

Dependent Structural case and the role of functional projections.

1. Introduction: subject and object case in Hindi/Urdu:

Hindi/Urdu and many related languages of South Asia have a distinctive property in the morphological cases which mark subjects and objects¹. Subjects of many transitive (bivalent) verbs must have ergative case in finite perfective sentences. Direct objects of these verbs may have dative case if the direct object phrase has animate or specific reference, otherwise it has nominative case. Aissen 2003 shows that this differential object marking in Hindi/Urdu is determined primarily by animacy rather than specificity, a point to which I will return later in the paper. Both ergative subject and dative direct object are possible in the same sentence. Indirect objects have (lexical) dative case. In other verb types, arguments have lexical dative or locative case. All of these morphological cases are expressed in Hindi/Urdu with postpositions.²

Case patterns in Indic languages present interesting problems. The morphological case patterns of Hindi/Urdu and similar languages do not fall out easily from the case-licensing components of earlier theories such as Government and Binding (Chomsky 1981), which were better adapted to languages with nominative subjects and accusative direct objects. This theory assumed an unanalyzed VP structure and either structural or theta-related conditions for case. An interesting revision of GB assumptions about morphological case was proposed by Marantz (1991), which sorted out various subtypes of case into a disjunctive hierarchy of cases, which matches the bottom to top phrase structure of verbal and clausal projections.

A motivation behind Marantz' proposal was to account for the complementarity of dative and ergative case on subjects in Georgian, depending on the tense information on the verb. Marantz' hierarchy is given in (1). One of principal innovations is the concept of 'Dependent structural case', case which reflects transitivity or other information such as tense/aspect. The focus of this paper will be on exploring a new account of this category of case.

1) Marantz 1991: Disjunctive hierarchy of case realization:

- a. i. Lexically governed case
- ii. **'dependent' case (ACC [OR] ERG) [Related to V's bivalence]**
- iii. Environmentally sensitive case (NOM; GEN)
- iv. Default; elsewhere

b. Dependent case is assigned by V+I to a position governed by V+I when a distinct position governed by V+I is distinct from the chain being assigned dependent case.

In this paper, I will retain the classification of morphological cases, particularly *lexical case* and *dependent structural case*, while offering an account of how cases can be licensed without dependence on the idea of Government (1b), now abandoned (Chomsky 1995). Assumptions about lexical case carry over: it is associated with specific predicates and specific theta roles or semantic notions. While not much is said about this kind of case within the Minimalist program, it seems to be a common assumption that Lexical case is checked at MERGE, when the arguments theta roles is discharged. (Chomsky 1995; Ura 2000). If so, then lexical case is checked/licensed very early in bottom-to-top syntactic derivation, retaining the ordering which Marantz assigns to this category of case relative to other types of case.

In this paper I will be discussing the licensing of dependent structure cases (DSC), ergative on subjects and dative on direct objects. The question will be how to represent their case-licensing conditions without depending on Government. Marantz' account of DSC requires distinct chains, suggesting distinct functional projections which check ERG subjects or DAT on direct objects. But the proposal for Hindi/Urdu must allow for both ERG and DAT to be present in one clause, unlike the requirement in Georgian (and as we will see, in an Indic language) that there be an exclusive disjunctive relation, either ERG or DAT but not both.

I will discuss the different lexical classes of bivalent verbs in Hindi/Urdu, as defined by possible case combinations for subject and object. I show that verbs fall into two major types, those with lexical case on either the subject or the object, and those which may have dependent structural case on the subject and object. There is a logical dependency of these cases: if a verb may have a an ergative subject, it may have a dative object, but the absence of ergative case still allows a dative object. I propose to extend the verbal projection for this category, introducing two functional heads within vP, one associated with ergative subject case, the other with dative object. I show how differences of these functional heads account for exceptions of case marking in Hindi/Urdu, and systematic case differences between Hindi/Urdu and Kashmiri.

2. Structural case on subjects and direct objects in Hindi/Urdu

Before proceeding to the proposal for case licensing in Hindi/Urdu, I give a number of examples of how the cases are used, showing the case combinations which are possible for subjects and direct objects. The summary is followed by sentence examples cross-referenced by example numbers in (2). Lexical case is marked by *, exceptional patterns by italics.

2) Summary of examples

Subject	Direct Object	Inflection on Verb
a) Nominative (3)	Dative	Non-perfective (Impf, future)
b) Nominative (4)	Nominative	Non-perfective (Impf, future)
c) Ergative (5)	Dative	Perfective

d) Ergative (6)	Nominative	Perfective
e) Nominative (7)	<i>Nominative, dative</i>	<i>Perfective</i>
f) Dative* (8)	Nominative	All kinds of inflection
g) Nominative (9)	Locative*	All kinds of inflection

Hindi/Urdu is a split-ergative language. In non-perfective clauses, the subject must be nominative, but the direct object may be dative (3) or nominative (4):

3) Nominative subject case triggering agreement, dative direct object:

a. woo hameeN deekh rahaa hai
 3sm-nom we-dat see prog is
 ‘He is looking at us.’ (Bahri 318)

b. tum usee . . . turant pahcaan jaa-oogee
 you-fam nom 3s-dat immediately recognize go-fut-you-fam
 ‘You will recognize him/(her) at once.’ (Bahri 382)

4) Nominative subject case, Nominative direct object

woo kaapiyaaN **deekh**-eegaa
 3sm answer sheets see-fut
 ‘He will examine/look at {the} answer sheets

In finite, perfective clauses, transitive subjects are normally ergative, and the direct object may be dative (5) or nominative (6). The combination in (5) is one of the central facts to be explained in this paper. A sentence of the type in (5) is not possible in Georgian.

5) Ergative subject, dative direct object (finite perfective clause)

us-nee hameeN deekh-aa (tak) nahiiN [Dative direct object]
 3s-erg we-dat see-pf up-to not
 ‘He didn’t (even) look at us.’ Bahri 1992 319

6) Ergative subject, nominative direct object (finite perfective clause)

us-nee jiiivan-meeN bahut kuch(*koo) **deekh**-aa hai [Nominative object]
 3s-erg life-in much some (*dat) see-pf is
 ‘He has seen much in life.’ (Bahri 318)

There are two lexical exceptions to this class: *laa-naa* ‘bring’ and *bool-naa* ‘say’, which may not under any conditions have ergative subjects.

