

THE STATUS OF CASE

1. INTRODUCTION

The study of case¹ has been an integral part of the study of clausal structure for centuries. In the ancient Greek tradition, for example, the actants of a clause were defined primarily in terms of semantic case notions like accusative 'accused/affected', dative 'giving', or vocative 'called/named'. In the Pāṇinian tradition (ca. 6th century BCE), the relationship between the arguments of a clause and their case realization was mediated via a level of semantic roles such as actor and undergoer. While the ancient notions have remained with us as part of the modern view of syntax, languages also came to be classified according to the kind of subject vs. object marking they displayed. In particular, a distinction is drawn between ergative and accusative types of languages.² This distinction goes back to Fillmore (1968) and has been taken up in various forms in the literature (see Manning 1996 for an overview). Most of the discussions surrounding the proposed distinction assume an opposition between ergative-absolutive and nominative-accusative types of clauses. This is illustrated in Table 1.

Table 1. Clause Types

Clause Type	Language Type	
	Ergative	Accusative
Transitive	Erg-Abs	Nom-Acc
Intransitive	Abs	Nom

¹ We would like to thank the audience of the Utrecht Workshop on Case, the Graduiertenkollegskolloquium in Stuttgart, and the members of the seminar on Case (Konstanz, Fall of 1998), where parts of this paper were presented. We are grateful to Alice Davison and several anonymous reviewers who commented on earlier versions of the paper. We would also like to thank Ashwini Deo and Helen de Hoop for interesting comments and discussion. Miriam Butt's contribution to this paper was made possible by financial support from the DFG (the German Science Foundation) via the SFB 471 at the University of Konstanz.

² Due to typological work undertaken as part of colonial exploration in the 19th century (e.g., Ray and Haddon 1893), it was recognized that a number of languages used a separate case for the marking of "agentive nominatives". Well known examples included Greenlandic and Basque (e.g., Pott 1873). Due to a series of misunderstandings, this agentive nominative eventually came to be known as the "ergative" (cf. Manaster Ramer 1994).

Thus, languages are classified by the case pattern exhibited by transitive and intransitive clauses, whereby the deeper distinction between ergative and accusative languages is taken to manifest itself in the grouping of the grammatical relations. In ergative languages, objects and intransitive subjects group together in terms of case marking; in accusative languages, subjects of intransitives and transitives are treated alike and are differentiated from objects in terms of case marking.

Within this typology, Urdu/Hindi³ has been situated as a morphologically split-ergative language in which the ergative marker is sensitive to perfect morphology (e.g., Anderson 1977, Mahajan 1990, Dixon 1994). This typological classification requires the ergative to alternate with an unmarked case (nominative/absolutive) on subjects of transitive sentences. This alternation is found in Urdu/Hindi, and so the entailment is confirmed. Another entailment is that the ergative not appear on intransitive subjects. However, this is not supported by the facts of the language, as Urdu/Hindi intransitives also show an ergative/nominative alternation on subjects (section 2.1).

The classification in Table 1 represents an oversimplification of case patterns as no other case marking alternations are assumed to exist.⁴ Even if they are assumed to exist, they generally are not taken to be of typological relevance in characterizing the clause structure of a language. In this paper, we argue that case alternations involving datives, accusatives, and instrumentals must also be taken into account for an insightful understanding of the role of case in the clause structure of Urdu/Hindi.

With respect to case alternations on objects, the literature to date has produced several well known examples. These include the alternation of overtly marked accusative objects in Turkish with unmarked (nominative) objects, which correlates with specific vs. non-specific interpretations (Enç 1991), the distribution of the Finnish partitive (de Hoop 1992, Vainikka 1993, Kiparsky 1998, 2001), which is associated with (non)telicity and (un)boundedness, and the alternation between Scottish Gaelic genitive and unmarked objects (Ramchand 1997), which correlates with aspectual affect-edness. None of these languages are ergative (or split-ergative); so it would seem at first that these case alternations are not relevant for the present discussion. However, an alternation similar to the nominative-accusative split in Turkish is found in Urdu/Hindi (e.g., Allen 1951, McGregor 1972:

³ The South Asian languages Urdu and Hindi are closely related. Both are among the official languages of India and are spoken primarily in the north of India. Urdu is the national language of Pakistan. The data presented in this paper are drawn primarily from the dialect of Urdu spoken in Lahore, Pakistan.

⁴ For a more complete typology of case patterns see Plank (1995). However, even this more complete typology does not do justice to the case alternations found in Urdu/Hindi as discussed in this paper.

49–50, Butt 1993, Masica 1991, Mohanan 1994, Singh 1994), and the accusative case involves a notion of affectedness (Saksena 1982, Butt 1998).

Similarly, although it is well known that South Asian languages allow non-nominative subjects besides the ergative (e.g., Verma and K.P. Mohanan 1990, Mohanan 1994), we are not aware of any ergativity discussion which integrates the fact that split-ergative languages such as Urdu may also show patterns such as instrumental-unmarked, dative-unmarked, dative-accusative, as well as the canonical ergative-unmarked (where the unmarked option has been called "absolutive" or "nominative"; see section 2.2). Consider the minimal pair in (1), found in some dialects of Urdu/Hindi, in which an ergative subject alternates with a dative one. This alternation is restricted to infinitive plus 'be' contexts, and the sentences only differ with respect to the case marker.

- (1) a. nadya=ne zu ja-na hE
 Nadya.F.Sg=Erg zoo.M.Sg.Obl go-Inf.M.Sg be.Pres.3.Sg
 'Nadya wants to go to the zoo.'
 b. nadya=ko zu ja-na hE
 Nadya.F.Sg=Dat zoo.M.Sg.Obl go-Inf.M.Sg be.Pres.3.Sg
 'Nadya has to go to the zoo.'

In addition, as mentioned above, the object case may alternate in accordance with specific vs. non-specific interpretations, as in (2), giving rise to ergative-unmarked and ergative-accusative patterns not predicted by the view in Table 1.

- (2) a. nadya=ne jiraf dek^h-na
 Nadya.F.Sg=Erg giraffe.M.Sg.Nom see-Inf.M.Sg
 hε
 be.Pres.3.Sg
 'Nadya wants to see a giraffelgiraffes.'
 b. nadya=ne jiraf=ko dek^h-na
 Nadya.F.Sg=Erg giraffe.M.Sg=Acc see-Inf.M.Sg
 hε
 be.Pres.3.Sg
 'Nadya wants to see the giraffe.'

This variety of patterns in case marking, combined with the correlation between case morphology and semantic effects, renders the generally accepted ergative vs. accusative language division as too simplistic. It also poses a challenge for Case Theory, in which the occurrence of case has

generally been understood in the (by now classic) division between structural and inherent Case (Chomsky 1981). Under this view, structural Case identifies the core grammatical relations subject and object configurationally and interacts with agreement, while inherent case takes care of all other types of (morphological) case markings, both regular (such as the dative on indirect objects or the ergative on subjects) and irregular or quirky case marking.

With respect to Urdu/Hindi, this division cannot be upheld in a strict form, as Mahajan's (1989, 1990) treatment of the interaction between word order, agreement, and case marking in Hindi shows. His analysis includes the idea that a given NP (e.g., an ergative NP) can be both structurally and inherently case marked: structurally because the NP has to be identified as a given grammatical relation (e.g., subject for ergative NPs) and undergo the appropriate movements; inherently because the overt case marking (e.g., ergative) is assumed to come from a stipulation in the verb's lexical entry.

In addition, a semantically meaningful use of case as in (2) contrasts sharply with truly idiosyncratic or quirky case over which no coherent semantic or syntactic generalizations can be formulated. In particular, a recognition within formal semantics of the fact (often noted in descriptive and typological studies, see Wierzbicka 1981 for an overview) that a difference in overt case marking affects the compositional semantics of a clause (de Hoop 1992, Krifka 1992, Verkuyl 1993, Ramchand 1997) questions the notion that inherent (morphological) case is a semantically uninteresting (uninterpretable), lexically stipulated requirement on overt form (cf. Chomsky 1995).

Woolford's (1997) four-way case system for Nez Perce addresses some of these problems. She posits crosslinguistic availability of the patterns ergative-nominative, ergative-dative, and ergative-objective. She furthermore associates ergative, dative, and accusative with agents, goals/experiencers, and themes, respectively, thus acknowledging that case may be semantically sensitive.

The view articulated in this paper is close to Woolford's. However, she employs the standard distinction between structural and lexical/inherent Case which assumes that structural Case is checked by either functional or lexical heads, while lexical Case is stipulated in the verbal entries. We instead propose a three-way distinction between structural, semantic, and quirky case. This three-way distinction arises out of the Urdu/Hindi case system as a whole, using Lexical-Functional Grammar (LFG) as a grammatical theory which does not force a (phrase structural) predisposition towards the treatment of case marking.

As Urdu/Hindi is a language with very flexible word order, we differ from Woolford (1997) in that we have no notion of phrase structural Case in which case markers are checked by lexical or functional positions. Rather, following LFG's linking theory, we capture the notion of structural Case

via a theory of linking which relates thematic roles to grammatical relations. We also differ with respect to the notion of lexical case; we differentiate the case markers over which one can state regular semantic generalizations (semantic case) from those whose appearance is truly idiosyncratic (though there is usually a historical explanation).

The paper is organized as follows. Section 2 contains an overview of the current usage of case in Urdu/Hindi. Section 3 provides some information as to the diachronic picture. Sections 4 and 5 present our approach to case and discuss the synchronic status of the case markers as clitics. Finally, section 6 presents detailed analyses of case marking alternations on subjects and focuses on the alternation between ergative and dative subjects in the infinitive constructions presented in (1). The conclusions we draw are summarized in section 7.

2. THE URDU/HINDI CASE SYSTEM

In this section, we show that Urdu/Hindi exhibits a structural system of grammatical functions which is overlaid with the use of semantic morphological case. That is, core grammatical relations can be marked with a number of different case alternations which have an effect on the semantic interpretation of the clause. This position is not new: statements to the effect that Hindi should be analyzed as a fundamentally "accusative" system can be found in Kachru (1987), Dixon (1994: 175), Mohanan (1994), and Manning (1996). The connection of case marking to semantics also appears repeatedly in the papers cited.

The basic Urdu/Hindi case markers are given in Table 2.

Table 2. The Case Markers

Critic	Case	Gram.	Func. Morph. Effect
Ø	nominative	subj/obj	none
ne	ergative	subj	oblique marking on NP
ko	accusative	obj	oblique marking on NP
	dative	subj/ind. obj	oblique marking on NP
se	instrumental	subj/obl/adjunct	oblique marking on NP
k-	genitive	subj (infinitives) specifier	agrees with head noun agrees with head noun
mě/par/tak/Ø	locative	obl/adjunct	oblique marking on NP

There are seven cases which are morphologically realized by seven markers: the nominative is indicated by the lack of a case marker, while the accusative and dative share the marker ko. The locative employs one of three markers

or a null marker depending on the meaning.⁵ The instrumental *se* spans a range of functions, some of which are discussed in section 2.5. **The only case marker that inflects is the genitive (section 2.6): this is because it arose out of an inflecting participial construction.** All of the case markers mark the core grammatical functions subject, object, or indirect object (Mohanan 1994: 64–66). Each case marker appears in a variety of constructions.

2.1. *Ergative*

In the early days of generative syntax, the occurrence of ergative case was often dealt with by recourse to more familiar structures or concepts. One strategy was to view an ergative construction as a type of passive. However, this analysis was found to be wanting as the syntax of ergative languages became better understood. Another strategy is to view the appearance of ergative case as an instance of "quirky" or "lexical" case. In this scenario, individual verbs or verb forms lexically stipulate the appearance of the ergative case. However, this approach is not optimal because the ergative has a more systematic distribution than would be expected from lexical stipulation.

Bittner and Hale (1996) analyze the Hindi ergative as a marked Structural Case assigned by I^0 . While this is an improvement over viewing the ergative as quirky case, they do not take into account semantic factors which interact with the structural nature of the ergative. Bittner and Hale account for ergative subjects of intransitives by analyzing unergative intransitives as underlyingly transitive (cf. Hale and Keyser 1993). However, it remains a mystery why the ergative is obligatory with overtly transitive perfect clauses, but is optional with perfect unergative intransitives.⁶ For example, as shown in (3), the ergative alternates with the nominative on some intransitive verbs (e.g., Kachru 1978) where it is correlated with an expression of volitionality (Butt and King 1991, Tuite, Agha and Graczyk 1985, Mohanan 1994, Davison 1999).

- (3) a. ram k^hās-a
 Ram.M.Sg.Nom cough-Perf.M.Sg
 'Ram coughed.' (Tuite, Agha and Graczyk 1985: 264)

⁵ We do not include a discussion of the locative: for its synchronic uses see Mohanan (1994); for its origin see Kellogg (1893: 132–133) and Beames (1872: 292–296). In terms of morphology, the oblique marking appears on singular nouns ending in -a (-e) and on all plural nouns (Glassman 1976, Masica 1991: 240). See section 3.1. and 4 for more discussion.

⁶ This also applies to Bobaljik (1993).

