

Typological Variation in the Ergative Morphology of Indo-Aryan Languages

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[To appear in *Linguistic Typology*, final draft: 5 October 2006]

Abstract

While New Indo-Aryan languages are a common example of morphological ergativity, the range of variation in ergative marking and agreement among these languages has not been examined in detail. The goals of this paper are twofold. We first present a typology of ergative marking and agreement in Indo-Aryan languages, demonstrating that a progressive loss of ergative marking has occurred to varying degrees in different systems. This process is manifested in two distinct strategies of markedness reduction: loss of overt subject marking in the nominal domain and loss of marked agreement in the verbal domain. Using the framework of Optimality Theory (OT; Prince & Smolensky 1993), we account for the typology in terms of universal subhierarchies of markedness (Aissen 1999; Woolford 2001). Extending the analysis to dialect variation in one language, Marathi, we show that the dialect typology parallels the cross-linguistic typology, but only within the range permitted by changes already present in the parent language (Old Marathi). Furthermore, the dialect typology includes additional hybrid case-agreement systems predicted by our analysis.

Keywords: Indo-Aryan languages, typology, ergativity, agreement, Optimality Theory

1 Introduction

New Indo-Aryan (NIA) languages are frequently cited as an example of morphological ergativity. A less commonly noted fact is that ergative marking and agreement patterns are not uniform across these languages. The overt expression of ergative case marking occurs to varying degrees in NIA nominal paradigms; variation is also observable in the ways in which agreement morphology cross-references arguments. Furthermore, the languages which share ergative case-marking patterns do not necessarily share agreement marking patterns, resulting in an intricate cross-classification across systems.

This study first presents the range of variation in ergative case marking and agreement in major NIA languages (Hindi, Nepali, Gujarati, Marathi, and Bengali). We then derive the distinct systems as consequences of strategies to reduce certain morpho-syntactically marked features of the ergative construction, both within the nominal and

verbal domains. Following this, we discuss dialect variation within one of these languages, Marathi. The dialect data strengthen the hypothesis that patterns of dialect variation mirror cross-linguistic variation (Bresnan & Deo 2001). Our analysis demonstrates that the range evident across the language and dialect systems does not reflect unsystematic ergative marking and agreement properties, but rather derives from the influence of universal constraints on subject marking and agreement.

The analysis is framed in Optimality Theory (OT) and employs language-particular rankings of universal constraints (Prince & Smolensky 1993; Aissen 1999) which allow an interaction of nominal marking, verbal inflection, and universal markedness to derive distinct systems. We argue that both loss of overt marking of ergative subjects and loss of agreement with objects constitute strategies for markedness reduction in ergative clauses.

In Section 2, we lay out the historical emergence of morphological ergativity in Indo-Aryan (IA) languages, and present certain marked features of the Middle Indo-Aryan (MIA) ergative construction. Following this, in Section 3, the five major NIA subject-marking and agreement systems are presented, and are briefly summarized in a cross-classification in Section 4. We present the OT analysis in Section 5 and Section 6. This analysis is then extended to Marathi dialect variation in Section 7–Section 9 to demonstrate the similarities in the typological distribution of systems within a language and across languages.

2 The Ergative construction in Indo-Aryan languages

2.1 Ergativity and the domain of the present study

Ergativity has standardly been conceived of as follows:

- (1) a. A grammatical pattern or process shows ergative alignment if it identifies intransitive subjects (S_i) and transitive direct objects (dO) as opposed to transitive subjects (S_t).
- b. It shows accusative alignment if it identifies S_i and S_t as opposed to dO. (Plank 1979)

Split-ergativity refers to the occurrence of ergative marking only in certain syntactic-semantic configurations, for instance with high animacy objects or in the perfective aspect. The latter type is found in NIA languages. In the perfective aspect,¹ subjects of

¹The perfective morphology in NIA languages derives historically from a stative participle marking the perfect aspect (Bloch 1965; Masica 1991). The diachronic shift from perfect to perfective/past semantics is well-documented (Comrie 1978; Bybee et al 1994). What we will refer to as the perfective form is used to mark perfective aspect and the perfect aspect (in conjunction with tense auxiliaries.)