A small number of exceptional verbs may optionally or obligatorily lack ergative subjects yet retain dative direct objects (7).

- 7) a. *maiN-nee un-laRkooN-koo pahcaan-aa nahiiN*
 I -Erg those boy-Pl-Dat recognize-Pf not
 ‘I didn’t recognize those boys’. (Optionally ergative subject)
- b. *maiN un-laRkooN-koo pahcaan ga-yaa*
 I -Nom those boy-Pl-Dat recognize go-Pf
 ‘I recognized those boys’.

These verbs tend to fall into the verbal aspectual class of achievements.³

In addition to the transitive verb types shown above, there are two very large classes of bivalent verbs, with a lexical case on one of the arguments, with a lexical dative on the subject (8) or a lexical locative on the direct object (9):

8) Lexical dative subject⁴

Dative subject, nominative object

- a. *mujhee/*maiN-nee eek upaay *koo suujh gay-aa/*li-yaa (hai)*
 I-dat *I-erg one means-nom *dat see go-pf/ *take-pf (is)
 ‘I saw/have seen a solution; a solution came/has come to my mind’ (Bahri 1992.670)

- b. *usee apnaa doost mil ga-yaa*
 3s-dat self’s friend meet go-pf
 ‘He met his friend (by chance).’

9) Nominative subject, locative object --or dative subject, nominative object

- woo/*nee apnee doost-see/*koo mil ga-yaa*
 3sm /*erg self’s friend-with/*dat meet-go-pf
 ‘He met his friend (by appointment).’

It is never possible in Hindi/Urdu to have a dative subject with a dative object (8a).

Interestingly, in Sinhala, this case combination is possible when a transitive verb is combined with a verbal affix adding an involuntary or impulsive meaning to the event. The subject has dative case, and the object is dative (for animate direct objects) (Gair 1998: 71).

In (10), I summarize the ‘Indic’ case pattern:

10) Summary: Indic Case:

- a. NP-subj -erg/ nom NP-obj -**dative**/nom [Dependent structural case in **bold**]
- b. NP-subj-*dat* NP-obj- nom [Lexical case in *italics*]

c. NP-nom NP *-loc*

In the first group of verbs (10a), the object may be marked for dative case, and the subject is obligatorily or optionally ergative, in perfective aspect. In the second group, the subject has obligatory lexical dative case, and there must be a nominative object (10b), or the lexical case is on the object, and the subject must be nominative. In the Appendix are some examples of this same pattern of case marking from in Panjabi, a split ergative language, and Kurmali, an Eastern Hindi language with invariant ergative subject marking.

3. Dependency in Hindi/Urdu

In this section, I will offer a syntactic structural representation which derives the relation between ergative subject case and dative direct object case (3)-(7). This relation can be summed up as a classical conditional sentence (11), which has the consequences in (12):

11) If ergative is possible on the subject, then dative is possible on the direct object.

- a. Ergative subject case is a sufficient condition for dative direct object case.
- b. Dative direct object case is a necessary condition for ergative subject case.
- c. If no dative is possible on the direct object, then no ergative case is possible on the subject.
- d. Ergative case is possible on the subject only if dative is possible on the direct object.

12) Consequences:

- a. Both ergative and dative case may occur in the same sentence.
- b. Dative case on the direct object may occur without ergative case on the subject.
- c. Ergative case without an internal object which could get dative is not possible in transitive verbs [Assuming a possible object which could have animate reference]

There is a dependency relation between ERG and DAT, but there is also a certain independence allowed by the semantics of the conditional connective in (11). The conditional statement does not apply if either the subject or the internal object get lexical case (8)-(9) The results reflect both lexical variation in the language and the effects of verb combinations allowed in Hindi/Urdu.

Taking Marantz' requirement for distinct chains, and the conditional relation in (11), I propose that the licensing conditions for DAT and ERG are represented on two functional heads which are projected above VP. I will call these heads X and Y, bearing case and categorial selection features. Later in the paper, I will offer some speculations about the categorial identity and semantic contribution of these heads.

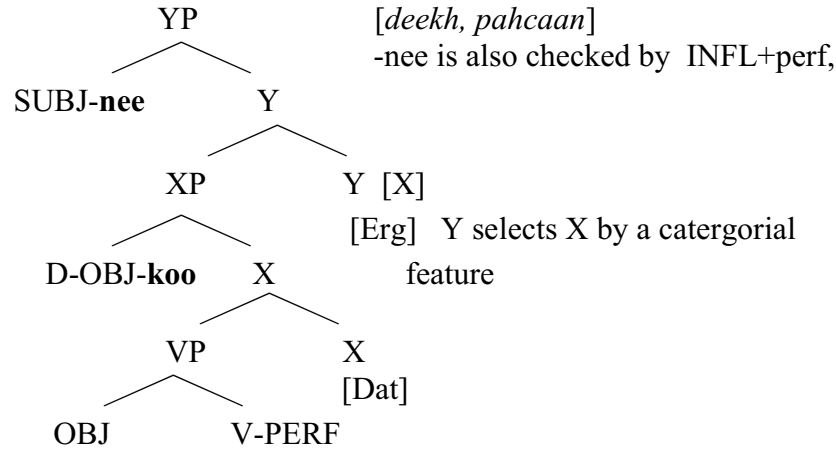
The proposal is the following:

- 13) a. Dative direct object case is checked/licensed by X functional projection.
[Subject to animacy/specificity of reference, Aissen (2003)]
- b. Ergative subject case is licensed/checked by Y functional projection

[Subject to conditions on sentence inflection.]