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- b. ram=ne kʰāas-a
Ram.M.Sg=Erg cough-Perf.M.Sg
'Ram coughed (purposefully).'
(Tuite, Agha and Graczyk 1985: 264)

Urdu/Hindi ergative case has resisted syntactic analysis for several reasons. One is that the full range of data with regard to the scope and distribution of ergative marking in Urdu/Hindi is often not taken into account, e.g., the ergative-dative subject alternation in (1). Another reason is that the restrictive view of case in terms of ergative vs. accusative systems leads the researcher to ignore ergative-accusative case patterns like the ones in (2). Woolford (1997: 221), for example, points out that Bok-Bennema's (1991) general approach to ergativity does not allow for an ergative-accusative pattern. The Urdu/Hindi ergative is sensitive to both syntactic and semantic factors. The mixed nature of the Urdu/Hindi ergative is acknowledged by researchers who work primarily on Hindi. As already discussed, Mahajan (1990), for example, proposes that argument noun phrases in Hindi may have both structural and inherent Case. Structural Case is assigned in Spec A GRIP, or in the complement to v position. The inherent Case of an argument is specified in the lexical entry of a particular verb form. The overt case morphology is treated as an instance of inherent Case. Inherent Case marked noun phrases may also be assigned structural Case if they are in the appropriate position. This dual system of Case assignment applies to direct objects marked with ko and ergative subjects because these nouns function as direct arguments which are overtly marked with case clitics. A short-coming of Mahajan's analysis is that the ability to assign Structural Case is linked to the particular verb form. Psych-predicates (dative subjects) and verbs with perfect morphology are taken to lack the ability to assign Structural Case, which is why the object moves to a functional agreement position, leaving the subject inside the VP and vulnerable to the assignment of Inherent Case. Furthermore, because Mahajan (1990) formulates a purely structural approach to ergativity, he cannot account for the ergative-nominative and ergative-dative case alternations.

Davison (1999) provides the most complete account of the pattern of Hindi ergative marking to date. Her research is based on a careful survey of case marking across several verb classes. She treats the ergative as a structural Case which interacts with the specifications of the lexical entry of the verb and proposes licensing conditions which take finiteness and lexical and aspectual specifications into account. Davison's proposal is close to the one presented here: information coming from the verbs' lexical entries

⁷ This has the effect that the noun phrases which only have structural Case are exactly the nominative arguments, whereby nominative in Urdu is phonologically null (Table 2).

interacts with information provided by the ergative. However, under her account, the semantic factors involved in case-alternations are associated with the lexical entry of a verb. We instead believe that while some inherent case marking information must be relegated to the lexicon, a more general story can be told with respect to the case alternations observed in Urdu/Hindi

De Hoop (1999) sketches an account of case marking which relies on the semantic notions of weak and strong Case presented in previous work (de Hoop 1992). If developed in more detail, her account should be compatible with ours and supplement our approach with more detailed semantic machinery. Such sophisticated semantic machinery is needed to account for the distribution of the ergative in Urdu. As shown in (1) and repeated here, the ergative can appear in nonfinite constructions in Lahori (and Delhi) dialects of Urdu/Hindi (Butt and King 1991, Bashir 1999). In particular, the ergative alternates with the dative on subjects in this construction to provide different modalities: if the dative is used, the subject generally *must* perform the action; if the ergative is used, the subject is interpreted as *wanting* to perform the action.

- (4) a. nadya=ne zu ja-na hε
 Nadya.F.Sg=Erg zoo.M.Sg.Obl go-Inf.M.Sg be.Pres.3.Sg
 'Nadya wants to go to the zoo.'
- b. nadya=ko zu ja-na hε
 Nadya.F.Sg=Dat zoo.M.Sg.Obl go-Inf.M.Sg be.Pres.3.Sg
 'Nadya has to go to the zoo.'

Butt and King (1991) and Mohanan (1994) therefore argue that the ergative is associated with volitionality or the feature [+conscious choice]. Bashir (1999), based on an examination of current usage of the ergative in modern day Urdu TV dramas, concludes that the picture is not so simple. She observes the pattern in Table 3 and proposes an explanation in terms of markedness.

Table 3. The Ergative and Semantic Entailments

Tense/Aspect	Valency	Ergative	Semantic-Entailment
a. Finite, Perfect	Intransitive Unergative	No	No entailment
		Yes	[+conscious choice]
c. Finite, Perfect	Transitive	No	[-conscious choice]
		Yes	No entailment
e. Infinitive	Any	No	[-source specified]
		Yes	[+source specified]

When the ergative is marked, as in Table 3b, it denotes conscious choice. When it is structurally required, as in Table 3d, it carries no entailments. With respect to the infinitive construction, Bashir speculates that the ergative may be encroaching on the domain of the dative. In this construction, the ergative is marked and entails a subject who has control over the action. The dative, however, is unmarked and may be regarded as the Elsewhere Case: the subject may or may not have control over the action, the precise interpretation depends on the context.

We incorporate these results into our analysis in section 6 by assuming a disjunctive entry for the ergative. When the ergative is structurally required (transitive verbs in the perfect), no extra semantic information is contributed to the clause. When the ergative is not structurally required, it contributes the information that the action is within the internal control of the subject.

2.2. *Nominative*

The nominative is phonologically null and in some discussions is referred to as an absolutive. However, as seen in section 2.1, the ergative does not conform to the standard ergative-absolutive pattern. Furthermore, the distribution of unmarked NPs exceeds that of the pattern associated with absolutives. While nominatives do appear as objects of transitives and subjects of intransitives, as is the case for absolutives, they also alternate with the accusative *ko* on objects, as in (5). The alternation is governed by animacy and specificity effects similar to those found in Turkish (Enç 1991). Absolutives are not typically involved with specificity effects.

- (5) a. nadya=ne *garı* *cal-a-yi* *he*
 Nadya.F.Sg=Erg car.F.Sg.Nom drive-Perf.F.Sg be.Pres.3.Sg
 'Nadya has driven a car.'
 b. nadya=ne *garı=ko* *cal-a-ya* *he*
 Nadya.F.Sg=Erg car.F.Sg=Acc drive-Perf.M.Sg be.Pres.3.Sg
 'Nadya has driven the car.'

Furthermore, as was seen in (3), nominatives alternate with ergatives with intransitive unergative verbs. This is again not a property associated with absolutives. Finally, a clause may contain more than one unmarked argument, as in (6). This is not a property typically associated with either absolutives or nominatives.

- (6) *nadya* *garı* *cal-a-ti* *he*
 Nadya.F.Sg.Nom car.F.Sg.Nom drive-Impf.F.Sg be.Pres.3.Sg
 'Nadya drives a car.'

These uses of the unmarked case in Urdu/Hindi provide further evidence

that a different view of the interaction between case and clausal structure is needed.

The agreement pattern in Urdu/Hindi is sensitive to case marking and grammatical functions: the verb only agrees with subject or object nominatives. If the subject is nominative, the verb agrees with it ((6)). If the subject is non-nominative and the object is nominative, then the verb agrees with the object ((5a)). If both the subject and the object are non-nominative, then the verb shows "default" masculine singular agreement ((5b)). As such, agreement does not uniquely identify a grammatical function in Urdu/Hindi (i.a., Mahajan (1989, 1990, 1991), Davison (1988, 1991a, 1991b), Butt (1993, 1995), Mohanan (1994, 1995)). The full range of agreement patterns still awaits a detailed analysis: in Urdu/Hindi the type of agreement varies from auxiliary to auxiliary and across different tenses. We briefly return to the issue of agreement as it interacts with case in section 4.3.

2.3. *Accusative*

The accusative is form-identical with the dative *ko* (section 2.4). Many approaches therefore assume that Urdu/Hindi lacks an accusative and that the *ko* is an inherent dative case (e.g., Mahajan 1990, Davison 1998). However, there are two distinct distributional patterns with regard to *ko*. If a single label for *ko* were assumed, a distinction would still have to be made at some level of analysis. In this paper, as in earlier work (Butt 1995), we reify these distinct distributional patterns in terms of two different names: accusative vs. dative.

As shown in (5), the accusative marker *ko* alternates with the phonologically null nominative on direct objects. The appearance of accusative *ko* is connected with a sensitivity to animacy (animate objects almost always require *ko*) and definitel-specific interpretations. This property of *ko* has been discussed extensively (e.g., Allen 1951, McGregor 1972: 49–50, Butt 1993, Masica 1991, Mohanan 1994, Singh 1994).

Furthermore, *ko* is associated with a notion of affectedness (Saksena 1982). Relevant examples come from causativization patterns that generalize across verb classes. Some verb classes (i.e., the so-called *ingestives* 'eat', 'drink', but also 'write') require the causee to be marked with *ko*, as in (7a). Most verb classes require the causee to be marked with instrumental *se*, as in (7b). Finally, a handful of verbs, as in (8), allow an alternation between *se* and *ko* that has been analyzed in terms of an *affected agent* by Saksena (1982).⁸

⁸ See Butt (1998) for an analysis of the causative patterns in terms of aspectual affectedness.

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- (7) a. anjum=ne saddaf=ko/*se k^hana
 Anjum.F.Sg=Erg Saddaf.F.Sg=Acc/Inst food.M.Sg.Nom
 k^hil-a-ya
 eat-Caus-Perf.M.Sg
 'Anjum made Saddaf eat food (gave Saddaf food to eat).'
 b. anjum=ne saddaf=se/*ko paoda
 Anjum.F.Sg=Erg Saddaf.F.Sg=Inst/Acc plant.M.Sg.Nom
 kat-a-ya
 cut-Caus-Perf.M.Sg
 'Anjum had Saddaf cut a/the plant.'
- (8) a. anjum=ne saddaf=ko masala
 Anjum.F.Sg=Erg Saddaf.F.Sg=Acc spice.M.Sg.Nom
 cak^h-va-ya
 taste-Caus-Perf.M.Sg
 'Anjum had Saddaf taste the seasoning.'
 b. anjum=ne saddaf=se masala
 Anjum.F.Sg=Erg Saddaf.F.Sg=Inst spice.M.Sg.Nom
 cdk^h-va-ya
 taste-Caus-Perf.M.Sg
 'Anjum had the seasoning tasted by Saddaf.'

The accusative is thus another example of a case marker that is structural in the sense that it can only appear on certain grammatical relations (it appears only on direct objects in most dialects of Urdu/Hindi), but is also semantic in that it participates in an specificity alternation with the nominative and an affectedness alternation with the instrumental in causatives.

2.4. *Dative*

The **dative** is identical in form to the accusative. It **differs from the accusative in that it marks indirect objects, as in (9), and subjects, as in (10), and never alternates with nominative objects. Nor does the dative indirect object in (9) ever become subject under passivization, unlike the accusative.**

- (9) anjum=ne saddaf=ko ciṭṭhi
 Anjum.F.Sg=Erg Saddaf.F.Sg=Dat letter.F.Sg.Nom
 d-i
 give-Perf.F.Sg
 'Anjum gave Saddaf a letter.'

The dative is associated with the θ-role *goal/experiencer* (cf. Verma and K.P. Mohanan (1990) on experiencer subjects, and Mohanan 1994 and references therein). Experiencer subjects encompass modal contexts such as in (10a), psych predicates as in (10b), the alternation with the ergative as in (1), and subjects of N-V complex predicates, as in (10c).

- (10) a. nadya=ko skul ja-na pay-a
Nadya.F.Sg=Dat school.F.Sg.Obl go-Inf.M.Sg fall-Perf.M.Sg
'Nadya had to go to school.'
- b. nadya=ko dar lag-a
Nadya.F.Sg=Dat fear.M.Sg.Nom be attached-Perf.M.Sg
'Nadya was afraid.'
- c. nadya=ko kahani yad a-yi
Nadya.F.Sg=Dat story.F.Sg.Nom memory come-Perf.F.Sg
'Nadya remembered the story.'

The dative is thus also a combination of structural and semantic case. It is restricted to indirect objects and subjects, but cannot be relegated to the status of an unpredictable inherent case since there are coherent syntactic and semantic generalizations as to its distribution and use.

2.5. *Instrumental*

The instrumental *se* is extremely versatile. It may be used for instrumental adjuncts as in (11a), for source expressions, both locative, as in (11b), and material, as in (11c), as well as for comitatives, as shown in (11d), and for causees, as in (8).

- (11) a. nadya=ne darvaza cabi=se
Nadya.F.Sg=Erg door.M.Sg.Nom key.F.Sg=Inst
k^hol-a
open-Perf.M.Sg
'Nadya opened the door with a key.'
- b. nadya=ne aj lahor=se fon ki-ya
Nadya.F.Sg=Erg today Lahore=Inst phone do-Perf.M.Sg
'Nadya called from Lahore today.'
- c. sunar=ne sone=se
goldsmith.M.Sg=Erg gold.M.Sg.Obl=Inst
har bana-ya
necklace.M.Sg.Nom make-Perf.M.Sg
'The goldsmith made a necklace out of the gold.'

- d. nadya saddaf=se bat kar
 Nadya.F.Sg.Nom Saddaf.F.Sg=Inst talk.F.Sg.Nom do
 rah-i he
 stay-Perf.F.Sg be.Pres.3.Sg
 'Nadya is talking to Saddaf.'

The instrumental is also used on adjuncts that express the demoted agent (logical subject), as in the standard passive in (12). Standard passives are formed with the verb *ja* 'go' (in all tenses) in combination with perfect morphology on the main verb.

- (12) cor (polis=se) pakr-a
 thief.M.Sg.Nom police=Inst catch-Perf.M.Sg
 gε-ya/ja-ta
 go-Perf.M.Sg/go-Impf.M.Sg
 'The thief was caught by the police.'
 (adapted from Mohanan (1994: 183))

The instrumental also occurs in a construction described as a passive of disability in some grammars of Urdu/Hindi (e.g., Glassman 1976, Van Olphen 1980), as in (13).