transitive clauses bear ergative morphology, while direct objects and subjects of intransitive clauses are nominative.²

In this paper, we restrict ourselves to the patterns of variation found in transitive, perfective clauses. IA languages do not show as much variation in intransitive, perfective clauses or in non-perfective clauses. In most clauses of these types, the highest grammatical function is marked nominative and is cross-referenced with verbal agreement. It is crucially in the ergative clause that we argue that morphological marking and syntactic prominence are not aligned, and the variation evident in these languages reflects strategies to render this construction less marked.

Note that we do not assume that the ergative clause is marked in all respects: we focus here on the morphosyntactic markedness of a misalignment between morphological case, agreement, and grammatical function. As we discuss in Section 2.3, the ergative clause is also *unmarked* with respect to the alignment of thematic role and grammatical function. Thus, although the ergative marking system may disappear in some languages, such as Bengali, it can also spread beyond the perfective clause, e.g. in Nepali and Assamese. In some of these cases, there appears to be a preference for having the same system (whether accusative or ergative) across both perfective and non-perfective clauses. This paper is limited to the reduction of particular types of morphosyntactic markedness arising from ergative subject marking.

2.2 The emergence of the ergative clause in Indo-Aryan

Hindi, Nepali, Gujarati, Marathi, and Bengali, the NIA languages discussed in this paper, derive from a common Old Indo-Aryan (OIA) ancestor, Sanskrit (or a related dialect). The typology we are considering is thus one of genetically related languages, all of which inherited morphological ergativity from MIA dialect variants of Sanskrit.

The table in (2) gives an overview of the approximate periods and languages associated with NIA, MIA, and OIA.³ The three periods are characterised by distinctions in the marking of the perfect construction that bear on the present typology.

(2) Chronology of the Indo-Aryan Languages

²This simple definition covers canonical transitive and intransitive clauses. Ergative-marking is also affected by further properties of events (volitional vs. nonvolitional, agent-controlled vs. non-agent-controlled) and of arguments (animacy) (Mohanani 1994, Butt 2001). While each property is not discussed in detail here, our approach incorporates these factors.

³It must be noted that none of these languages can be regarded as directly descending from an earlier stage. For example, it has been suggested that Classical Sanskrit does not directly descend from Vedic, but rather another dialect, contemporaneous with the Vedic language. The hypothesis that Sanskrit was the direct and immediate ancestor of Prakrit and Pali has also been questioned (Bloch 1965; Pischel 1981; Masica 1991).

Period	Language examples	Stage
1200 BCE - 600 BCE	Vedic	Old Indo-Aryan (OIA)
600 BCE - 200 CE	Epic and Classical Sanskrit	
200 BCE - 700 CE	Pali and Prakrit languages	Middle Indo-Aryan (MIA)
700 CE - 1100 CE	Apabhramśa	
1000 CE-	Nepali, Marathi, Hindi Gujarati, Bengali	New Indo-Aryan (NIA)

Aspect-based split ergativity in the IA languages has been described as a case of passive-to-ergative reanalysis (Hook 1992; Dixon 1994; Peterson 1998). The process may be outlined as follows: OIA did not have an active, ergative construction. The original construction that gave rise to the ergative clause in the NIA languages was, in OIA, a passive, periphrastic perfect construction involving the use of a non-finite form of the verb (a deverbal stative participle marking perfect aspect).⁴ This construction was one of several devices for expressing both perfect and perfective aspect in OIA. The rich tense-aspect system of OIA underwent a radical process of simplification in MIA (Pischel 1981). Most inflectional forms such as the aorist and the inflectional perfect were lost and by late MIA even the non-perfect inflectional past tense form had disappeared.⁵ The periphrastic passive construction survived and became the only means of describing events occurring in the past time. This loss of the inflectional system has often been cited as a reason for the increase in the frequency and scope of the passive construction, which in turn led to the unmarking of the passive voice of the construction, and resulted in an active, ergative clause in late MIA (Hock 1986; Bubenik 1998). As a consequence, NIA languages show morphological ergativity based on an aspectual split.

