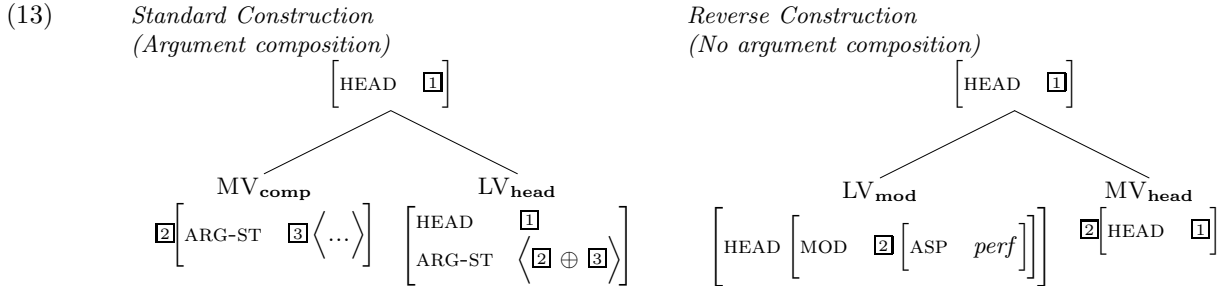
- (12) *Rule 3: If the verb is intransitive and perfective, denotes a bodily function event, and the subject is assigned ERG case, then the action is unexpected given the actor.*



We have now implemented the basic lexical case assignment constraints in HPSG. As discussed previously, the main difference between the standard and the reverse construction impacts which verb is the construction’s head. In what follows, we propose a distinct analysis for both constructions that involves argument composition in the standard but not the reverse construction.

2.2 Argument Composition (or not)

The two verbs in the standard aspectual verb complex construction do not function as heads of independent clauses but rather form a verb complex of a single clause. Within HPSG, such constructions have been analyzed as involving an operation of *argument composition* wherein the light verb is considered an operator that subcategorizes for the main verb, and its argument structure also includes what its complement verb subcategorizes for (cf. Hinrichs and Nakasawa (1994) for German, or Abeillé and Godard (2002) for Romance complex predicates).¹ We show that an argument composition analysis is also appropriate for the standard aspectual verb complex construction in Hindi. This is illustrated in (13) on an abbreviated phrase structure tree.

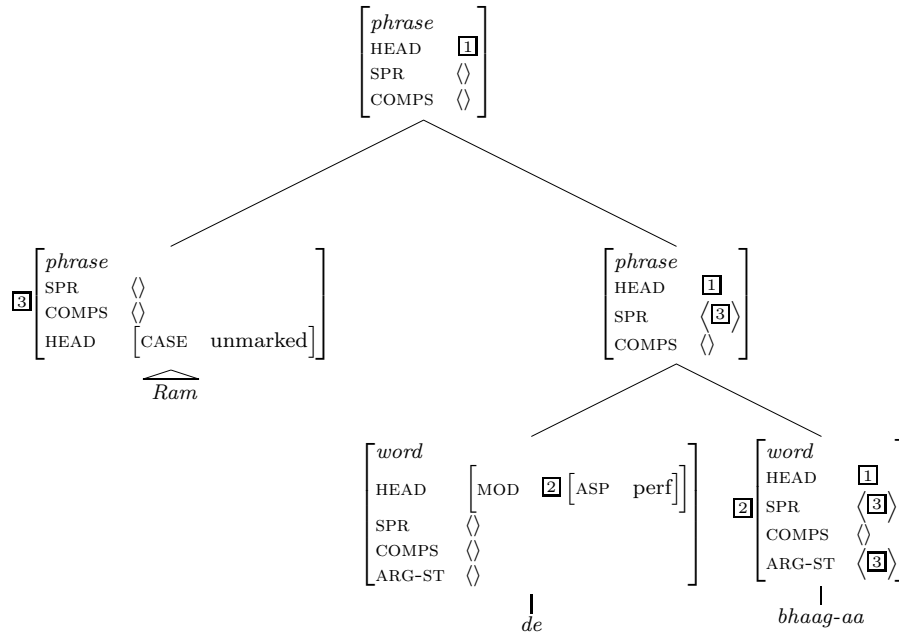


In the reverse aspectual verb complex construction, on the other hand, we argue that the main verb is the syntactic head because it assigns case to the subject and agrees with the highest unmarked argument. Furthermore, argument selection in Hindi, a head-final language, takes place from right to left (see (13) i.e., the light verb would be expected to follow the main verb if it were the head of the reverse construction). We need a different mechanism to capture both these facts. We analyze light verbs in the reverse construction as modifiers that take what they modify as arguments. Modifiers (e.g., adjectives or adverbs) in Hindi typically precede the expressions that they modify (Kachru, 1980). The modifier status of the light verb in the reverse construction can be modeled using the MOD feature, as outlined in (13).² The reverse construction in example (7) is illustrated below.

¹A type-raising analysis along the lines of Kim and Sag (2002), suggested by a reviewer can also be envisaged.

²We do not adapt a *head-marker structure* because light verbs’ semantics is not entirely ‘functional’ or ‘grammatical’ as is usually the case with markers (Pollard and Sag, 1994, p.45); in addition to marking aspect, light verbs also encode subtle semantic notions e.g., suddenness, benefaction, etc.

(14)



In (14), the subject Ram (3) appears only on the specifier and argument-structure list of the main verb, as there is no argument composition in the reverse construction. The light verb *de* (give) modifies the main verb. The head of the phrase is the main verb *bhaag* (run) and thus determines the subject’s case. Crucially, the non-null value of the MOD feature indicates that the light verb cannot be the head of the construction. This ensures that in spite of being the semantic head, the light verb cannot assign case to the subject.

3 Summary

In this paper, we examine two distinct Hindi V-V constructions that express various aspectual notions. We show that whereas the standard construction is an example of complex predicate formation (the light verb argument composes with that of its complement main verb), the reverse construction is an example of Head-modifier structure (the light verb is a modifier of the main verb). It is hard to see how case-marking could be assigned by distinct heads if the underlying structures are the same (at least under traditional assumptions about case assignment). The fact that case-marking is “positional”, i.e. is governed by the light verb in the standard construction and the main verb in the reverse construction supports the conclusion that the mapping between aspectual semantics and syntactic structure need not be uniform within a language, an argument similar to the one presented in Koenig and Muansuwan (2005) for Thai. Such data present a challenge to the hypothesis (such as in Cinque (1999)) that the semantic structure of aspectual functors is almost isomorphic to the syntactic structures that express them. On the other hand, a framework such as HPSG that distinguishes between syntactic and semantic heads and allows for semantic and syntactic information to be partially dissociated can easily model these facts.

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