- (13) a. nadya=se ya ʊrdु=k-i cɪt̪ʰi
 Nadya.F.Sg=Inst this Urdu=Gen-F.Sg letter.F.Sg.Nom
 pɑr̪ʰ-i nah? ja-ti
 read-Impf.F.Sg not go-Impf.F.Sg
 'Nadya does not have the ability to read this Urdu letter.'
 b. us=se cal-a nah? ja-e-g-a
 Pron=Inst walk-Perf.M.Sg not go-3-Fut-M.Sg
 'She/he can't possibly walk.' (in the context of a broken leg)
 (Glassman 1976: 275)

This (dis)ability "passive" differs syntactically from the standard passive. It is possible with intransitives, as in (13b), unlike the standard passive. The instrumental NP is obligatory and exhibits subject properties with regard to control and anaphora (see Mohanan 1994 for a list of diagnostics for grammatical subjecthood in Hindi).⁹

⁹ See Butt (1997) for an analysis of this construction as a complex predicate with dispositional semantics whose subject is an instrumental NP. Bhattacharya (1998) proposes an alternative analysis in terms of negative polarity. Davison (1990) examines this construction within a larger discussion on "peculiar passives".

Thus, *se* can appear in a wider number of contexts than the other case markers: it can serve to mark core grammatical relations as well as adjuncts. In the adjunct contexts *se* has a range of meanings. In the passive and the (dis)ability construction, on the other hand, the appearance of *se* is predictable, depending on the verb *ja* 'go' and the lexical semantics of the verb (if the verb does not allow passivization or does not allow a dispositional reading, then the construction is illformed).

2.6. Genitive

The genitive may be roughly characterized as marking subjects of non-finite clauses, as in (14a), subjects of finite copula constructions, as in (14b), and specifiers of nominals, as in (14c). Like other case marked nominals in Urdu/Hindi, genitives may be scrambled. As such, they are functionally, but not phrase structurally determined. Genitives are also not semantically motivated: Mohanan (1994: 177) considers and discards an analysis in terms of a semantic notion such as possession.

- (14) a. ram=ke b^et^h-ne=par mā=ne
 Ram.M.Sg=Gen.M.Sg.Obl sit-Inf.Obl=on mother.F.Sg=Erg
 us=ko k^hana di-ya
 Pron=Dat food.M.Sg.Nom give-Perf.M.Sg
 'On Ram's sitting down, the mother gave him food.'

(Adapted from Mohanan 1994: 78)

- b. ram=ka ek beta hr
 Ram.M.Sg=Gen.M.Sg one son.M.Sg.Nom be.Pres.3.Sg
 'Ram has one/a son.' (Adapted from Mohanan 1994: 177)
- c. rani=ka b^hai
 Rani.F.Sg=Gen.M.Sg brother.M.Sg.Nom
 'Rani's brother'

In general, the genitive can be analyzed as marking specifiers. Were it not for the rather complicated agreement pattern associated with it, this case would be crosslinguistically unremarkable. As can be seen from the examples in (14), the genitive inflects to agree with the head noun in terms of gender, number, and obliqueness. Payne (1995) discusses the Hindi genitive and views the agreement pattern as an instance of *Suffixaufnahme*.¹⁰

¹⁰ The fact that the genitive inflections can be traced directly to its historical origin. After a fierce debate in the last century, the view espoused by Hoernle won out and was taken over by Beames (1872: 285) and Kellogg (1893: 129). Under this view, the genitive is analyzed as having arisen from *krīta* 'done by', the Sanskrit past participle of *kṛi* 'do' as follows.

3. HISTORICAL BACKGROUND

In this section we briefly consider the historical origins of the modern Urdu/Hindi case system. Beames (1872) and Kellogg (1893) both provide detailed discussions on the possible origins of the modern case markings in Urdu/Hindi. Despite their very careful discussions, much more diachronic work remains to be done to establish the historical development of the modern case markers at the same level of detail as is available for the Romance languages, for example. Unfortunately, the amount of research needed falls outside the scope of this paper, but see Butt (2001a) for a more detailed look at the ergative case in Urdu/Hindi.

3.1. *The Collapse of the Sanskrit System*

The Sanskrit case system consisted of a complex set of declensions which varied according to three numbers (singular, dual, plural) and approximately thirteen different noun classes. The system distinguished nominative, accusative, instrumental, dative, ablative, genitive, locative, and vocative. Unlike the Urdu/Hindi system of today, case was marked by inflectional affixes, as in its sister language Latin. This system was simplified over time. A rough indication of the developmental stages as described in Sen (1973) is given in (15).

- (15) A. Old Indo-Aryan
 - 1200 BCE–600 BCE (Vedic)
 - 600 BCE–200 BCE (Epic and Classical Sanskrit)
- B. Middle Indo-Aryan (Aśokan inscriptions, Pāli, Prākrits, Apabhrāṃṣa-Avahāṭṭha)
 - 200 BCE–1100 CE
- C. New Indo-Aryan (Bengali, Urdu/Hindi, Marathi and other modern North Indian languages)
 - 1100 CE–Present

Masica (1991: 231) gives Table 4 for Middle Indo-Aryan. The endings are listed in their surface forms as they occur distributed over several nominal paradigms. These forms were either lost or were collapsed into the modern oblique marking (Beames 1872: 209). In particular, the genitive and locative forms seem to have fallen together in Apabhramsa, and in old (or archaic) Hindi the ablative, dative, and accusative singular were then also collapsed (Kellogg 1893: 126).

Sanskrit *krita* > Prakrit *kerita* > *keriai* > modern Urdu/Hindi *k-*. The original participial inflected for agreement and the genitive case marker has not lost this property.

Table 4. Case Forms in Middle Indo-Aryan

	Singular	Plural
Nominative	-u, a, am	-a, a <tilde></tilde>
Accusative	[same as Nominative]	
Instrumental	-em, im, he, hi	-e(h) <tilde>, ehi, ah<tilde></tilde></tilde>
Ablative	-hu, ahu, aho	-hū, ahū
Genitive/Dative	-ho, aho, ha, su, ssu	-na, ha"
Locative	-i, hi, him	-hī

In modern Urdu/Hindi, the oblique is mandatory for all non-nominative (non-direct) forms. This includes all nouns marked by overt case, as illustrated in (16), as well as bare locatives, as shown in (17). The oblique manifests itself as the affix -e on masculine singular nouns ending in -a, and as -ō in the plural on all nouns. However, on all other forms (e.g., feminine singular nouns, masculine nouns not ending in -a such as *yassin* in (16)), the oblique marking is not overt.

- (16) a. yasin=ne kutt-a dek^h-a
 Yassin.M.Sg=Erg dog-M.Sg.Nom see-Perf.M.Sg
 'Yassin saw a/some dog.'
- b. yasin=ne kutt-e=ko dek^h-a
 Yassin.M.Sg=Erg dog-M.Sg.Obl=Acc see-Perf.M.Sg
 'Yassin saw the dog.'
- (17) adnan dakxane gε-ya
 Adnan.M.Sg.Nom post office.M.Sg.Obl go-Perf.M.Sg
 hε
 be.Pres.3.Sg
 'Adnan has gone to the post office.'

Because the oblique is a prerequisite for the ergative, dative, accusative, instrumental, genitive, and locative marking, as well as for postpositions (section 4.2), Masica (1991: 231–236) analyzes the oblique as Layer I of three possible layers of case marking. We do not follow this analysis, but see this remnant of the Sanskrit system as ensuring synchronic morphological wellformedness: if the noun is in the oblique form, then modifying adjectives must also be in the oblique form. The one use of the oblique marking in the modern system in which the original case function has been preserved is the use of the oblique to mark locatives as in (17). The meaning of this locative use is restricted: it can only mean 'to' or 'from', not 'in', 'towards', etc. We thus distinguish between two forms of the oblique morphemes (section 5): one as agreement inflection on the complement of a K head, and one as a locative case marker.

3.2. The Origin of the New Case Markers

None of the modern case forms are descended from the forms in Table 4, despite the wide-spread belief in the literature that the modern ergative ne is descended directly from the Sanskrit instrumental *-ina*. As shown in section 4, the modern ergative is a clitic and not an affix, as would be expected if it were a continuation of the Sanskrit instrumental inflectional affix. Furthermore, a survey of Old Hindi writers in the middle ages shows that while they used an ergative pattern, there was no sign of ne (Beames 1872: 267–271). Instead, the oblique marked the subjects of eligible transitive verbs.

In the equivalent to (18), for example, modern Urdu/Hindi would require that 'king' and 'brahmin' be marked with the ergative ne due to the perfect morphology on the transitive verb. However, this is not the case in (18). There is no overt manifestation of oblique marking presumably because these are not masculine nouns ending in *a*.

- (18) daha bār bujh-yeu rāj
 ten time ask-Perf.M.Sg king
 duj di-yeu na utar kāj
 brahmin give-Perf.M.Sg not answer matter
 'Ten times the King asked, The Brahmin gave no answer in
 the matter.'
 [Old Hindi] (Chand, Prithiraja-Rasau i.49; Beames 1872: 267)

In (19) the oblique marking on the subject is overt: the form of the wh-word 'who' is in the oblique. In (20), the subject 'Kabir' again shows no overt oblique marking, but here the verbs all agree with the object, just as would be the case in the modern language for a transitive verb with a non-nominative subject (section 6). This is particularly clear for the verb 'take': it agrees with the feminine noun 'pen'.¹¹

- (19) jihi rac-e suraga bhu
 who.Obl create-Perf.M.Pl heaven.M.Nom earth.Nom
 satta pātāla
 seven.Nom hell.M.Nom
 'Who made heaven, earth, the seven hells.' [Old Hindi]
 [He who created heaven, earth and the seven hells.]
 (Chand, Prithiraja-Rasau i.11; Beames 1872: 267)

¹¹ We thank Ashwini Deo for help with the glossing and transcription of these examples.

(20)	masi	kāgad	chii-yo	nahi	kalam
	ink.Nom	paper.M.Nom	touch-Perf.M.Sg	not	pen.F.Sg
	gahi	nahi	hāth	jāro	juga
	take.Perf.F.Sg	not	hand	four.Pl	māhātma
	jehi	kabir	jan-%-yo		nāth
	who.Sg.Acc	Kabir.Obl	know-Caus-Perf.M.Sg	lord.Nom	

'Kabir touched not ink nor paper, he took not pen in hand; He made known the lord to whom is glory in the four ages.' [Old Hindi] (Kabir, Sakhi 183; Beames 1872: 269)

The origin of the ergative ne is not known. Beames and Kellogg propose the participial form *lage* of the verb *lag* 'stick to' as a possible ancestor (Beames 1872: 264) and speculate that the Urdu/Hindi ergative may be derived from a subjective dative that was in use in another dialect of Hindi around the time of the Moghul Emperor Shah Jehan's reign (1627–1658). We are exploring the idea that the Sanskrit locative *janyē* 'for the sake of, because of, caused by' may have been the ancestor of ne as well as some dative forms, such as Assamese *no* and Gujarati *nē*, in other South Asian languages (Butt 2001a). This form also gave rise to the Bengali post-position *jonno* 'for' (Chatterji 1926: 769). As other case markers in Urdu/Hindi appear to have their origin in former nouns, *janyē* is a reasonable candidate as an ancestral form of the modern ergative case marker.

The instrumental se may either be connected with Sanskrit *sam* 'with' or with the locative singular noun *saṅge* 'in attachment to' (Kellogg 1893: 132). The genitive arose out of a participial form of 'do' (fn. 11), and the dative/accusative ko is generally traced to the Sanskrit locative noun *kākshe* 'armpit, side' (Kellogg 1893: 130).¹² The locatives are derived from various nouns.

3.3. Pronouns

The basic paradigm of pronouns in Urdu/Hindi is given in Table 5 (based on Kellogg 1893, Glassman 1976, Beg 1988).¹³ As can be seen, the pronoun system is quite complicated. While there are no gender distinctions and the Sanskrit dual has been lost, the second person includes some honorific distinctions and the third person makes a difference between proximal and

¹² This case marker is also similar to the dative suffix in Dravidian languages: Telugu and Tamil *-ku*, Malayalam *-kku*, Old Kannada *-ke* or *-kke*, Tulu *-ku* or *-gu* (Sahoo 2001: 38). As such, further investigation is called for.

¹³ One of the reviewers asserts that a discussion of the status of case is incomplete without addressing the issue of pronouns. We had not included a discussion of pronouns in an earlier version of this paper because the Urdu/Hindi pronoun system is the result of several differing historical developments, as is generally the case crosslinguistically.

distal. The instrumental and locative¹⁴ appear to pattern together. However, the nominative, ergative, and accusative/dative stand alone, as does the genitive, which is the only case which inflects according to gender and number (as with the nouns).

Dasgupta, Ford, and Singh (2000: 121–146) examine data with respect to the interaction of case and pronouns in Hindi and conclude that the forms we have been treating on a par as case markers should be subdivided into two classes: true adpositions and case expressing light adpositions. True adpositions include the instrumental *se* and the locatives *mē* 'in' and *par* 'on'.¹⁵ Light adpositions are dative/accusative *ko*, ergative *ne*, and the genitive *k-*. Their classification is based primarily on a semantic argument: the dative/accusative, ergative, and genitive are structural cases because they are not interpretable. The locatives and the instrumental are semantically interpretable and hence not structural. We argue that this type of a division is unwarranted for Urdu/Hindi due to the many semantically motivated alternations found with structural case markers.