2.3 Markedness of the ergative construction

In the IA type of diachronic shift, the agent, or the logical subject, which is an oblique grammatical function in the passive construction, comes to be reinterpreted as the grammatical subject while retaining its oblique morphology. The patient-like role, originally mapped onto the subject function in the passive, loses its grammatical subjecthood and is mapped onto the object function. The resulting ergative construction has the properties listed in (3).⁶

⁴This morphological form is also referred to as the past passive participle or the *-ta-* participle with an Indo-European ancestor in *-to-* (Hock 1986; Klaiman 1978).

⁵Traditional grammarians do provide instances of the inflectional perfect and the aorist during this period, but they only occur as isolated, unanalyzed forms for a few verbs like *āha*-‘say-AOR’ and *akāshi*-‘do-AOR’.

⁶There is some debate on whether ergative properties were a MIA innovation or were already present in the passive-like construction in Sanskrit. Hock (1986) and Butt (2001) argue that the Sanskrit construction is already ergative, while Andersen (1986) and Bubenik (1996, 1998) suggest that the construction gradually gets reanalyzed as an ergative structure in MIA. We remain agnostic on this issue, asserting only that *when* the passive structure gets reanalyzed as an ergative structure, the properties given in (3) hold.

- (3) a. The agent, marked in the instrumental case, showed subject properties.
- b. The object of transitive clauses and the subject of intransitive clauses showed nominative case marking.
- c. The verb, based on the earlier passive participle, showed gender and number agreement with the nominative object.
- d. In intransitive clauses, the verb agreed in number and gender with the sole argument of the clause.

From the point of view of markedness theory (Greenberg 1966; Estival and Myhill 1988; Comrie 1989; Battistella 1990; Croft 1990), the reanalysis of the passive clause as an active, ergative clause can be understood as the emergence of an unmarked alignment of agents with subjecthood. In OT terms, this process can be understood as the overriding of faithfulness constraints on discourse prominence by faithfulness constraints on thematic role. Legendre et al. (1993:472) offer a precise formulation of this trade-off. In their analysis, passive voice arises due to a high ranked constraint requiring 'high-prominence' arguments (rather than agentive arguments) to bear subject case. The reanalysis of a passive construction as an ergative construction involves the promotion of constraints aligning agents (rather than prominent arguments) with subject case instead.

Crucially, while this reanalysis reduces markedness in one domain, the resulting active, ergative clause is morpho-syntactically marked in certain respects.⁷ First, assuming a prominence scale of SUBJECT > OBJECT > NON-CORE FUNCTION (Aissen 1999), the MIA ergative construction is marked in that the least marked function (subject) is expressed by a morphologically more marked case (ergative), while the more marked function (object) is expressed by the unmarked (nominative) case.

Second, agreement generally indexes the least marked grammatical function, and subject agreement is the most commonly attested pattern; however, in the ergative construction, agreement is with the object.

Third, the MIA construction lacks object marking.⁸

This paper focuses on the first two domains of marked morpho-syntax — subject case marking and agreement. We examine variation in ergative marking and agreement patterns in five types of IA languages and analyze the continuum of systems as indicative of two types of markedness reduction strategies:

- (4) a. reduction of markedness in ergative subject marking;

⁷In this discussion, we consider the surface realization of marked and unmarked values in terms of zero and non-zero morphemes (Greenberg 1966); here, this applies to overt case and agreement marking.

⁸OIA nominative and accusative cases became syncretized in MIA leaving an absolutive case for both subject and object marking (Bubenik 1998).

b. reduction of markedness in the agreement pattern.⁹

With respect to lack of direct object marking, modern NIA languages have subsequently developed variable case-marking for direct objects in transitive, perfective clauses. Accusative case marking on objects — determined by definiteness, specificity, and animacy factors — appears to have developed in the non-perfective aspects and subsequently spread to the ergative construction in the perfective. Aissen’s (2003) OT analysis of differential object marking (DOM) can be applied to the NIA case, and although we do not include an examination of the development of object marking in this paper, we consider it a third markedness reduction strategy in addition to the two proposed here.