In combination with VP, we derive the following projection for the majority of ergative subject verbs:

14) Structure of the VP projection:

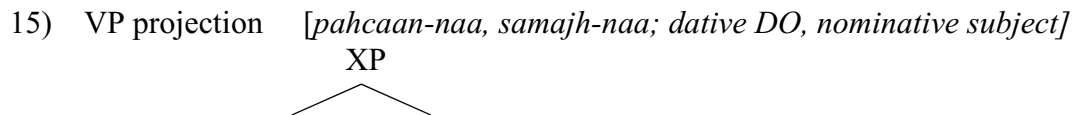


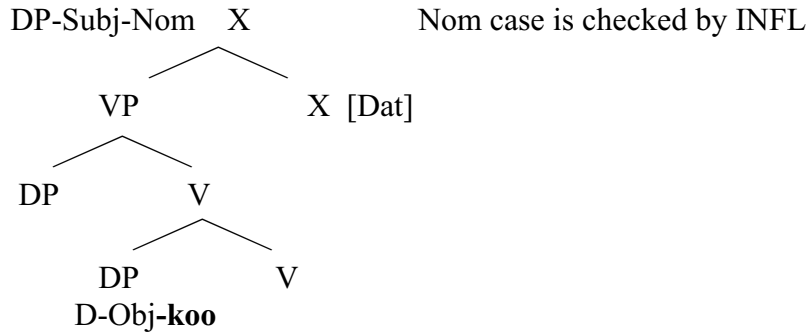
The X head (optionally) bears the [Dat] case feature when it is merged with VP. This feature is checked by movement of DP-OBJ to specifier position of XP. The Y projection bears a categorial feature [X] guaranteeing that XP is present when Y is merged. Y bears the [Erg] case feature. This selection feature derives the transitivity requirement for the use of ergative case. But it leaves open the possibility that ergative case feature is absent, so that the subject is nominative and the direct object still may be dative. In the genuine lexical exceptions *laa-naa* ‘bring’ *bool-naa* ‘speak, say, talk’, there is a Y projection, but it is lexically specified as lacking [Erg].

3.1. Arguments for the presence/absence of X and Y and associated features

So far the X and Y projections are purely abstract, with no surface reflexes other than the cases they are intended to explain. Before offering some direct evidence, I want to offer arguments for assuming the presence of Y and Y, in order to explain the lexical variation in case uses in Hindi/Urdu, and the case variation which occurs in combinations of V and V.

3.1.1 The first argument is based on the presence in Hindi/Urdu of verbs which optionally or obligatorily lack ERG in perfective finite clauses, but retain DAT, such as *pahcaan-naa* ‘recognize’, *samajh-naa* ‘understand’. For this case combination, I propose that the non-ERG structure is (15):





For speakers who allow both NOM and ERG subjects, I'll assume that the verbs have two verbal projections, both (14) and (15). The X projection is present in (15), allowing a dative direct object to be checked by movement as in (14). The subject has NOM case, checked in the INFL complex.

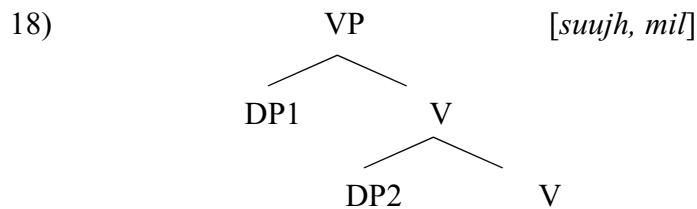
16) *maiN-nee un-laRkooN-koo pahcaan-aa nahiiN*
 I -Erg those boy-Pl-Dat recognize-Pf not
 'I didn't recognize those boys'. (Optionally ergative subject)

17) *maiN un-laRkooN-koo pahcaan ga-yaa*
 I -Nom those boy-Pl-Dat recognize go-Pf
 'I recognized those boys'.

The verbs in this class are not numerous, varying from speaker to speaker, but they are all achievements. For some speakers, the Y projection with [Erg] is required if there is an overt direct object (16), otherwise the NOM subject is used. But other speakers allow a NOM subject with a dative direct object (17).

The verbs which fall into this class have a range of interpretations which can be captured by the dual syntactic representation (17). The instantaneous telic interpretation of 'recognize' can be associated with the truncated projected in (15), while the accomplishment interpretation 'identify' is associated with the full projection in (14). I will return to this point later.

3.1.2. The second argument is based on a much more general class of bivalent verbs which allow neither ERG nor DAT, such as *suujh-naa*, 'see' *mil-naa* 'meet'. For these verbs, I propose the bare VP projection (18), in which both the X and Y heads are omitted.



Verbs of this type fall into two large classes, those which have a lexical case DAT on DP 1, or a locative case on DP2] (Davison 2004)

19)a. *mujhee*/*maiN-nee eek upaay *koo **suujh** gay-aa/*li-yaa (hai)
 I-dat *I-erg one means-nom *dat see go-pf/ *take-pf (is)
 'I saw/have seen a solution; a solution came/has come to my mind' (Bahri 1992.670)

b. woo/*nee apnee doost-see/*koo **mil** ga-yaa
 3sm /*erg self's friend-with/*dat meet-go-pf
 'He met his friend (by appointment).'

The lexical representation of these verbs associates an obligatory lexical case with one of the two arguments. This obligatory property is evidence of the presence of a lexical case (feature) on the verbal head. In my proposal, the presence of lexical case is enough to rule out a possible projection by merger with an X or Y head. Lexical case, we assume, is checked early, at MERGE, and this fact derives the priority of lexical case in Marantz' hierarchy.

3.1.3. Lexical exceptions: involve stipulations associated with specific verbs. A very small number of bivalent verbs prohibit any use of ergative case at all. These verbs are *laa-naa* 'bring' (20a), and *bool-naa* 'say, speak'(20b), which freely allow dative direct objects:

20) a. *mujhee ummiid nahiiN thii* [ki meeraa mitr ...*mujhee* aisee ghaTiyaa hooTal-meeN
 I-dat hope not was that my friend I-DAT such inferior hotel -in
 laa-yeegaa
 bring-fut-3sm

'I didn't hope [that my friendwould bring me to such an inferior restaurant.' Nespital 1997: 1041.