Another argument for the classification advanced by Dasgupta et al. (2000) is that the dative/accusative, ergative, and genitive appear to receive special attention in the pronominal paradigm in terms of their morphological forms. However, they do not consider the complete pronoun paradigm.¹⁶ As can be seen in Table 5, the dative/accusative, ergative and genitive do not form a natural class.

In fact, the pronoun forms reflect their historical origin. The third person forms are demonstratives which have been coopted by the pronoun paradigm (Sanskrit also employed demonstratives as third person pronouns, but not the same forms). The *ap*, the respectful second person, is apparently derived from the Sanskrit noun *ātman* 'soul, self' (Kellogg 1893: 181). These pronouns therefore pattern like nouns with respect to the genitive. Furthermore, the demonstrative origin common to the third person pronouns, which is not shared by any of the other pronouns, accounts for the particular forms of the oblique marking in the third person. The other pronouns represent continuations of the original Sanskrit pronoun system.

We take the variation in pronoun forms to be an indication of continuing historical change (several pronoun forms which were attested in Old

¹⁴ The locative *par* 'on' represents the class of locative case markers here.

¹⁵ No mention is made of *tak* 'towards'.

¹⁶ The *-hō* affix only appears on examples with the ergative in Dasgupta et al. (2000: 128). A reviewer concurs with these judgements. However, Beg (1988: 157–159) and Kellogg (1983: 174–175) report that this form is used with all oblique non-nominative forms. This is in accordance with Lahori Urdu. A dialectal difference thus seems to characterize the use of pronoun forms in Urdu/Hindi.

Table 5. Pronoun Paradigm

	NOM	ERG	ACC/DAT	INST	LOC	GEN
1. Sg	m̄e	m̄e=ne	muj ^h =ko muj ^h e	muj ^h =se	muj ^h =par	mer-a/i/e
1. Pl	ham	ham=ne	ham=ko hame	ham=se	ham=par	hamar-a/i/e
2. Disresp.	tu	tu=ne	tuj ^h =ko tuj ^h e	tuj ^h =se	tuj ^h =par	ter-a/i/e
2. Familiar	tum	tum=ne	tum=ko tumhe	tum=se	tum=par	tumhar-a/i/e
2. Resp.	ap	ap=ne	ap=ko	ap=se	ap=par	ap=k-a/i/e
3. Prox.Sg	ye	is=ne	is=ko ise	is=se	is=par	is=k-a/i/e
3. Prox.Pl	ye	in=ne inhō=ne	in=ko inhō=ko ine	in=se inhō=se	in=par inhō=par	in=k-a/i/e inhō=k-a/i/e
3. Dist.Sg	vo	us=ne	us=ko use	us=se	us=par	us=k-a/i/e
3. Dist.Pl	vo	un=ne unhō=ne	un=ko unhō=ko Unhē	un=se unhō=se	un=par unhō=par	un=k-a/i/e unhō=k-a/i/e

and Middle Urdu are no longer in use today).¹⁷ While the pronoun paradigm and its interaction with case is interesting and worthy of further exploration, especially in comparison with the diachronic developments and synchronic patterns of related Indo-Aryan languages, we now return to the discussion of our theory of case as applied to Urdu/Hindi.

¹⁷ For example, the first person singular is a continuation of the Sanskrit instrumental singular first person pronoun *mayā*. This form has been reanalyzed as a direct form in Urdu/Hindi, but not in Punjabi, where the *m̄e* is treated as an oblique, as seen by the object agreement and the fact that third person nouns must be marked with the ergative.

(i) m̄e/adnan=ne htab vejk^h-i
I.Obl/Adnan.M=Erg book.F.Sg.Nom see-Perf.F.Sg.
'I/Adnan saw the book.' [Punjabi]

The *tuj^h* and *muj^h* forms are continuations of old dative forms. The oblique *-e* inflection on these forms signals the dative, but we do not believe that this *-e* is the same as the oblique *-e* discussed above. There is some indication that the *tuj^h* and *tuj^he* forms evolved independently (Beg 1988: 151, 156).

3.4. Summary

In sum, the original Sanskrit case morphology has been almost completely lost. The oblique marker is a last vestige of the original morphemes. It still fulfills a locative function in restricted contexts, but now primarily serves as a morphological wellformedness checker similar to the weak/strong agreement pattern of German adjectives and determiners (see Butt, King, Niño, and Segond (1999: 103–108) for a description and LFG analysis).

Masica (1991), on the other hand, treats the oblique marking as Layer I in a series of case layers. Layer II includes the items in Table 2 which we consider to be case markers. Layer III encompasses the nominal part of postpositions (section 4.2). Masica's three layer system of case marking essentially mirrors the historical development of case and postpositional marking in South Asian languages. Layer I encompasses the vestiges of the old system. In some South Asian languages, these vestiges play a greater role in the case marking system than what can be observed in Urdu/Hindi. For those languages, an inclusion of the oblique marking as part of the case system seems reasonable. Layer II encompasses those items which now function as case markers, while Layer III denotes nouns such as *upar* as in *mez ke upar* 'on top of the table', where the 'top' is linked to the main noun via the genitive (as in the English translation). In this paper, we essentially make the same distinctions as Masica, but formalize them differently. Layer II is case proper for us, while Layer III encompasses the class of postpositions.¹⁸ In what follows, we build on Masica's basic insight and integrate it into our analysis. As part of this analysis, we establish that the case markers under discussion are clitics and not inflectional affixes (section 4.1) or postpositions (section 4.2). This has been argued for by Mohanan (1994). In the next section, we repeat some of her arguments, as well as adding our own.

4. THE SYNTAX OF CASE MARKERS

4.1. Clitics vs. *Affixes*

Given that the case markers always appear after an NP, one possible assumption is that they are affixes. In this section, we review evidence from stress, coordination, and an intervening focus clitic (*hi* 'only') to argue that the case endings are clitics (i.e., phrasal affixes).

One classic test for clitic status is the interaction with coordinate structures. Inflectional affixes do not scope over a coordinate structure; instead, they can only be attributed to the stem to which they attach. For

¹⁸ A reviewer points out that Naim's (1975) Urdu grammar also argues for this position.

example, the oblique marking *-e* on nouns is an inflectional affix. In (21a) the case clitic *ko* requires this oblique marking on its complement. Even when the complement is coordinated, the oblique marking cannot take scope over the coordinated nouns, whether the first one is just the stem *kutt*, as in (21a), or the noun with the non-oblique ending *kutta*, as in (21b). Instead, the oblique ending must appear on both nouns in the coordinate structure, as in (22a).

- (21) a.*[[kutt or g^hor]-e]=ko
 dog and horse-M.Sg.Obl=Acc
 b.*[[kutt-a or g^hor]-e]=ko
 dog-M.Sg and horse.M.Sg.Obl=Acc

In contrast, the case endings in Urdu/Hindi can scope over coordinated noun phrases, as in (22). For similar examples and argumentation see Mohanan (1994) and Payne (1995) on the genitive.

- (22) a. yasin=ne [kutt-e or g^hor-e]=ko
 Yassin.M.Sg=Erg dog-M.Sg.Obl and horse-M.Sg.Obl=Acc
 dek^h-a hε
 see-Perf.M.Sg be.Pres.3.Sg
 'Yassin saw the dog and the horse.'
 b. nadya [lahor or karac^{hi}]=se hε
 Nadya.F.Sg.Nom Lahore and Karachi=Inst be.Pres.3.Sg
 'Nadya is from Lahore and Karachi.'

The focus clitic may be placed between the case marker and the nominal, as seen in (23), where *hi* 'only' appears between various nouns or pronouns and the case markers.¹⁹

- (23) a. us=hi=ne kam ki-ya
 Pron.3.Sg=Foc=Erg work.M.Sg.Nom do-Perf.M.Sg
 'That one himself/only did (the) work.'
 b. tuj^h=hi=ko di-ya
 you.Obl=Foc=Dat give-Perf.M.Sg
 'I gave it to you (and not to anyone else).' (Platts 1967: 300)

¹⁹ The focus clitic has the distribution of an adverb. As such, it has a wider syntactic distribution than the case clitics, although it is always postposed and may not be the last element of a clause. In (i), the focus clitic *hi* is shown attached to a verb.

- (i) nadya=ne taf k^hel-a=hi hε
 Nadya.F.Sg=Erg cards play-Perf.M.Sg=also be.Pres.3.Sg
 'Nadya has only played cards.'

- c. m̄ẽ vahā saikal=hi=se pahōc^h sak-ti
 I.Nom there bicycle=Foc=Inst reach able-Impf.F.Sg
 hū
 be.Pres.1.Sg

'I can get there with just a bike.' (Sharma 2003)

- d. Gauri: to us=se matlab?
 so Pron.3.Sg.Obl=Inst meaning.M.Sg.Nom
 Lak^ha: ham=hi=se sara
 Pron.3.Pl=Foc=Inst all.M.Sg.Nom
 matlab
 meaning.M.Sg.Nom

Gauri: 'So, what meaning of that [what's the meaning of that]?'
 Laka: 'All meaning is from us/me alone [the meaning is all of my knowing].'
 (Lagan 'Tax', Hindi Movie)

The examples in (23) have been drawn from a variety of sources because judgements on these sentences vary. Sharma (2003) documents speaker variability with respect to clitic placement, but shows that clitics can be inserted between a noun and its case marker. This supports our view that case markers are clitics.²⁰

With true affixes, the focus clitics behave differently: the clitic cannot split an affix from its stem. This is seen in (24a) in which a clitic appears

²⁰ Dasgupta, Ford, and Singh (2000: 130) list four clitic+case marker combinations as ungrammatical: *mē=hi=ne* 'I=Foc=Erg', *tu=hi=ne* 'you=Foc=Erg', *inhō=hi=ne* 'they.Obl=Foc=Erg', and *unhō=hi=ne* 'they.Obl=Foc=Erg'. This leads them to conclude that ne must be treated as an inflectional affix. However, Kellogg (1893: 176) lists *unhī=hi=ne* 'they.Obl=Foc=Erg' as a possible form. This evidence, taken with the examples above, indicates that ne is not an affix. Another argument from Dasgupta, Ford, and Singh for the affix status of ne with respect to pronouns comes from (Hindi) orthography, where the ne is sometimes written as one word together with the pronoun. However, it is well known that orthography provides at best a weak argument for the morphosyntactic status of an item. Consider, for example, the German spelling reform, by which *radfahren* 'bicycle-drive' is now spelled *Radfahren*, though the status of *Rad* 'wheel' itself has not undergone any morphosyntactic or prosodic change since the spelling reform. Another example comes from Lahiri's (2000) work on the Bengali progressive and perfect. Both of these are formed with a version of the auxiliary 'be', and in both the progressive and the perfect the main verb in combination with the 'be' is spelled as one word in the Bengali script. However, Lahiri shows that that the 'be' in the perfect has the status of a clitic, while the progressive 'be' has been reanalyzed as an affix. We therefore conclude that the ne cannot be analyzed as an affix. However, work remains to be done on the compatibility of pronouns with clitics, as Platts (1967: 301) mentions certain combinations which are not felicitous: *mē=hi=ne* 'I=Foc=Erg', *mera=hi* 'I.Gen=Foc', *tera=hi* 'you.Gen=Foc'. One of the reviewers concurs with Dasgupta et al.'s judgements, again indicating dialectal variation.

between the oblique ending *-e* and the noun stem *kutt*. A similar example is shown for verbal affixes in (24b).

- (24) a.* *kutt-hi-e*
 dog-Foc-Obl
 b.* *k^hel-hi-a*
 play-Foc-Perf.M.Sg

Furthermore, stress facts indicate that the case endings are clitics and not affixes. Case markers do not affect the placement of stress, while affixes do. For example, in trisyllabic words with three heavy syllables, the stress falls on the penult as in *talAfi* 'search'. If the case markers affected the stress system, one would expect *Afa* + *ko* 'to Asha' to become *a^hako*, but the stress remains on the first syllable.²¹

The case endings in Urdu/Hindi are therefore not inflectional affixes. Since they are not syntactically independent, we propose that they are clitics (see Masica 1991: 234 for a similar conclusion). In particular, they are clitics which syntactically attach to NPs.

4.2. *Clitics* vs. Postpositions

Due to the above properties, and due to the fact that the case markers attach postnominally, case endings have been described as postpositions in many accounts of Urdu/Hindi. Again following Mohanan (1994), we wish to make clear that postpositions differ from the case markers in terms of form and distribution. Consider the typical postpositions in (25) and example in (26).

- (25) ke pic^he 'behind'
 ke pehle 'before'
 ke nic^he 'under'
 ke pas 'next to'
 ke upar 'over'
 ke sat^h 'with'
 ke andar 'inside'
 ke liye 'for'
 ke samne 'in front of'
 ke taraf 'in the direction of'
 ke age 'in front of (further along)'
 ke bad 'after'

²¹ Thanks to Rami Nair (p.c.) for discussion on this point. A reviewer notes that evidence from stress is problematic as the Hindi stress system itself is highly problematic. This criticism is warranted. Hayes (1990: 162–167) represents the most useful and lucid summary of the known facts. We present the stress evidence here as suggestive when taken together with the evidence from coordination and clitic placement.