3 The typology of variation in NIA

3.1 Patterns of ergative marking and agreement

In this section, we present the patterns of ergative marking and agreement found in several major NIA languages: Hindi, Nepali, Gujarati, Marathi, and Bengali. The array of data presented in this section and summarized in Table 1 illustrates two crucial points. First, languages have reduced the original MIA pattern of perfective subject marking to differing degrees but following the same path (the languages are presented in order of decreasing overt subject marking). Second, the agreement pattern of each language is related to, but crucially *not* fully determined by, the subject-marking pattern.

LANGUAGE	ERG MARKING	AGREEMENT	AGR. FEATURES
Hindi	1sg, 2sg, 3sg, 1pl, 2pl, 3pl	nom S, nom O (when S is non-nom)	gender, number
Nepali	1sg, 2sg, 3sg, 1pl, 2pl, 3pl	nom and erg S	person, number
Gujarati	1sg, 2sg, 3sg, 3pl	nom S, nom and acc O (when S is non-nom)	gender, number
Marathi	3sg, 3pl	nom S, nom O (when S is non-nom)	gender, number, person
Bengali	none	nom S	person, number

Table 1: Subject marking and agreement in perfective clauses

⁹Throughout this paper, we look at agreement as a device that indexes *any* grammatical properties of NPs on the verb. The languages represented here show differences in the specific grammatical properties of the NPs that are indexed by the perfective form of the verb, as shown in the table in (3.1). The agreement features listed for the languages in (3.1) are restricted to those features that appear on the main verb inflected for the perfective aspect. Auxiliaries in most of the languages discussed here agree in person and number features as do main verbs in other tense-aspect configurations.

The systems in Table 1 occur in a large number of languages in the IA family. Systems are most commonly shared by geographically contiguous languages; however, some languages spoken in non-contiguous areas have also developed identical systems. Table 2 gives examples of both contiguous and non-contiguous languages that share each major pattern being discussed (Grierson 1905; Masica 1991); a language which shares a major pattern with one of the five main languages but is non-contiguous with it is shown in boldface. While geographical clustering is of dialectological and diachronic interest, it does not constitute the focus of this study, which is primarily concerned with a structural characterisation of the typology, regardless of geographical contiguity.

SAMPLE LANGUAGE	AREA	SAMPLE SHARED SYSTEMS	AREA
HINDI	Delhi	Bundeli	Uttar Pradesh
		Haryanvi	Haryana
NEPALI	Nepal	Assamese	Assam
		Gawar-bati	NW Pakistan
GUJARATI	Gujarat	Rajasthani	Rajasthan
		Konkaṇi	Goa
MARATHI	Maharashtra	Punjabi	Punjab
BENGALI	West Bengal	Oriya	Orissa
		Sinhalese	Sri Lanka

Table 2: Parallels in other Indo-Aryan languages

In the remainder of this section we present details of ergative marking and verbal agreement in each of the five major systems. We discuss these systems in terms of loss of overt ergative marking on subjects (Stump 1983), because each language derives from a MIA stage that was characterized by overt ergative case marking on all pronominal and nominal subjects of transitive, perfective clauses (see the following sources for details on early ergative stages in each language: Beames 1966 (Hindi); Wallace 1982 (Nepali); Bhayani 1988 (Gujarati); Tulpule 1960 (Marathi); Chatterji 1926 (Bengali).)

3.2 Hindi

In Hindi, the subject of a transitive perfective clause is morphologically marked with the ergative case clitic *-ne* in all persons and numbers. In (5) and in all of the paradigm tables that follow, the forms that are in boldface represent overt case marking. (5) lists pronominal forms; this pattern of *-ne* cliticization also holds for nominal marking.

(5)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	maĩ	ham
Perf	1	mai-ne	ham-ne
Non-perf	2	tum	āp
Perf	2	tum-ne	āp-ne
Non-perf	3	vah	ve
Perf	3-pro	us-ne	unho-ne

Agreement in Hindi is governed by the following rule, from Mohanan (1994:105):

- (6) The verb agrees with the highest thematic ARG[UMENT] associated with the NOM[INATIVE] case.