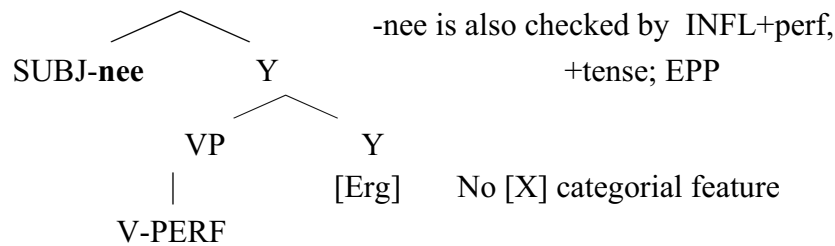
b. woo *is jhuuTh-koo* nahiiN bool-aa.
 3s this lie-dat not say-pf

'He hasn't told *this* lie (though he has told others).'

This kind of lexical exception involves the full verbal projection (14) but with the lexical stipulation that Y may not bear the feature [Erg] (however this may be represented).

The second class of lexical exception also involves a small class of *intransitive* verbs which may optionally have ergative subjects. For this class, I propose that the lexical exception is expressed as the possibility of Y alone being projected optionally without the [X] categorial selection feature:

21) YP [bhouNk,'bark' chiiNk 'sneeze']



The conditional statement in (11) is not violated, in that there is no direct object whose case is determined. The class of verbs which has this option is quite odd, including *bhauNk-naa* ‘bark’ as well as some verbs of bodily function *khaaNs-naa* ‘cough’ (see Davison 1999 for a more or less exhaustive list from Hindi/Urdu and other Indic languages). The presence or absence of the ergative case on the subject is not associated with volitionality, at least in Hindi and for Indian Urdu speakers.⁵ The class is not uniform--some verb have cognate nouns like *khaaNsii* ‘chronic cough’, but not all: **bhauNk* ‘barking’ is not a possible noun. The verbs seem not to include unaccusatives, but some are semelfactives (Smith 1997), verbs referring to a single instantaneous event like ‘knock’.

3.2. In addition to the basic variation in lexical verbs with respect to case arrays, there are also variations of subject case in V-V combinations. Auxiliary verbs such as *sak-naa* ‘be able’ combine with a bare main verb (22a), and main verbs may combine with ‘vector’ verbs such as *baiTh-naa* lit. ‘sit’ (22b). Ergative case may be disallowed without affecting dative direct object case.

22)

a. woo/ * us-nee *hameeN* deekh nahiiN **sak-aa** [Dative direct object]
 3s-nom 3s-erg we-dat see- not be.able-pf
 ‘He **wasn’t able** to look at us.’
 [Auxiliary verbs in combination with the main verb]

b. woo/ * us-nee *laash-koo* deekh **baiTh-aa** [Dative direct object]
 3s-nom 3s-erg corpse-dat see sit-pf
 ‘He **inadvertently** looked at the dead body.’
 [‘Vector’ verb in combination with the main verb]

The vector verb is a lexical verb which occurs independently, but in combination it adds some adverbial or pragmatic meaning, and telicity (Hook 1974, Nespital 1997). In (22b) the vector *baiTh* ‘sit’ conveys that the event occurred inadvertently and should have been avoided. If the vector verb is normally an ergative subject verb such as *dee-naa*, it combines with an ergative subject main verb and the subject case is ergative. For some speakers, the ergative subject case is possible only if both V are specified for [Erg], Ergative case may be disallowed without affecting dative direct object case. For some speakers, both verbs in V-V must independently allow [Erg], so that the [Erg] feature is in the intersection of the properties of V-V. For others, the rightmost V must be [Erg]. Heads are final in Hindi/Urdu, so the rightmost verb as head of

the combination projects its features. Otherwise the [Erg] feature of the Y of the main verb or non vector verb is cancelled, without affecting the direct object marking. I will return to this question of the influence of vector verbs in the last section of the paper.

3.3 Summary of lexical variation and functional projections.

To account for the ERG-DAT dependency, I have proposed a basic verbal projection which represents the case features on two functional projections over VP, an X projection which licenses dative direct object case and a Y projection which licenses ERG case. This combination of case-licensing projections accounts for the lexical variation in Hindi/Urdu. Both X and Y are precluded by lexical case on one of the arguments within VP. If no lexical case is present on the VP, then X and Y are projected, with X selected by a categorial feature on Y. Some exceptional verbs may alter the possibilities for ERG on the subject *without* affecting the possibilities for DAT on the direct object--either ERG is absent or Y itself is absent. Y alone may be selected by a small class of intransitive verbs, in the absence of an object.

4. What kind of language similarities and variation are possible?

Many Indic languages have similar case selection properties as Hindi/Urdu. Hindi/Urdu case distributions resemble what is found in Punjabi (Bhatia 1993), which has split ergative case, some lexical exceptions without ergative subjects, verbs with lexical case, and a small number of exceptional intransitive verbs (Appendix). A similar distinction between languages with ERG-DAT combinations versus lexical case is found in Kurmali (Mahto 1989). This language, spoken in Orissa, is an ‘Eastern Hindi’ language with ergative subject marking in all tenses (Appendix).

Additional support for the proposal offered here comes from an Indic language, Kashmiri, which has ergative subjects and dative direct objects, but selected differently from what is possible in Hindi/Urdu. In Hindi/Urdu, a sentence may have *both* an ergative subject and a dative direct object (5), but in Kashmiri, these cases are in complementary distribution. [Wali and Koul 1997, Bhatt 1999]. If the subject is ergative, the direct object may not be dative.

In non-perfective tense/aspect, animate direct objects may be marked DAT, subject to a person hierarchy. Dative is possible if the subject is lower than the direct object in person.

23) [Kashmiri]

a. bi vuch-an su I person subject, III person dir. obj,
 I-nom see-1s-3s he-nom [Nom] [nom]
 ‘I will see him.’ Wali and Koul 1997: 155

b. tsi vuch-a-kh me II person subject, I person direct object
 you-nom see-2s-1s **I-dat** [Nom] [dat]
 ‘You will see me.’ Wali and Koul 1997:156.

clausal projection. The clitic agreement with the X projection feature may freeze movement in some way.