- (26) billi bistar [ke nich^e] so
 cat.F.Sg.Nom bed.M.Sg Gen.Obl under sleep
 rah-i hε
 stay-Perf.F.Sg be.Pres.3.Sg

'The cat is sleeping under the bed.'

All the items in (25) correspond to a relational preposition in English. In contrast to English, they appear after the NP. The ke in each of these postpositions is the oblique form of the genitive, which is now invariant for most postpositions.²² For the native speaker, this invariant ke is not associated with the genitive, but is taken to be part of the postposition. Similarly, the final -e on some of the postpositions in (25) is presumably a reflex of the oblique marking, which indicated a locative.

As shown in (27), some postpositions allow inflection and establish the link to an original genitive construction (also see Masica 1991: 234) in which the postpositions of today were nouns linked to another noun via the genitive (cf. English because *of*).

- (27) mε=ne billi=ka pic^ha ki-ya
 I=Erg cat.F.Sg=Gen.M.Sg behind.M.Sg.Nom do-Perf.M.Sg

'I went after the cat.'

In addition, the contentful part of the postposition may appear by itself, as in (28). This is not the case for any of the case clitics, including the locatives me", par, and tak listed in Table 2.

- (28) upar ao
 up come.Impf
 'Come up!'

There is thus a clear difference in distribution and form between the case markers and the ke postpositions. However, the locative case markers (me" 'in', par 'on', tak 'towards') do pattern with the postpositions in one respect. Although Urdu/Hindi does not normally exhibit case stacking, se 'from' (and me" 'in') may stack on top of locatives, be they case markers, as in (29a), or postpositions, as in (29b).

²² A reviewer points to the contrast between *makan ke pas* 'house.M.Sg Gen.Obl side' vs. *makan ki or* 'house.M.Sg Gen.F.Sg side', which is discussed by Dasgupta, Ford, and Singh (2000: 125). Here *ke pas* is invariant, but the genitive in *ki or* shows feminine agreement with *or*. The contrast is taken as evidence that postpositions are not always invariant. However, we analyze *ke pas* as a postposition, but *makan ki or* as a standard Noun-Genitive Noun construction in which agreement with the head noun is expected.

- (29) a. *un lōgō=mē=se tin*
 that.Pl.Obl people.Obl.Pl=in=from three
 'three from among those people'
- b. *almari [ke pic^be]=se*
 cupboard Gen.Obl behind=from
 'from behind the cupboard'

However, the relevant generalization is over locatives, not over a particular syntactic class (case clitics vs. ke postpositions). It would therefore be a mistake to base the identification of case clitics with postpositions on this one argument, especially as the case clitics can all appear on subject noun phrases, while noun phrases with ke postpositions do not mark subjects (Mohanan 1994).

As such, postpositions must be distinguished from case clitics. In the following section, we propose that case clitics are heads of a KP, whereas postpositions are PS which head a PP.

4.3. Structural Representation of Case Markers

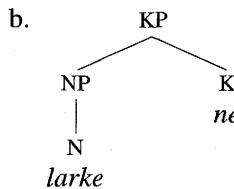
4.3.1. Case Markers

Crosslinguistically it has long been noticed that only certain types of words become clitics (see Sadock 1991 for discussion). In order to capture this generalization, it has been proposed that functional heads can be clitics, while lexical categories such as nouns cannot, unless they undergo historical development and change category along with the change in prosodic status (see Franks 2000 and references therein).

The Urdu/Hindi data support this idea, and we propose that the case endings are functional heads of a KP (KaseP). This gives rise to the basic structure in (30b).²³ We assume that the oblique marking on nouns (singular -e in (30)) is synchronically the result of the complement-head relationship between the K and the NP. This marking is obligatory when there is an overt K head. However, not all norninals allow the oblique marking to surface, as discussed in section 3.1.

²³ Due to lack of space, we do not put forth a detailed analysis of the internal structure of Urdu/Hindi norninals. For a detailed description of Hindi data, see Verma (1971). Of particular interest to the data discussed here is the position of Adjectival Phrases in the structure; as in many languages, APS show agreement patterns with their head nouns in Urdu/Hindi.

- (30) a. *larke=ne*
boy.M.Sg.Obl=Erg



This use of KP differs from that proposed by Lamontagne and Travis (1986) and employed by Löbel (1994) and Bayer, Bader, and Meng (2001). Lamontagne and Travis (1986) proposed the KP in analogy with IP and CP. Under this view (as under our view), the K is a functional element. However, in our approach, the type of functional information it can contribute is not restricted to a simple case value. Instead, K can contribute a complex of features associated with case, including grammatical function information and semantically relevant material such as volitionality. This is not as radical a proposal as it might at first seem: before the split Infl hypothesis, ¹ included information on tense, aspect, mood, and agreement; we extend this idea in that the functional head can contribute information, in addition to checking it against features.

The encoding of a complex of features in functional categories such as K is also employed by Löbel (1994). However, in her approach, as in that of Bayer, Bader, and Meng (2001), no distinction is made between Ks which are bound pieces of morphology and Ks which are independent syntactic words (e.g., prepositions).²⁴ In Bayer, Bader, and Meng's (2001) analysis of German case marking, which is inflectional and most reliably found on determiners and adjectives, the category KP is used for both dative case (inflectional) and governed prepositional phrases. In Löbel's (1994) approach to case alternations on objects, K makes no distinction between sublexically bound and syntactically independent words. For example, German determiners such as *der* 'the' are formed via Head Movement of K to D. Such approaches cannot be incorporated into our analysis because we subscribe to the Lexical Integrity Principle (Bresnan and Mchombo 1995). This principle holds that words are built out of different structural elements and are composed by different principles than syntactic phrases. Within LFG, this principle is encoded through c(onstituent)-structure representations such as (30b) which do not extend into the morphology. That is, bound morphemes cannot appear independently in the phrase structure, and thus not as a K. Since case markers in Urdu are clitics, i.e., are prosod-

²⁴ This also applies to Dasgupta, Ford, and Singh's (2000) idea of a little p, which may encode inflectional or periphrastic case markers. Little p is used to check oblique case features, much as K does in other approaches. The terminology of little p is meant to be indicative of the slippery slope between postpositions and case markers. We sympathize with this concern, but see no gain in adopting the idea of little p.

ically dependent on another element but have different properties from bound morphemes, they may appear as the head of a K phrase.

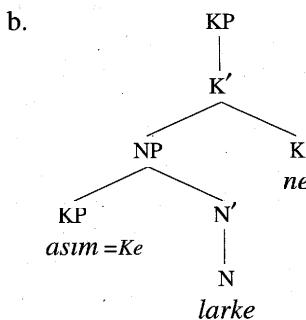
Our proposal is structurally quite close to that of Neeleman and Weerman (1999), who employ a CaseP which carries structural features and which may remain empty with nominatives. We also posit a fundamental distinction between nominative and non-nominative cases (cf. Neeleman and Weerman 1999: 63), but we include semantic information in our case markers and generally allow them to play a more active role.

4.3.2. *Genitives*

We analyze genitives as occurring in the specNP position.²⁵ For a similar analysis of genitives see Davison (1998).

The oblique marking on the NP complement of K was discussed in section 4.3.1. The agreement between the genitive k- and the head noun is due to the fact that this case marker originated from a participial construction. This agreement can be viewed synchronically as the result of NP internal agreement.

- (31) a. asim=ke lařke=ne
 Asim.M.Sg=Gen.Obl boy.M.Sg.Obl=Erg



²⁵ We would like to thank a reviewer for suggesting this structure which allows for coordination data such as that in (i).

- (i) asim=ke pitta ji or amir=ke
 Asim.M.Sg=Gen.Obl father Resp and Amir.M.Sg=Gen.Obl
 dada ji ne
 grandfather Resp Erg
 'Asim's father and Amir's grandfather.'

4.3.3. Bare Nominatives

Bare nominatives, i.e., the nominals which have no overt case ending and no oblique inflection, distribute syntactically like KPs with overt case marking. We therefore assume that these project a KP, albeit one without an overt κ head, as in (32b). Since LFG does not posit empty categories, the κ head of the KP is not projected in the structure in (31b) (see King 1995 and Bresnan 2001 for constraints on LFG phrase structure). Under the assumption that the oblique endings are the result of the overt κ head's requirements on its complement, no oblique' ending occurs in the nominative. The nominative case comes from default rules (section 5.2) which state that subject and object KPs in Urdu/Hindi require case and that if there is no other case, the nominative is assigned.

- (32) a. *laṛka*
boy.M.Sg.Nom
- b.
- ```

 KP
 |
 NP
 |
 N
 laṛka

```

#### 4.3.4. Bare Locatives

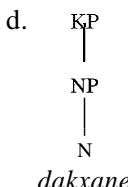
Recall that another type of bare nominal exists in Urdu/Hindi: locatives as in (33). Since these distribute like the overtly case marked nominals, we again assume a KP in which the  $\kappa$  head is not projected. Again, the locative case and the feature structure associated with it is associated with the KP via default rules (section 5.2).

- (33) adnan                        ḫakxane/zu  
 Adnan.M.Sg.Nom post office.M.Sg.Obl/zoo.M.Sg.Obl  
 ge-ya                        hɛ  
 go-Perf.M.Sg be.Pres.3.Sg  
 'Adnan has gone to the post office/zoo.'

- (34) a. zu  
 zoo.M.Sg.Obl
- b.
- ```

    KP
    |
    NP
    |
    N
    zu
  
```

- c. dakxane
post office.M.Sg.Obl



We now need to account for the presence of the oblique inflection. In this instance, we analyze the oblique *e* as a case marker that is a bound morpheme whose surface realization is governed by the morphophonological properties of the nominal (e.g., masculine nouns ending in *a* overtly realize this morpheme, as in (34c)).

4.3.5. Agreement

Recall that Urdu/Hindi verbs agree with either nominative subjects or objects (in that order), or default to masculine agreement if there is no nominative argument. One way of capturing this pattern would have been to distinguish nominatives and nonnominatives in terms of NP vs. KP and then agree only with NPs. However, for this analysis to be convincing, there would have to be more distributional properties that differentiate nominatives from non-nominatives than those that unite them. This is not the case. In addition, the bare locative would be assumed to project to a KP while the bare nominative would not. There is no good reason to assume this. We therefore do not link agreement with the structure of case and for the moment leave aside a treatment of agreement in Urdu/Hindi.

The point that agreement and case are not as intimately related as often assumed is made particularly well in Subbarao's (2001) typological examination of agreement in South Asian languages. Subbarao demonstrates that agreement is sensitive to a variety of factors, and that no coherent generalization can be formulated based on the interaction between agreement and case as necessitated by an analysis of movement for case or ϕ -features. In South Asian languages, case marking is just one factor among many and is not always relevant for agreement.

5. THE ROLE OF CASE IN CLAUSAL STRUCTURE

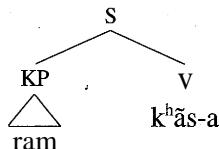
In this section we provide an overview of the LFG architecture as relevant to case assignment. Section 6 provides analyses of particular cases, focusing on the ergative and dative.

In LFG, information from different components combines to produce a consistent and coherent analysis. The different modules of grammar (e.g., grammatical functions, semantics, and phonological information) are encoded in terms of projections from lexical entries and phrase structure

rules, which in turn encode syntactic and morphological constituency.²⁶ This is informally illustrated in (36) for (35). A sentence like (35) has two syntactic structures associated with it. The first is a phrase structure tree, referred to as the c(onstituent)-structure.²⁷ LFG avoids the use of traces. The c-structure therefore closely reflects the actual string and contains a faithful representation of linear order and constituency information. The grammatical functions are encoded in the f(unctional)-structure as an attribute value matrix (AVM).

- (35) ram k^hās-a
 Ram.M.Sg.Nom cough-Perf.M.Sg
 'Ram coughed.'

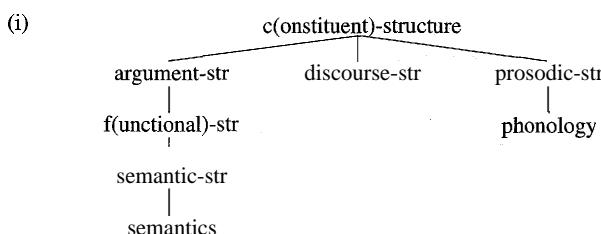
- (36) a. Constituent-structure:



- b. Functional-structure:

PRED	'cough (SUBJ)'								
TNS-ASP	[TENSE PAST]								
SUBJ	<table border="0"> <tr> <td>PRED</td><td>'Ram'</td></tr> <tr> <td>CASE</td><td>NOM</td></tr> <tr> <td>PERS</td><td>3</td></tr> <tr> <td>NUM</td><td></td></tr> </table>	PRED	'Ram'	CASE	NOM	PERS	3	NUM	
PRED	'Ram'								
CASE	NOM								
PERS	3								
NUM									

²⁶ The basic architecture we assume is diagrammed in (i) (based on Butt and King 1998 and Butt, Dalrymple, and Frank 1997). The projections are defined in terms of mathematical functions for which inverse functions are also available; this means that any level of representation can be related to any other level. The lines represent the most direct connections.



²⁷ LFG allows for functional projections and X' syntax; we use s here for expository purposes. See Bresnan 2001 on constraints on LFG phrase structure rules.