The data in (7) illustrate this agreement system.

- (7) a. *sita* *rām-ko* *dekh-t-ī* *h-ai*
 Sita.F.NOM Rām.M-ACC see-IMPFF-F.SG be-PRES.3SG
 ‘Sita sees Ram.’
- b. *rām-ne* *chīḍiyā* *dekh-ī*
 Rām.M-ERG bird.F.NOM see-PERF.F.SG
 ‘Ram saw a sparrow.’
- c. *sita-ne* *radha-ko* *dekh-ā*
 Sita.F-ERG Radha.F-ACC see-PERF.M.SG
 ‘Sita saw Radha.’

(7a) shows a non-perfective clause, in which the verb agrees with the nominative subject. In (7b), the verb agrees with the nominative object, because it is the highest thematic argument with nominative marking. The verb may not agree with the ergative marked subject. The verb in (7c), on the other hand, shows default masculine singular agreement when the object is accusative. Case marking on both arguments prevents the application of (6), resulting in default agreement.

3.3 Nepali

Nepali, like Hindi, has ergative marking on the subject in all three persons. The paradigm of Nepali pronominal forms for nominative and ergative cases is given in (8); nominal marking follows the same pattern of *-le* cliticization.

(8)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	ma	hāmī
Perf	1	mai-le	hāmī-le
Non-perf	2	ta	timī
Perf	2	tai-le	timī-le
Non-perf	3	ū	unī
Perf	3	usu-le	un-le

Nepali does not follow the Hindi agreement principle described in (6). The transitive verb in Nepali uniformly agrees in person and number with subjects, whether nominative or ergative marked. In (9), we compare an intransitive clause with a nominative subject and a transitive clause with an ergative subject.

- (9) a. *ma bas-en*
 I.NOM sit-PERF.1SG
 ‘I sat.’
- b. *mai-le mero lugā dho-en*
 I-ERG my clothes.NOM wash-PERF.1SG
 ‘I washed my clothes.’

(9) shows that the verb takes the same inflection whether the clause has a nominative subject or an ergative subject. The object in (9b) does not trigger agreement despite being nominative, indicating that Nepali agreement is determined by subjecthood rather than overt case-marking.

3.4 Regeneration of ergative marking

Before examining further NIA patterns, it is worth noting one additional characteristic of Hindi and Nepali. These two languages have case-marking systems in which ergative case-marked NPs are morphologically distinct from nominative NPs in all persons and numbers. This pattern might appear to be identical to the original MIA pattern of overt ergative marking in all nominal classes. However, the MIA ergative case was realized by a varied set of inflectional affixes, whereas in Hindi and Nepali ergative case is realized by a single case clitic (*-ne* or *-le*) that attaches to the head of a noun phrase. This is because Hindi and Nepali lost the older inflectional morphology and then subsequently regenerated the ergative system with new morphology. The remaining languages in our typology show intermediate stages of loss of the older MIA-type ergative morphology and incorporation of new clitics into the ergative case paradigm.

It is beyond the scope of this paper to trace the precise diachronic path of the loss of the older ergative morphology and the accretion of the clitic into the ergative system of IA (see Beames (1966: 266-70) and Butt (2001) for details). This paper is concerned

with the abstract systems of differentiation in synchronic NIA nominal case paradigms, and from that perspective the ergative subject marking pattern of Hindi and Nepali parallels the MIA ergative pattern.¹⁰

3.5 Gujarati

Gujarati also shows subject marking in all three persons, but only in the singular. The paradigm for Gujarati pronominal subject marking is given in (10); the examples in (11) illustrate NP subject marking.

(10)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	hũ	ame
Perf	1	meñ	ame
Non-perf	2	tu	tame
Perf	2	teñ	tame
Non-perf	3	te	teo
Perf	3	teṇe	teoe

The notable feature of the Gujarati nominal paradigm is the morphological syncretism of nominative and ergative in first and second person plural subjects. In other words, overt ergative marking has only been lost in a small part of the paradigm.