There are some further consequences in Kashmiri, with respect to what kind of lexical variation is possible. First, Kashmiri has no exceptional transitive verbs with optional or absent ergative case but with dative direct objects (K. Wali, p.c.), like *pahcaan-naa* ‘recognize’ in Hindi/Urdu. Second, there are no auxiliaries like HU *sak-naa* ‘be able’ which suppress the ergative on the subject. (O.N. Koul, P. Hook, pc.). In the sentences in (29), Hindi/Urdu is contrasted with Kashmiri, which allows only an ergative subject for an ergative subject verb combined with ‘be able’:

29) a. Hindi/Urdu

woo/*us-nee kaam nahiiN kar sak-aa
3s-nom/3s-erg work not do be.able-pf

‘He could not do the work.’

b. [Kashmiri]

temy (*su) hyec-ni keem ker-yith
he.Erg (he.Nom) could-not work do-CP
‘He could not do the work.’ (P. Hook, p.c.)

Third, while Kashmiri has V-V combinations with vector verbs, it does not allow V-V combinations with different subject case properties. Unlike Hindi/Urdu, there are no compound V-V verbs where what is normally an ergative subject has to be nominative, but the direct object is still dative (O.N. Koul, P. Hook pc)

(30)a. [Hindi] V(+Erg) + Vector Verb (-Erg)

maiN/*maiN-nee [us.ko deekh-tee hii] **pahacaan gayaa**
I-nom I-erg him-dat see-ing Emp recognize go-pf
[ki woo badmaash hai
that he scoundrel is

‘[As soon as I saw him] I could tell he was a scoundrel.’ (Hook and Koul 1991)

b. [Kashmiri] V (+Erg) + Vector Verb (-Erg) is ungrammatical

*[vuch.yith-iy] **goos bi prazineev-yith**
seeing-Emp WENT I-nom recognize-CP
[zyi su chu badmaaS
that he-nom is scoundrel

‘[As soon as I saw him] I recognized [that he was a scoundrel].’ (Ibid)

c. Kashmiri V (+Erg)

[vuchyithiy] **prazinoovu-m** [zyi su chu badmaaS)

seeing-emph recognized-1sErg that he-nom is scoundrel
'[As soon as I saw him] I recognized [that he is was a scoundrel.]' (Ibid)

If a case clash exists in the V-Vector V combination in Kashmiri, the V-V combination cannot be used, and the main verb is used alone. While Hindi/Urdu has a rather large number of verbs which can be used as vector verbs in combination with V (Nespital 1997), the use and number vector verbs is much more restricted in Kashmiri.

Finally, Kashmiri, like Hindi/Urdu and Punjabi, has a small number of irregular intransitive verbs with optional ergative case (Wali and Koul 1997). As in Hindi/Urdu these verbs can be analyzed as lexical exceptions which optional select the Erg/dat feature on the Y projection alone, as no object is involved.

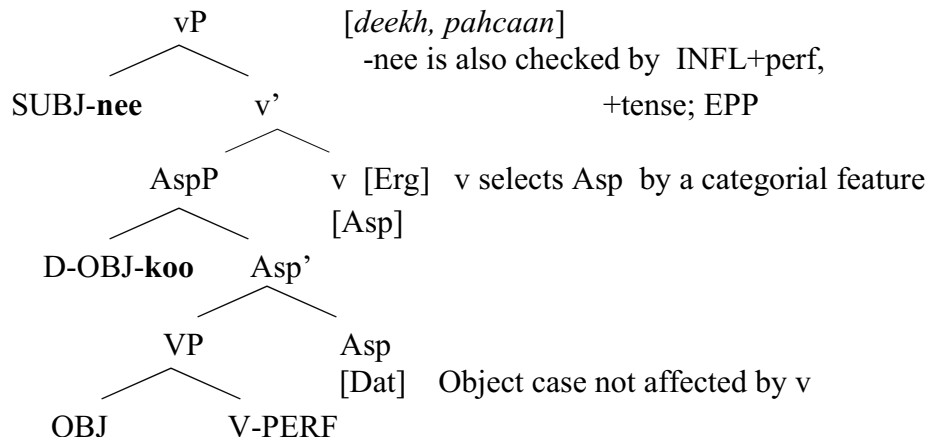
4.4. The analysis I propose entails that the case of the subject and the case of the object are independent in certain ways. Dative object direct marking is possible for transitive verbs regardless of whether their subjects are marked ergative. In part the appearance of ergative marking depends on sentential aspect, in part on the shape of the verbal projection, which I have represented as VP with two possible functional projections, X and Y, over VP.

Sinhala (Gair 1998) is quite different in case marking, in that it lacks ergative case on transitive verbs, and allows accusative subjects of intransitive verbs. The role of sentence inflection is to externalize an argument as subject, which may have default nominative case, dative, instrumental or accusative case (Gair 1999, 65-75, passim.). Nevertheless, the case system of Sinhala also shows that the marking of internal objects is independent of subject marking, and that subject marking is dependent on the lexical properties of verbs (transitivity, theta roles) and affixes on the verb, such as the 'P' affix which adds involuntary meaning, and various forms of the optative. Case is determined by the structure of the verbal projection, not solely by theta role, as non-volitional experiencer subjects may be either nominative or dative (Gair 1999: 77. Though the case systems of Hindi/Urdu and Sinhala are very different, they share the broad property that case is determined by the verbal projection (see Gair 1998: 75) and subject may vary independently of object case.

5. In this last section, I offer some speculations about the categorial identity of the X and Y heads. I propose that these functional projections also specify verbal aspect, following Travis 1997, Travis 2004, Kempchinsky 2003, among others. The aspectual and case feature content of the projections are summarized in (31), and integrated into the transitive verbal projection in (32):

- 31) a. X = Verbal aspect
 Bears semantic features specifying events +/- Dynamic [Smith 1997]
 Object case feature -dependent structural dative
 b. Y = v 'light' verb
 Bears semantic features specifying events +/- Durative
 Licenses Erg case (in conjunction with finite perfective inflection)

32)



If the Asp and light v heads contribute aspectual features, then they have a motivation beyond mere case licensing. In this function, they differ from the AGR projections which licensed subject and object case in earlier versions of the Minimalist Program. Here I offer some independent justification for these aspectual features, even though the full array of information about the aspectual content of verbs in Hindi/Urdu is not available at present.