In LFG morphological and syntactic elements are given distinct c-structure representations. In contrast, the f-structure information can be contributed by bound morphemes as well as by independent lexical items. As such, the f-structure may be identical whether the case markers are clitics, affixes, or null in c-structure. However, the source of this information will differ: from the clitic itself for clitics; from the affixed noun for affixes; from default rules for null markers (section 5.2).

A priori the role of case marking can be handled in various ways in LFG. For example, the architecture does not presuppose an intimate connection between case, agreement and structural position, although this would be one possibility. In the following, we present our view of case marking in terms of three distinct uses of case: structural, semantic, and quirky. We assume these types of case marking to be universally available, but do not assume that every language will make use of each possibility. Urdu/Hindi uses an interaction of all three types case assignment, while English specializes in structural case by position.

5.1. Grammatical Functions and Mapping Theory

The association of grammatical functions with thematic roles is handled via a flexible, yet constrained theory of *Mapping* (see Bresnan and Zaenen 1990 for an overview). Arguments of a predicate are specified in the lexicon with the features [$\pm r$ (estricted)] and/or [$\pm o$ (bjective)]. Roughly, patient-like roles are [$-r$], secondary patient-like roles are [$+o$], and other roles are [$-o$]. For example, the a(rgument)-structure of the English verb *pound* would look as in (37).²⁸ These specifications constrain the way arguments are associated with grammatical functions, which are also classified by means of these features as shown in (38).

(37)	a-structure	<i>pound</i>	<	ag	pt	>
				[$-o$]	[$-r$]	

(38)	Gram. Functions	Features	Gram. Functions	Features
	SUBJ	[$-r$, $-o$]	OBL _θ	[$+r$, $-o$]
	OBJ	[$-r$, $+o$]	OBJ _θ	[$+r$, $+o$]

The intrinsic role classifications of the argument structure are related to the fully specified grammatical functions by mapping principles (not discussed here), as in (39).

(39)	a-structure	<i>pound</i>	(ag	pt)
				[$-o$]	[$-r$]	
	f-structure			SUBJ	OBJ	

²⁸ This a-structure can be conceived of as an attribute-value matrix (Butt 1998).

For the purposes of this paper, the Mapping Theory can be viewed as analogous to Structural Case in Chomskyan approaches. However, as the identification of grammatical functions is not necessarily tied to position, Mapping Theory can easily deal with free word order languages like Urdu/Hindi.²⁹

The role of case marking with respect to Mapping Theory can vary from language to language. In some languages, case marking and grammatical functions may be one-to-one and onto (English). In languages like Urdu/Hindi, case marking interacts with Mapping Theory in that it provides information that filters out possible linkings. This is shown in section 6. However, we first discuss the three types of case marking that we take to be universally available.

5.2. *Structural Case*

Structural case involves case assigned on the basis of syntactic information. It is usually correlated with grammatical function. It may also be associated with phrase structure position.

Structural case is often an instance of default case and hence functions as the Elsewhere Case (cf. Zaenen, Maling, and Thráinsson's (1985) notion of default vs. lexically stipulated case). For languages which require that all NPs have case, this can be stated as in (40a), analogous to the Case Filter (Rouveret and Vergnaud 1980, Chomsky 1980).

In Urdu/Hindi the nominative is a default case. As such, there are principles which assign nominative case to subjects and objects, as in (40b,c). In languages in which all subjects have nominative case, (40b) would be obligatory; in languages such as Urdu/Hindi, in which there are non-nominative subjects, the default principles are optional and only apply if nothing else assigns case to the subject.

- ‘ (40) a. Wellformedness principle: KP: (?CASE)
- b. Default: ((↑SUBJ CASE)=NOM)
- c. Default: ((↑OBJ CASE)=NOM)

While the identification of grammatical functions is not necessarily tied to positional information within Mapping Theory, some languages may restrict a position to a particular case-marked grammatical function. Thus, non-thematic grammatical relations and their corresponding case marking

²⁹ This avoids the problems encountered by structural definitions of argument structure (i.e., equating deep structure with argument structure) (Rappaport 1983).

may be licensed by structural position (King 1995). We have not found an example of positional case in Urdu/Hindi.³⁰

5.3. Semantic Case

We take semantic case to be the most general type of case marking in Urdu/Hindi. The defining characteristics of semantic case are: (i) predictability via the formulation of generalizations across predicates and constructions; (ii) a subjection to syntactic restrictions (such as only appearing on certain grammatical functions). The association of case morphology with grammatical functions can be restricted by the case markers themselves. This is in line with Nordlinger (1998), who proposes the notion of *constructive case* for Australian languages whereby the case morphology provides information as to grammatical relations.

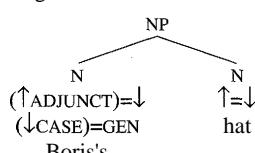
For example, the entry for the Urdu/Hindi ergative *ne* would specify that it can only appear on subjects and that when it appears with transitive perfects, it has no semantic entailments. On the other hand, with intransitive perfects or infinitives, some form of conscious control over the action is entailed. This syntactic and semantic information is part of the lexical entry of the case marker (see section 6.1 for a concrete example) and must be consonant with other information, such as the argument structure (Mapping Theory) and the verbal morphology. This differs from the Chomskyan treatment of morphological case, in which the case marker is an overt spell-out of features determined independently by the syntax or lexical properties of the verb.

5.4. Quirky Case

Finally, quirky case is used only when there is no regularity to be captured: the case assignment is truly exceptional to the system. For example, consider the Urdu/Hindi transitive verb *la* 'bring' in (41). The subject should be ergative since this is a perfect transitive verb. However, it is nominative; this requirement must be stipulated in the lexical entry, as in (42).

³⁰ A canonical example is the assignment of adnominal genitive in English. (See footnote 31 on the notation.)

- (i) English Adnominal Genitives (simplified structure)



THE STATUS OF CASE

- (41) nadya lutab la-yi
Nadya.F.Sg.Nom book.F.Sg.Nom bring-Perf.F.Sg
'Nadya brought a book.'
- (42) *la* ‘bring’ (\uparrow PRED)=⟨ag[–o] th[–r]⟩
 (\uparrow SUBJ CASE) = NOM

Our notion of quirky case is extremely restricted. Quirky case only occurs when no generalizations can be made about the choice of case with the predicate in question. Our approach thus contrasts with Zaenen, Maling, and Thrainsson (1985) and Woolford (1997), where semantic case is treated as lexically inherent or quirky case. Our approach also contrasts with that of Wunderlich and Lakijamper (2001), who employ a notion of semantic case, but who take it to encompass the case markers and prepositions that mark oblique (non-core) arguments and adjuncts. Structural case for them identifies the core grammatical relations subject, object, and indirect object, while semantic case supplements the structurally case marked arguments. In our approach, in contrast, core grammatical relations are identified via Mapping Theory and semantic case interacts with these core grammatical relations.

6. CASE ALTERNATIONS ON SUBJECTS

In this section we focus on the ergative/nominative and ergative/dative case alternations on subjects to show how our view of case interacts with the analysis of a clause. A crucial part of our account is that the case markers contribute to the syntactic and semantic analysis of the clause. That is, the ergative in Urdu/Hindi cannot be analyzed as a case that classifies a language in terms of how it treats its grammatical functions: it is a case marker that is confined to a certain grammatical function (subject), like other case markers, and it has semantic import when viewed in alternation with other cases, as is also the case for datives, accusatives, and instrumentals in Urdu/Hindi.

6.1. Semantic Case

The entries for the Urdu/Hindi ergative *ne* and the dative/accusative *ko* can be encoded as in (43).³¹

³¹ We do not discuss the details of the LFG formalism here; these can be found in Bresnan (2001) and references therein. Basically, the up arrows (\uparrow) encode mappings between nodes of the constituent-structure tree and the functional-structure. The ' \uparrow ' refers to the particular attribute-value matrix (AVM) that the phrase structure node in question corresponds to. So, in the examples in this paper, the ' \uparrow ' usually refers to the functional-structure of the noun phrase containing the case marker. For example, in (47) the ' \uparrow ' refers to the AVM with PRED

- (43) a. ne
 $(\uparrow_{\text{CASE}} \text{ERG})$
 $(\text{SUBJ} \uparrow)$
 $\quad [(\uparrow_{\text{SEM-PROP CONTROL}} = \text{INT})$
 $\quad \quad \vee$
 $\quad ((\text{SUBJ} \uparrow) \text{OBJ})$
 $\quad ((\text{SUBJ} \uparrow) \text{VFORM}) \text{PERF}]$
- b. ko
 $[(\uparrow_{\text{CASE}} = \text{ACC})$
 $(\text{OBJ} \uparrow)$
 $\quad (\uparrow_{\text{SEM-PROP SPECIFIC}} = +)$
 $\quad \vee$
 $\quad (\uparrow_{\text{CASE}} = \text{DAT})$
 $\quad (\text{OBJgo} \uparrow) \vee (\text{SUBJ}_{\text{exp}} \uparrow)$
 $\quad (\uparrow_{\text{SEM-PROP CONTROL}})]$

The entry for the ergative states that a subject is required $((\text{SUBJ} \uparrow))$. This subject can either have the semantic property of internal control $((\uparrow_{\text{SEM-PROP CONTROL}} = \text{INT})$, or if there is an object in the clause $((\text{SUBJ?}) \text{OBJ})$ and the form of the verb is perfect $((\text{SUBJ} \uparrow) \text{VFORM}) \text{PERF}$ (i.e., in the case of a transitive perfect), the semantic entailments are left open. The abstract feature CONTROL INT stands for the connection of the ergative with volitionality and takes into account the more complex picture of ergative usage as described by Bashir (1999) (section 2.1). The skeletal f-structures resulting from the entry for ne are shown in (44).

- (44) a. $\begin{bmatrix} \text{SUBJ} & [\text{CASE} & \text{ERG}] \\ \text{OBJ} & [] \\ \text{VFORM} & \text{PEW} \end{bmatrix}$
- b. $\begin{bmatrix} \text{SUBJ} & \begin{bmatrix} \text{CASE} & \text{ERG} \\ \text{SEM-PROP} & [\text{CONTROL} & \text{INT}] \end{bmatrix} \end{bmatrix}$

Thus, the option in which the ergative is structurally required in transitive verbs with perfect morphology is semantically unmarked. When it is not structurally required, as with the intransitives in (3) or the infinitive construction in (1), the ergative entails that the subject has control over the action.³² The equations ensuring only a compatibility with intransitive perfects and infinitives have been left out in the interests of readability. This

'Ram' in it in (48); thus, the first line of (43) states that this part of the functional-structure contains the pair CASE ERG, as is seen in (48), while the second states that this part of the functional-structure is contained within the SUBJ of the next bigger AVM, as is also seen in (48). The notation $(\text{SUBJ} \uparrow)$ is an instance of inside-out functional uncertainty.

³² The features INT vs. EXTERNAL are proposed in analogy to the distinction made between internal vs. external causation by Levin and Rappaport Hovav (1995).

split in usage is modeled by the disjunction (V) in the entry of the ergative case.

Similarly, *ko* encodes a disjunction between its use as an accusative object marker ((*OBJ*[↑])), where it marks specificity (('T'sEM-PROPSPECIFIC) = +), and its use as a dative, where it marks goals and experiencer subjects³³ ((*OBJ_{go}*[↑]) \vee (*SUBJ_{exp}*[↑])) or modality with respect to the infinitive constructions in (1).³⁴ The corresponding skeletal f-structures are shown in (45).

- (45) a.
$$\left[\begin{array}{ll} \text{OBJ} & \left[\begin{array}{ll} \text{CASE} & \text{ACC} \\ \text{SEM-PROP} & [\text{SPECIFIC } +] \end{array} \right] \end{array} \right]$$
- b.
$$\left[\begin{array}{ll} \text{OBJ}_{go} & \left[\begin{array}{ll} \text{CASE} & \text{DAT} \\ \text{SEM-PROP} & [\text{CONTROL}] \end{array} \right] \\ \text{SEM-} & \end{array} \right]$$
- c.
$$\left[\begin{array}{ll} \text{SUBJ}_{exp} & \left[\begin{array}{ll} \text{CASE} & \text{DAT} \\ \text{SEM-PROP} & [\text{CONTROL}] \end{array} \right] \end{array} \right]$$

This use of features to indicate the semantic contribution of the case marker is intentionally rough. The semantics of the KP is not determined by the case marker alone, but must be evaluated within the context of the utterance and other semantic information in the clause, such as the lexical semantics of the verb, the temporal and aspectual dimensions, etc. This type of precise semantic evaluation is not the domain of the syntax or the morphology. However, the syntax and the morphology must provide relevant information to the semantics. As such, the abstract features encoded in the f-structures can be viewed as instructions to the semantic component. For example, the feature value CONTROL EXTERNAL is a signal that the KP may be subject to external control: the precise modality of this is determined by the semantics.³⁵ In the remaining sections we demonstrate our analysis on various case alternations in Urdu/Hindi.

³³ *SUBJ_{exp}* is an abbreviation used for expository purposes. The *SUBJ* information will be realized as an f-structure attribute, while the *exp* information is relevant to the argument-structure which is not shown here (section 5.1).

³⁴ Our representations would not be crucially different if instead we encoded the accusative-dative split by having two separate entries for *ko*.