5.1 Specification of verbal aspect.

The X Asp and Y Durative projections contribute to the aspectual class of V, independently of sentence aspect. Smith offers a classification of verbal aspect in terms of features. Here I use these features as properties of functional projections above VP. This specification for Hindi/Urdu does not fully determine aspectual class or Aktionsart. There is some evidence that lexical verbs in Hindi/Urdu are underspecified for verbal aspect, compared with their translation equivalents in English. I'll propose that the functional heads within the verbal projection contribute the following features (based in part on Smith 1997):

33)

Features	States	Activities	Achievements	Accomplishments	
Dynamic	-	+	+	+	=ASP
Durative	+	+	-	+	=v

I use Dynamic where Smith uses Static: the +Dyn value refers to the unfolding sequence of events including causal initiation, -Dyn value refers to a uniform unchanging state.

5.2 Aspectual underspecification.

One point established by Singh 1999 is that verbs with ergative subjects are not lexically specified for +/- telic, even when perfective aspect add an endpoint. While the default interpretation of a perfective accomplishment verb is that the natural endpoint is reached, there is also an interpretation of simple termination, possibly before the natural end point is reached. In addition, there are verbs in Hindi/Urdu which have two interpretations (each corresponding to an aspectually distinct lexical verb in English):

34) Lexical verbs with ergative subjects, underspecified aspectually

- a. *khooj -naa* ‘search, investigate’ +Durative ‘find’ -Durative
- b. *pahcaan-naa* ‘identify’ +Durative ‘recognize’ -Durative
- c. *pahan-naa* ‘wear’ -Dyn ‘put on’ +Dyn
- c. *kar-naa* ‘do’ -telic ‘make’ +telic
- d. *samajh-naa* ‘understand’ -Dynamic, +Durative ‘come to understand’
+Dynamic, -Durative
- e. *bhuul-naa* ‘make a mistake’ +Durative ‘forget’ -Dynamic

The sentences in 35) show the range of meanings of *khooj-naa* ‘search, find’ in non-perfective contexts:

- 35) a. *din bhar [e khooj-nee] -par bhii kooii kaam nahiiN mil-aa thaa*
day whole search-inf on even some work not get-pf was

‘Even though he *searched* all day, he did not find any work.’ (Nespital 1997: 325)

- b. *[shahar-meeN eek acchaa-saa makaan khooj-nee] kee baad ravi gaaNw-see*
city-in one good-like house search-inf-gen after Ravi village-from

apnee parivaar lee aa-yaa
self’s family take come-pf

‘After finding a pretty good house in the city, Ravi brought his family from the village.’
(Nespital 1997: 325)

I conclude that verbs in Hindi/Urdu are not directly specified as +/- telic. Telicity is guaranteed by two syntactic factors. One is the presence of a vector verb linked with the main verb, discussed in Hook 1974, Butt and Ramchand 2003, papers in Verma 1993, and the preface to Nespital 1997, whose lexicon of verbs consists of sentences examples illustrating the interpretation of verbs with and without vector verbs. The verb *khooj-naa* means both to ‘look for’ (-telic) and ‘find, discover’ (+telic). It has a +telic interpretation in (35a), but it is -telic in (35b).

- 35) a. *us-nee aNdheeree-meeN bhii TaTool-kar apni cappel khooj lii*
3s-erg darkness-in even grope-prt self’s sandal search take-pf

aur usee pahan-kar aa ga-yaa
and 3s-dat wear-pf come go-pf

‘He groped in the darkness and found his sandal, and putting it on, he came out.’
Nespital 1997:325.

- b. *unhooN-nee doo ghaNTee baccee-koo khooj-aa, leekin un-koo nahiiN mil-aa*

3pl-erg two hours child-dat search-pf but 3pl-dat not get-pf
'They searched for the child for two hours, but didn't find him.'

The other specification of telicity is the use of a N + V complex predicate [Hook 1974, Verma 1993]. The N counts as a direct object of V, originating in VP like other thematic objects.

36) kalambus-nee amrikaa-kii khooj kii /kar lii
 Columbus-erg America-gen search do-pf /do take-pf
'Columbus discovered America.' (Hook 1974)

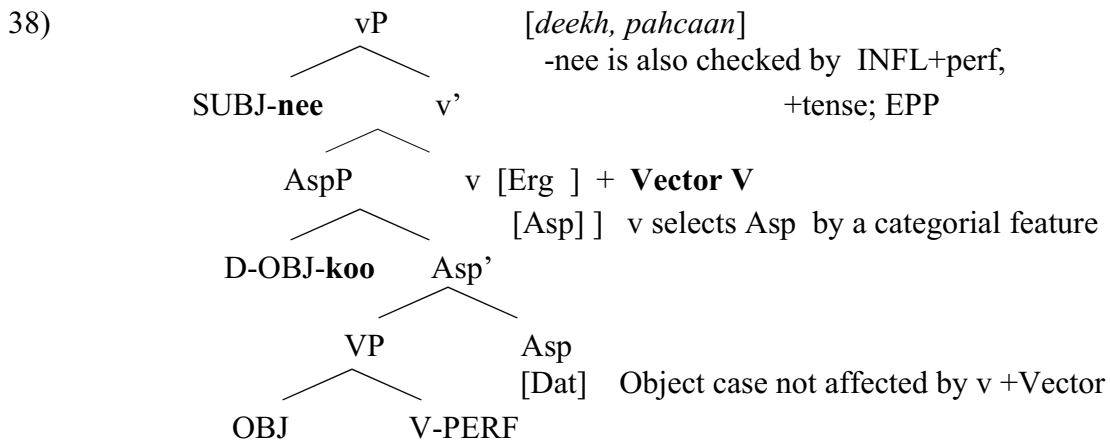
Semantic factors also contribute to telicity, as in other languages. A measuring-out direct object or individual referred to by name must be able to express a quantized or individuated object. What is significant about the role of syntactic factors like vector verbs and complex predicates is that they may specify telicity even if the direct object is not quantized or marked as specific by *-koo*. An example is the bare NP *khiir* 'rice pudding' in (37):

37) siidhee-siidhee caawal-kii khiir banaa Daal-tii huuN
 straight-straight rice-gen khir prepare. put-down-impf am
'Right away (without second thoughts) I impulsively make (the) rice khir (pudding).'' Nespital 1997:896

The vector verb *Daal-naa* 'put down, throw down' contributes the meaning of 'quickly' and also the telic reading for *banaa-naa* 'prepare, make'.