³⁵ Similarly, the SPECIFIC + in the entry of the accusative is an indication of the semantic factors that must be considered. The precise semantic interpretation of accusative *ko*, especially as contrasted with the use of nominative objects, remains to be explored. See Dayal (1999) for discussion.

6.2. *Ergative/Nominative*

6.2.1. Intransitive

Consider (46) which shows an alternation with respect to volitionality.

- (46) a. ram $k^h5s\text{-}a$
 Ram.M.Sg.Nom cough-Perf.M.Sg
 'Ram coughed.'
 b. ram=ne $k^h\tilde{a}s\text{-}a$
 Ram.M.Sg=Erg cough-Perf.M.Sg
 'Ram coughed (purposefully).'

Simplified lexical entries for the subject and verb are shown in (47) (e.g., φ-features are omitted). Mapping Theory associates the [-o] agent with a SUBJ.

(47)

ram N	$k^h\tilde{a}s$ v	-a
(↑PRED)=‘Ram’	(↑PRED)=‘cough<ag[-o]>’	(↑TNS-ASP TENSE) = PAST (↑VFORM) = PERF

The entry for the ergative ne given in (43a) allows for the two possibilities in (44). However, only the possibility in (44b) will be well formed for (46b), as (44a) requires the presence of an object. The only well formed f-structure resulting from the combination of the noun ram with the ergative ne is as shown in (48). It has the desired effect that ergative subjects of intransitives entail volitionality.

(48)	$\left[\begin{array}{cc} \text{SUBJ} & \left[\begin{array}{cc} \text{PRED} & \text{'Ram'} \\ \text{CASE} & \text{ERG} \\ \text{SEM-PROP} & [\text{CONTROL} \quad \text{INT}] \end{array} \right] \end{array} \right]$
------	---

Thus, the case marker itself assigns ergative case to its head noun. In addition, it forces its head noun to be a subject in the f-structure and to be compatible with the given semantic interpretation. If it is incompatible with the other requirements listed in the lexical entry, the result is an ill-formed structure.

The entry for $k^h\tilde{a}s\text{-}a$ 'cough' does not specify the ergative in its lexical entry. It is therefore free to occur with a nominative subject as well, as in (46a). This nominative is assigned by default ((40b)).

6.2.2. *Transitive*

Now consider the alternation ergative/nominative in transitive sentences, exemplified by (49). The ergative is required when the verbal morphology is perfect.

- (49) a. ram gaři cala-ta
 Ram.M.Sg.Nom car.M.Sg.Nom drive-Impf.M.Sg
 (he)
 be.Pres.3.Sg
 'Ram drives a car.'
- b. ram=ne gaři cala-yi
 Ram.M.Sg=Erg car.M.Sg.Nom drive-Perf.M.F.Sg
 (he)
 be.Pres.3.Sg
 'Ram has driven a/the car.'

With perfect transitive verbs, only the second disjunct of the ergative entry in (43) comes into play, i.e., in the f-structure in (44a). This disjunct does not include any information about internal or external control, so the semantics of (49b) are left underspecified. The ergative cannot appear in (49a) because the verbal form is not of the right kind for either of the disjuncts to apply (the first disjunct is understood to be constrained to apply only to perfects and infinitives).

6.3. *Ergative/Dative*

Next consider the ergative/dative alternation in the infinitival construction in (50).

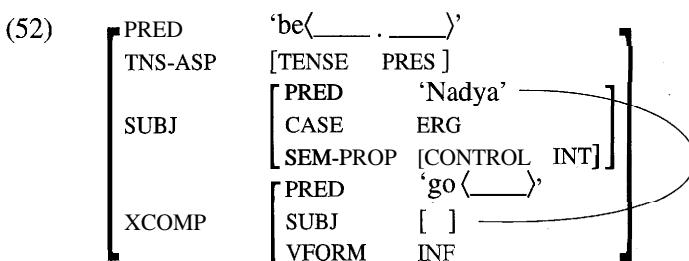
- (50) a. nadya=ne zu ja-na he
 Nadya.F.Sg=Erg zoo.M.Sg.Obl go-Inf.M.Sg be.Pres.3.Sg
 'Nadya wants to go to the zoo.'
- b. nadya=ko zu ja-na he
 Nadya.F.Sg=Dat zoo.M.Sg.Obl go-Inf.M.Sg be.Pres.3.Sg
 'Nadya has to go to the zoo.'

We analyze this construction as an instance of functional control: the verb 'be' acts as a modal which predicates an event of the subject. The subject of the modal controls the PRO subject of the embedded clause. The entry for this form of the verb 'be' is given in (51). Again, the verb makes no direct specifications as to case. It does, however, require that some notion

of CONTROL be involved. Thus, dative and ergative subjects are compatible with this entry, but nothing else.

- (51) *he* (\uparrow PRED)=‘be⟨ag/go[–o], Ev[–r]⟩’
 (\uparrow SUBJ SEM-PROP CONTROL)
 (\uparrow SUBJ)=(\uparrow XCOMP SUBJ)
 (\uparrow TNS-ASP TENSE) = PRES
 (\uparrow XCOMP VFORM) = INF

With respect to the disjunction in the entry of the ergative marker in (43), only one of the possibilities is viable: because the VFORM of the embedded XCOMP is INF, and because the lexical entry of the verb requires the feature SEM-PROP CONTROL, only the first disjunct applies (i.e. the f-structure in (44b)).³⁶ The resulting f-structure analysis is shown in (52).³⁷



Now consider the dative version in (50b). The entry for the dative case in (43b) allows for the three cases in (45). The disjunctions for the marking of object ((OBJ \uparrow)) and indirect object ((OBJ_{go} \uparrow)) will not result in a well formed analysis for (50) as the argument structure of *he* can only be linked to a subject and a clausal complement by the mapping theory. The only viable option is a dative subject ((SUBJ \uparrow)) with the feature SEM-PROP CONTROL. This feature in the f-structure in (53) tells the semantic component that there is something to be said about the control the subject had over the action. Context-dependently this can give rise to a modal interpretation such as \Box 'must' (external control), as in (49b), but it need not.

³⁶ The locative oblique 'zoo', not shown in the f-structure, functions like the ergative and dative case markers in that it is associated with information specifying that it must be an OBJ_{loc}, etc.

³⁷ Event arguments link to an XCOMP or COMP; see Butt (1995) for discussion.

(53)

PRED	'be<_____.____>'	
TNS-ASP	[TENSE PRES]	
SUBJ	PRED 'Nadya'	DAT
	SEM-PROP [CONTROL]	
XCOMP	[PRED 'go <____>' SUBJ []	INF

Recall from Table 3 and section 2.1. that Bashir (1999) found that the use of *ko* in this construction is less marked than the use of the ergative, in the sense that subjects marked with *ko* could also be used when the subject has control over the action, while the ergative is restricted to subjects which have control over the action. We therefore make a difference between the amount of information postulated. In the ergative use, the value of the feature SEM-PROP CONTROL is supplied, in the dative use, only the existence of the feature is asserted: the value is left open. (This can be accomplished via feature indeterminacy (Dalrymple and Kaplan 2000).)³⁸ Again, the dative case marker itself ensures that it appears on a subject and that it contributes the information as to the existence of the CONTROL feature. For analyses of other semantic alternations within this approach, see Butt and King (2001).

7. CONCLUSION

In conclusion, we have argued that case marking has both syntactic and semantic reflexes whose diversity reflects distinctions across verbal classes and constructions. We have presented a view of case which allows case morphology to play an active role in contributing to the grammatical analysis of a clause via a notion of *semantic case*. In addition, we posit *structural* and *quirky* case as further case marking mechanisms which are universally available, but do not require that every language make use of them. In our analysis of the Urdu/Hindi case system, all three types of case assignment work together to characterize the many individual case usages and case alternations.

With regard to the morphosyntactic properties of the Urdu/Hindi case markers, we established that they are clitics: a consideration of both synchronic and diachronic facts points to a distinction between the oblique affix, the case clitics, and the postpositions. These distinctions have been analyzed

³⁸ There are some further interesting cases in which a nominative appears with an infinitive construction: *tufan ane t̪e* 'storms were going to come'. As the translation indicates, these examples involve a temporal interpretation. We would posit a different analysis for these constructions and embed that analysis in a larger picture of case marked infinitives and the use of *vala* 'one' on infinitives to express temporal relations.

as Layer I, II, and III, respectively by Masica (1991). We incorporate the three-way distinction into our formal analysis in terms of oblique marking, case clitics, and postpositions.

A careful examination of the synchronic uses of each of the case markers also showed that the perception of Urdu/Hindi as a tense/aspect split-ergative language is an over-simplification. Instead, all the Urdu/Hindi case markers, including the ergative, function on a par as semantic cases. The ergative, for example, is restricted to subjects and signals that the subject has control over a given action in contexts where it is not structurally required, e.g., infinitives and perfect intransitives. The dative is restricted to subjects and indirect objects and is associated with goals/experiencers. This association gives rise to a modal interpretation in constructions like the infinitive + 'be' one. The ergative/dative alternation in these contexts indicates that the dative and ergative are in a closer structural relationship than previously acknowledged, though historical discussions have postulated a slippery slope between ergative and dative case.³⁹ In our analysis the close relationship between the dative and ergative is rendered by the idea that both the ergative and the dative contribute the feature CONTROL to the semantic component, but that they differ in the realization of this feature.

REFERENCES

- Allen, W.S.: 1951, "A Study in the Analysis of Hindi Sentence-Structure." *Acta Linguistica Hafniensia* 6, 68–86.
- Anderson, Stephen R.: 1977, "On Mechanisms by which Languages Become Ergative." In C. Li (ed.), *Mechanisms of Language Change*, pp. 317–363. Austin, Texas: University of Texas Press.
- Bashir, Elena: 1999, "The Urdu and Hindi Ergative Postposition *ne*: Its Changing Role in the Grammar." In R. Singh (ed.), *The Yearbook of South Asian Languages and Linguistics*, pp. 11–36. New Delhi: Sage Publications.
- Bayer, Josef, Markus Bader, and Michael Meng: 2001, "Morphological Underspecification Meets Oblique Case: Syntactic And Processing Effects in German." *Lingua* 111, 465–514.
- Beames, John: 1872–79, *A Comparative Grammar of the Modern Aryan Languages of India*. Delhi: Munshiram Manoharlal. Republished 1966.
- Beg, Mirza Khalil A.: 1988, *Urdu Grammar: History and Structure*. New Delhi: Bahri Publications.
- Bhatt, Rajesh: 1998, "Complex Predicates as Polarity Items." Talk presented at the Complex PredicatesWorkshop at the Annual Meeting of the DGfS, Halle, March.
- Bittner, Maria and Ken Hale: 1996, "The Structural Determination of Case and Agreement." *Linguistic Inquiry* 27(1), 1–68.
- Bobaljik, Jonathan D.: 1993, "On Ergativity and Ergative Unergatives." *Papers in Case and Agreement II, MIT Working Papers in Linguistics* 19, 45–88.
- Bok-Bennema, Reineke: 1991, *Case and Agreement in Inuit*. Dordrecht: Foris.

³⁹ For example, Beames (1872) and Kellogg (1893) speculate that the origin of the ergative may be traced to a related dative subject construction and Bashir (1999) proposes that the ergative is slowly encroaching on the domain of the dative.

- Bresnan, Joan: 2001, *Lexical-Functional Syntax*. Cambridge, MA: Blackwell.
- Bresnan, Joan and Sam Mchombo: 1995, "The Lexical Integrity Principle: Evidence from Bantu." *Natural Language and Linguistic Theory* 13(2), 181–254.
- Bresnan, Joan and Annie Zaenen: 1990, "Deep Unaccusativity in LFG." In K. Dziwirek, P. Farrel, and E. Mejias-Bekandi (eds.), *Grammatical Relations: A Cross-Theoretical Perspective*, pp. 45–57. Stanford, CA: CSLI Publications.
- Butt, Miriam: 1993, "Object Specificity and Agreement in Hindi/Urdu." In *Papers from the 29th Regional Meeting of the Chicago Linguistic Society*, pp. 80–103.
- Butt, Miriam: 1995, *The Structure of Complex Predicates in Urdu*. Stanford, CA: CSLI Publications.
- Butt, Miriam: 1997, "Aspectual Complex Predicates, Passives and Disposition/Ability." Talk held at the Linguistics Association of Great Britain, Spring Meeting, April. Extensive handout available at <http://ling.uni-konstanz.de/pages/home/butt>.
- Butt, Miriam: 1998, "Constraining Argument Merger through Aspect." In E. Hinrichs, A. Kathol, and T. Nakazawa (eds.), *Syntax and Semantics: Complex Predicates in Nonderivational Syntax*, Volume 30, pp. 73–113. New York, NY: Academic Press.
- Butt, Miriam: 2001a, "A Reexamination of the Accusative to Ergative Shift in Indo-Aryan." In M. Butt and T.H. King (eds.), *Time over Matter: Diachronic Perspectives on Morphosyntax*, pp. 105–141. Stanford, CA: CSLI Publications.
- Butt, Miriam: 2001b, "Case, Agreement, Pronoun Incorporation and Pro-Drop in South Asian Languages." Talk given at the *Workshop The Role of Agreement in Argument Structure*, Utrecht. <http://ling.unikonstanz.de/pages/home/butt>.
- Butt, Miriam, Mary Dalrymple, and Anette Frank: 1997, "An Architecture for Linking Theory in LFG." In M. Butt and T.H. King (eds.), *On-line Proceedings of the LFG97 Conference, San Diego*. Stanford, CA: CSLI Publications. <http://csli-publications.stanford.edu/>.
- Butt, Miriam and Tracy Holloway King: 1991, "Semantic Case in Urdu." In L. Dobrin, L. Nichols, and R. M. Rodriguez (eds.), *Papers from the 27th Regional Meeting of the Chicago Linguistic Society*, pp. 31–45.
- Butt, Miriam and Tracy Holloway King: 1998, Interfacing Phonology with LFG. In M. Butt and T.H. King (eds.), *Proceedings of the LFG98 Conference*. Stanford, CA. CSLI Publications. <http://csli-publications.stanford.edu/>.
- Butt, Miriam and Tracy Holloway King: 2001, "Case Systems: Beyond Structural Distinctions." In E. Brandner and H. Zinsmeister (eds.), *New Perspectives in Case Theory*. Stanford, CA: CSLI Publications. To Appear.
- Butt, Miriam, Tracy Holloway King, María Eugenia Niño, and Frédérique Segond: 1999, *A Grammar Writer's Cookbook*. Stanford, CA: CSLI Publications.
- Chatterji, Suniti Kumar: 1926, *The Origin and Development of the Bengali Literature*, Vol. II. Calcutta: D. Mehra, Rupa & Co. 1975 edition.
- Chomsky, Noam: 1980, "On Binding." *Linguistic Inquiry* 11, 1–46.
- Chomsky, Noam: 1981, *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, Noam: 1995, *The Minimalist Program*. Cambridge, MA: The MIT Press.
- Dalrymple, Mary and Ronald M. Kaplan: 2000, "Feature Indeterminacy and Feature Resolution", *Language* 76, 759–798.
- Dasgupta, Probal, Alan Ford, and Rajendra Singh: 2000, *After Etymology: Towards a Substantivist Linguistics*. Miinchen: LINCOM EUROPA.
- Davison, Alice: 1988, "Constituent Structure and the Realization of Agreement Features." In D. Brentari, G. Larson, and L. MacLeod (eds.), *Papers from the 24th Annual Regional Meeting of the Chicago Linguistic Society, Part Two: Parasession on Agreement in Grammatical Theory*, pp. 41–55.
- Davison, Alice: 1990, "Peculiar Passives." *Language* 56(1), 42–66.
- Davison, Alice: 1991a, "Feature Percolation and Agreement in Hindi-Urdu." Presented at the South Asian Conference, University of Wisconsin, November. Unpublished ms., University of Iowa.

- Davison, Alice: 1991b, "Finiteness and Case in Hindi-Urdu Complements." Paper presented at the Eleventh South Asian Language Analysis Roundtable, University of Illinois, May. Unpublished ms., University of Iowa.
- Davison, Alice: 1998, "Structural Case, Lexical Case and Complex Predicates." *South Asian Language Review* 8.
- Davison, Alice: 1999, "Ergativity: Functional and Formal Issues." In M. Darnell, E. Moravcsik, F. Newmeyer, M. Noonan, and K. Wheatley (eds.), *Functionalism and Formalism in Linguistics, Volume I: General Papers*, pp. 177–208. Amsterdam: John Benjamins.
- Dayal, Veneeta: 1999, "Bare NPs, Reference to Kinds, and Incorporation." In T. Matthews and D. Strolovitch (eds.), *Proceedings of SALT IX*, pp. 34–51. Ithaca, NY: Cornell University.
- de Hoop, Helen: 1992, "Case Configuration and Noun Phrase Interpretation." Doctoral dissertation, Rijksuniversiteit Groningen.
- de Hoop, Helen: 1999, "Optimal Case Assignment." In R. van Bezooijen and R. Kager (eds.), *Linguistics in the Netherlands*, pp. 97–109. Amsterdam: John Benjamins Publishing Company. AVT Publications 16.
- Dixon, R.M.W.: 1994, *Ergativity*. Cambridge: Cambridge University Press.
- Enç, Miirvet: 1991, "The Semantics of Specificity." *Linguistic Inquiry* 22(1), 1–25.
- Fillmore, Charles J.: 1968, "The Case for Case." In E. Bach and R.T. Harms (eds.), *Universals of Linguistic Theory*, pp. 1–88. New York, NY: Holt, Rinehart and Winston.
- Franks, Steven: 2000, "Clitics at the interface." In M. den Dikken and F. Benkema (eds.), *Clinic Phenomena in European Languages*, pp. 1–46. Amsterdam: John Benjamins.
- Glassman, Eugene H.: 1976, *Spoken Urdu*. Lahore: Nirali Kitaben.
- Hale, Kenneth, and Jay Keyser: 1993, "On Argument Structure and the Lexical Expression of Syntactic Relations." In K. Hale and J. Keyser (eds.), *The View from Building 20*, pp. 53–109. Cambridge, MA: The MIT Press.
- Hayes, Bruce: 1990, *Metrical Stress Theory: Principles and Case Studies*. Chicago: The University of Chicago Press.
- Kachru, Yamuna: 1978, "On Ergativity in Selected South Asian Languages." *Studies in the Linguistic Sciences* 8(1), 111–127.
- Kachru, Yamuna: 1987, "Ergativity, Subjecthood and Topicality in Hindi-Urdu" *Lingua* 71, 223–238.
- Kellogg, S.H.: 1893, *Grammar of the Hindi Language*. Delhi: Munshiram Manoharlal Publishers Pvt. Ltd. Second Edition, reprinted 1990.
- King, Tracy Holloway: 1995, *Configuring Topic and Focus in Russian*. Stanford, CA: CSLI Publications.
- Kiparsky, Paul: 1998, "Partitive Case and Aspect." In M. Butt and W. Geuder (eds.), *The Projection of Arguments: Lexical and Compositional Factors*, pp. 265–308. Stanford, CA: CSLI Publications.
- Kiparsky, Paul: 2001, "Structural Case in Finnish." *Lingua* 111, 315–376.
- Krifka, Manfred: 1992, "Thematic Relations as Links between Nominal Reference and Temporal Constitution." In I. Sag and A. Szabolcsi (eds.), *Lexical Matters*, pp. 29–53. Stanford, CA: CSLI Publications.
- Lahiri, Aditi: 2000, "Hierarchical restructuring in the creation of verbal morphology in Bengali and Germanic: Evidence from Phonology." In A. Lahiri (ed.), *Analogy, Levelling, Markedness: Principles of Change in Phonology and Morphology*. Berlin: Mouton de Gruyter.
- Lamontagne, Greg and Lise de Mena Travis: 1986, "The Case Filter and the ECP." *McGill Working Papers in Linguistics* 3(2), 51–75.
- Levin, Beth and Malka Rappaport Hovav: 1995, *Unaccusativity*. Cambridge, MA: The MIT Press.

- Löbel, Elisabeth: 1994, "KP/DP-Syntax: Interactions of Case-Marking with Referential and Nominal Features." *Theoretical Linguistics* 20(1), 37–70.
- Mahajan, Anoop: 1989, "Agreement and Agreement Phrases." *MIT Working Papers in Linguistics* 10, 217–252.
- Mahajan, Anoop: 1990, "The A/A-Bar Distinction and Movement Theory." Doctoral dissertation, Massachusetts Institute of Technology.
- Mahajan, Anoop: 1991, "Citic Doubling, Object Agreement and Specificity." In T. Sherer (ed.), *North Eastern Linguistic Society 21*, pp. 263–277.
- Manaster Ramer, Alexis: 1994, "The Origin of the Term 'Ergative'." *Sprachtypologische Universalien Forschung (STUF)* 47(3), 211–214.
- Manning, Christopher D.: 1996, *Ergativity: Argument Structure and Grammatical Relations*. Stanford, CA: CSLI Publications.
- Masica, Colin: 1991, *The Indo-Aryan Languages*. Cambridge: Cambridge University Press.
- McGregor, R.S.: 1972, *Outline of Hindi Grammar: With Exercises*. Oxford: Clarendon Press.
- Mohanan, Tara: 1994, "Argument Structure in Hindi." Stanford, CA: CSLI Publications.
- Mohanan, Tara: 1995, "Wordhood and Lexicality: Noun Incorporation in Hindi." *Natural Language and Linguistic Theory* 13(1), 75–134.
- Naim, C.M.: 1975, *Introductory Urdu, Volume II*. Chicago: Committee on Southern Asian Studies, University of Chicago.
- Neleman, Ad and Fred Weerman: 1999, *Flexible Syntax: A Theory of Case and Arguments*. Dordrecht: Kluwer.
- Nordlinger, Rachel: 1998, *Constructive Case: Evidence from Australian Languages*. Stanford, CA: CSLI Publications.
- Payne, John: 1995, "Inflecting Prepositions in Indic and Kashmiri." In Frans Plank (ed.), *Double Case*, pp. 283–298. London: Academic Press.
- Plank, Frans: 1995, "Research into Syntactic Change III: Ergativity." In J. Jacobs, A. von Stechow, W. Sternefeld, and T. Vennenmann (eds.), *Syntax: An International Handbook of Contemporary Research*, pp. 1184–1199. Berlin: Walter de Gruyter.
- Platts, John T.: 1967, *A Grammar of the Hindustani or Urdu Language*. Delhi: Munshiram Manoharlal.
- Pott, A.F.: 1873, "Unterschied eines transitiven und intransitiven nominativs." Beiträge zur vergleichenden Sprachforschung auf dem Gebiete der arischen, celtischen und slawischen Sprachen 7, 71–94.
- Ramchand, Gillian: 1997, *Aspect and Predication*. Oxford: Oxford University Press.
- Rappaport, Malka: 1983, "On the Nature of Derived Nominals." In L. Levin, M. Rappaport, and A. Zaenen (eds.), *Papers in Lexical-Functional Grammar*. Bloomington, IN: Indiana University Linguistics Club.
- Ray, Sidney H. and Alfred C. Haddon: 1893, "A Study of the Languages of Torres Straits with Vocabularies and Grammatical Notes, Part I." *Proceedings of the Royal Irish Academy, Third Series II*, 463–616.
- Rouveret, Alain and Jean-Roger Vergnaud: 1980, "Specifying Reference to the Subject." *Linguistic Inquiry* 11, 97–202.
- Sadock, Jerrold: 1991, *Autolexical Syntax*. Chicago: University of Chicago Press.
- Sahoo, Kalyanamalini: 2001, *Oriya Verb Morphology and Complex Verb Constructions*. Doctoral dissertation, Norwegian University of Science and Technology.
- Saksena, Anuradha: 1982, "Case Marking Semantics." *Lingua* 56, 335–343.
- Sen, Subhadra Kumar: 1973, *Proto-New Indo-Aryan*. Calcutta: Eastern Publishers.
- Sharma, Devyani: 2003, "Nominal Clitics and Constructive Morphology in Hindi." In M. Butt and T.H. King (eds.), *Nominals: Inside and Out*, pp. 59–84. Stanford, CA: CSLI Publications.
- Singh, Mona: 1994, *Perfectivity, Definiteness and Specificity: A Classification of Verbal Predicates in Hindi*. Doctoral dissertation, The University of Texas at Austin.

- Subbarao, K.V.: 2001, "Agreement in South Asian Languages and Minimalist Inquiries: The Framework." In Peri Bhaskararao and K.V. Subbarao (eds.), *The Yearbook of South Asian Languages and Linguistics 2001: Tokyo Symposium on South Asian Languages Contact, Convergence and Typology*, pp. 457–492..
- Tuite, Kevin, Asif Agha, and Randolph Graczyk: 1985, "Agentivity, Transitivity, and the Question of Active Typology." In W. Eilfort, P. Kroeker, and K. Peterson (eds.), *Papers from the Parasession on Causatives and Agentivity at the 21st Regional Meeting of the Chicago Linguistic Society*, pp. 252–270.
- Vainikka, Anne: 1993, "The Three Structural Cases in Finnish." In A. Holmberg and U. Nikanne (eds.), *Case and Other Functional Categories in Finnish Syntax*, pp. 129–159. Berlin: Mouton de Gruyter.
- Van Olphen, Herman: 1980, *First-Year Hindi Course*. Austin, TX: Department of Oriental and African Languages and Literatures, University of Texas, Austin.
- Verkuyl, Henk: 1993, *A Theory of Aspectuality*. Cambridge: Cambridge University Press.
- Verma, M.K. and K.P. Mohanan (ed.): 1990, *Experiencer Subjects in South Asian Languages*. Stanford, CA: CSLI Publications.
- Verma, M.K.: 1971, *The Structure of the Noun Phrase in English and Hindi*. Delhi: Motilal Barnasidass.
- Wierzbicka, Anna: 1981, "Case Marking and Human Nature." *Australian Journal of Linguistics* 1, 43–80.
- Woolford, Ellen: 1997, "Four-Way Case Systems: Ergative, Nominative, Objective and Accusative." *Natural Language and Linguistic Theory* 15, 181–227.
- Wunderlich, Dieter: 1997, "Cause and the Structure of Verbs." *Linguistic Inquiry* 28(1), 27–68.
- Wunderlich, Dieter and Renate Lakiaamper: 2001, "On the Interaction of Structural and Semantic Case." *Lingua*, Special issue, *On the Effects of Morphological Case* 3, 377–418.
- Zaenen, Annie, Joan Maling, and H. Thráinsson: 1985, "Case and Grammatical Functions: The Icelandic Passive." *Natural Language and Linguistic Theory* 3, 441–483.

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