5.3 Structural specification of telicity.

I will assume that vector verbs are attached at v, as in (38)



In this position, the vector verb is able to affect the subject case feature, as we saw above in (22b), erasing the [Erg] feature which the main verb allows, in the two possible ways noted in section 3.2 above. It also contributes to telicity, independently of the properties of the direct object NP. Hindi/Urdu is therefore similar to Bulgarian; Slabakova 2001 shows that Bulgarian

preverbs contribute a definite or quantized reading for bare NP objects. She attaches the preverbs to the light v projection, and example of ‘high’ specification of telicity, in contrast to languages like English, in which the properties of the object DP lower down in the verbal projection determine a telic interpretation (Travis 2004).

Specification of telicity by the attachment of a vector verb has no effect on object case. This fact makes sense if as Aissen 2003 proposes, the dative *-koo* marker in Hindi/Urdu is primarily a marker of animacy, not specificity, though it is also felicitous with specific reference. It is possible though not required to mark the direct object as specific or quantized to get a telic reading. Persian seems to be in strong contrast to Hindi/Urdu, as the marker *-ra* is required to mark definiteness or specificity.

In addition to the telicity added V-V and N-V combinations, the use of perfective sentence aspect adds a final boundary to the event. Accomplishment and achievement telic readings are the default interpretation for verbs specified as +Dynamic in the schema in (33), which does not otherwise distinguish activities from telic events. Singh (1999) notes that telicity is defeasible if indicated only by perfective sentence aspect.

5.4. Case and aspectual variation in the lexicon.

Ideally, there should be a clear relationship between case and verb meaning, including aspectual properties. This relationship must be based on the kind of exhaustive study of verbs in Hindi/Urdu which has not yet been done. Nevertheless there are some hints of this relationship. The bivalent verbs I have represented as simple VP projections, with lexical case on the subject or object (8)-(9) are activities or states; perfective aspect adds termination or change of state. The ergative subject verbs with dative objects are accomplishments as well as activity or state verbs, while the optionally ergative verb are achievements, that is dynamic but not durative. They have functional projections above VP adding aspectual features. I have discussed some aspectually underspecified verbs in (34), which offer some evidence for what is and what is not specified by these functional projections.

Some additional evidence comes from verbs which belong to two different case classes, but have the same verbal stem. This evidence is fragmentary and inconclusive, as not many such verbs have been identified. Here I will mention two.

The verb *taak-naa* has two uses, one intransitive and one transitive.

- 39) a. *taak-naa* (intransitive) ‘stare’; no V-V combination (Nespital 1997: 665)
b. *taak-naa* (transitive, ergative subject) ‘look at, watch, watch out for’, V-V combinations are possible (Nespital 1998: 666).

The first verb is a pure activity, with no internal argument to measure out the event, and no inherent limit. So it cannot be combined with a vector verb which would make it telic. The second has an internal event, with an activity interpretation which can be made telic, or an

accomplishment, with a vector verb. In my terms, (39)a projects a simple VP, while (39)b projects both VP and the Asp and v functional projections. The meaning of the second verb is +dynamic, +durative.

The verb *raT-naa* also has two uses, with different case requirements.

40) a. *raT-naa* (dative subject, nominative object) ‘learn by heart in a short time, without effort’

b. *raT-naa* (ergative subject, dative object) ‘learn by heart over a period of time, with application’ (Nespital 1997).

The first use (40)a, with a lexical dative subject, expresses an achievement which takes place in a short period of time, without stages and duration, or the external causation necessary to create a durative event. The second use (40)b has stages and duration, and does require external causation. It is interesting that ergative case is associated with (39)b and (40)b, which have similar aspectual properties, while non-ergative case is associated with a pure atelic activity (39)a, or a non-durative achievement (40a), very much like the verb in (19)a.

6. Summary and conclusions.

In this paper, I have divided bivalent verbs in Hindi/Urdu into four classes, categorized by the requirements for case on the subject and direct object. I discuss the proposal in Marantz 1991 for distinguishing dependent structural case, accusative and ergative, from lexical case and default structural case. Marantz imposes a logical ordering on the checking of each category of case, which corresponds to the syntactic projection of VP, where lexical case is assigned, vP, where dependent structural case is assigned, and default case checked by INFL. This proposal is meant to exclude both accusative and ergative case in the same clause, but this combination is possible in Hindi/Urdu. On the basis of case combinations, exceptions and optional choices in Hindi/Urdu, I propose that clauses with one or both dependent structural cases have functional projections above VP, while verbs with a lexical case on the subject or object are projected in simple VPs. There are two functional projections, one which license dative direct objects, the other which licenses ergative subjects, in conjunction with perfective sentence aspect. The selectional relation between these functional projections says that ergative case on the subject is possible only if dative case is possible on the direct object.

In the second part of the paper, I offer arguments for the two functional projections above VP, based on the exceptions, optionalities and combinations with auxiliary verbs in Hindi/Urdu. The higher functional projection affecting ergative case is the locus of variations, while the object-case licenser remains unaffected. I contrast the possibilities in Hindi/Urdu with the restrictions on Kashmiri, which is otherwise very similar in case uses to Hindi/Urdu. Dative objects are not possible in sentences with ergative subjects, and there are much tighter restrictions on exceptions, options and auxiliary verbs. These restrictions can be explained if the two functional projections are not separate and independent, as in Hindi/Urdu, but rather are fused with the features to license only a single dependent structural case. Sinhala also provides evidence for the independence of subject case from object case; Sinhala has variation in subject

case determined by the lexical properties of the verb (valence, theta roles) and verbal affixation.

In the final part of the paper, I offer some reasoned speculation about the semantic content of the two functional projections I have proposed. The head which licenses the dative object case is responsible for durative aspectual specification, while the feature of dynamic/stative events is expressed by the projection licensing ergative subjects. Ergative subject verbs tend to be dynamic and durative, those which have optional nominative case are either durative (accomplishments) or instantaneous (achievements). These features leave verbs underspecified for telicity, which is supplied by V-V vector verb combinations and N-V complex predicates, as well as the default interpretation of perfective aspect. Some verbs have two aspectual meanings, depending on these factors. There is a small number of verb stems having two case possibilities, with differences of meaning and verbal aspect corresponding to the case differences.

My goal in this paper has been to move on from the older dichotomy of lexical and structural cases associated in a mechanical way with argument structures and theta roles. This earlier view did not capture the case marking classes of Hindi/Urdu except by stipulation, especially with respect to ergative case. Marantz' tripartite classification of cases comes closer to capturing the case patterns of the lexical classes of verbs in Hindi/Urdu, but it must be extended with an additional functional projection to get right the dependency between ergative and dative dependent structural case in Hindi/Urdu. The proposal is taken somewhat further towards the goal of relating formal verbal properties to meaning and Aktionsart by giving semantic content to the functional heads. They license case and partially specify verbal aspect; further specifications come from vector verbs and sentence aspect. These proposals are speculation based on what is known at present about verbs in Hindi/Urdu.

APPENDIX

Kurmali -- Ergative case (all tenses) - dative direct object:

- 1) *to-kee^j nijek^j beTāā-yⁱ maar -t -oⁱ -u^j*
you-dat self's son-erg beat fut 3s 2s
2s 3s

'*Self's/your son will beat you*'. Mahto 1989:76

2) past progressive [progressive aspect = -e + lagaal]

- sitāā-yⁱ kitaab-taa-0 paDh -e laagal ra-h- -iiⁱ*
Sita-Erg book-Def read-Prt prog Past-be-3sf

'*Sita was reading a book.*' (Mahto 1989:50)

Dative subject, only nominative object

- 3) *to - ke^j okher betaa-taaⁱ pasand aa - h- oⁱ - u^j*
you-dat their son-def-nom liking pres-be-3s-2s

'*You like their son.*' (Mahto 1989:76)

Punjabi (Bhatia 1993) - Split ergative language like Hindi/Urdu

4) Ergative subject, dative direct object

hakiim-ne mariiz-nuuN vekhiaa
doctor-erg patient-dat see-pf
'The doctor examined the patient.' Bhatia 1993: 173

7) Ergative subject, nominative direct object

ó -ne xat likhiaa
3s -erg letter write-pf
'He wrote a letter.' Bhatia 1993: 170

8) V+Erg V-Erg

ó *-ne xat likh báíThiaa
3s -erg letter write sit-pf
'He wrote a letter (inadvertently).' Bhatia 1993: 170

9) Dative subject, nominative direct object

maiN-nuuN apNii kataab pasand aaii
I- dat self's book choice come-pf
'I like my book.' Bhatia 1993: 172

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2. For the purposes of this paper, I am using the term *nominative* descriptively for unmarked case involving the direct rather than the oblique form of the nominal elements. Nominative constituents may trigger agreement either as subject or objects (or N in a complex –V predicate) depending on other cases present in the clause. I will be primarily concerned here with the morphological cases and their licensing.

3. The following is not an exhaustive list; individual speakers may have a subset of these verbs as nominative subject verbs:

- (i) a) pahcaan-naa ‘recognize’
- b) bhuul-naa ‘forget’
- c) haar-naa ‘lose (match/war)’
- d) jiit-naa ‘win’
- e) samajh-naa ‘understand, realize’
- f) bhaaNp-naa ‘intuit, figure out’
- g) taaR-naa ‘see through, understand, make out’ (Nespital 1997: 666)

4. These verbs may be simplex or made up of N + V:

(i) V, V+N verbs

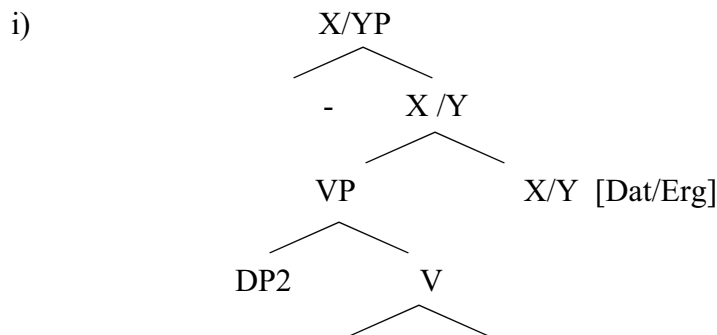
- a) dikhaaii dee-naa ‘see, glimpse’
- b) sunaaii dee-naa ‘hear’
- c) dikh-naa ‘be visible to’
- d) bhaa-naa ‘like, suit’
- e) mil-naa ‘get, obtain’
- f) suujh-naa ‘come to mind’

(ii) V+N, N gets case

- a) -see uub hoo-naa ‘be bored with’
- b) -par pachtaavaa hoo-naa ‘regret’
- c) -see ciRh hoo-naa ‘feel aversion to’
- d) -see khiijh hoo-naa ‘be annoyed at’
- e) -see Dar hoo-naa ‘fear’

5. Butt 1995 reports some volitionality contrasts when ergative or nominative subjects are possible.

6. Another possibility is given in (i)



DP1 V
D-Obj

In this structure, both X and Y are present, but as a composite projection (cf. Haider 1988) The case features [Dat/Erg] are fused as one feature which licenses one case feature, either DAT or ERG. DP1 may raise to Spec X/Y, checking DAT. or DP2 may raise to this position, checking Erg, which then must raise to INFL to be ‘ratified’ by perfective aspect. There are some technical problems about distinguishing subjects and objects so that the right case is checked, but since both subject and object originate in the same minimal projection VP, the DPs are equidistant from the Spec X/YP position.