The other manner in which Gujarati differs from most other IA languages is in its object agreement pattern. In Gujarati, the verb never agrees with an overtly marked or unmarked ergative subject of a perfective clause. But, in these transitive perfective clauses, the verb agrees in number and gender with the object, irrespective of whether it is in the nominative or the accusative case. This is seen in (11), adapted from Mistry (1997).

- (11) a. *sita-e kāgal vāc-yo*
 Sita.F-ERG letter.M.NOM read-PERF.M.SG
 ‘Sita read the letter.’
- b. *sita-e raj-ne pajav-yo*
 Sita.F-ERG Raj.M-ACC harass-PERF.M.SG
 ‘Sita harassed Raj.’
- c. *raj-e sita-ne pajav-i*
 Raj.M-ERG Sita.F-ACC harass-PERF.F.SG
 ‘Rāj harassed Sita.’

In (11b), the animate object *Raj* is case-marked but the verb still agrees with it, as

¹⁰In terms of our analysis, regeneration of an ergative system in this manner is assumed to arise out of a (re-)promotion of the two constraints discussed later in (20) and (21).

indicated by the masculine agreement (Gujarati has three genders and the default gender agreement is neuter). Similarly, in (11c), the verb agrees with the feminine object, *Sita*.

In this system, overt case marking affects agreement patterns differentially. The verb may not agree with ergative marked subjects but may agree with accusative marked objects. This contrasts with the Hindi system, which shows default agreement if there is no nominative argument in the clause.

3.6 Marathi

In Marathi, overt ergative marking has been reduced to a greater extent than in Gujarati. While in Gujarati first and second person plural pronouns in the ergative case bear no overt case marker, in Marathi none of the first and second person ergative pronouns are overtly case-marked. The paradigm for Marathi nominative and ergative pronouns is shown in (12).

(12)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	mī	āmhī
Perf	1	mī	āmhī
Non-perf	2	tū	tumhī
Perf	2	tū	tumhī
Non-perf	3	to/tī/te	te
Perf	3	tyā-ne, ti-ne	tyā-nī

The agreement pattern of Marathi is identical to Hindi. In spite of non-overt case marking, first and second person (or local person)¹¹ pronouns in transitive, perfective clauses behave like ergatives, not nominatives. The verb does not agree with these subjects even though it does with morphologically identical nominative local subjects of non-perfective clauses. This is seen the Marathi examples in (13).

- (13) a. *mī sita-lā bagh-to*
 I.M.NOM Sita.F-ACC see-PRES.M.SG
 ‘I see Sita.’
- b. *mī ek chimṇī baghit-lī*
 I.M.ERG one sparrow.F.NOM see-PERF.F.SG
 ‘I saw a sparrow.’
- c. *mī sita-lā baghit-la*
 I.M.ERG Sita.F-ACC see-PERF.N.SG
 ‘I saw Sita.’

¹¹Following Aissen (1999), we use the term local person to denote the combined category of first and second person.

In (13a), the subject is a nominative subject in a non-perfective clause and the verb agrees with it. In the perfective clause in (13b), the verb agrees with the nominative object, as in Hindi, even though the first-person subject *mī* does not show overt case marking. In (13c), the verb shows default neuter agreement because of overt accusative marking on the object.

Further evidence of the lack of nominative-like behaviour of these subjects comes from the case assigned to their modifiers, as demonstrated in (14).

- (14) a. *mī* *ek āmbā* *khā-llā*
 I.F.ERG one mango.M.NOM eat-PERF.M.3SG
 ‘I ate a mango.’
- b. *ved-yā* *ash-ā* *mī* *ek āmbā* *khā-llā*
 foolish-OBL like-OBL I.F.ERG one mango.M.NOM eat-PERF.M.3SG
 ‘Foolish me ate a mango.’
- c. *vedī* *ashī* *mī* *ek āmbā* *khā-te*
 foolish-F.NOM like-F.NOM I.F.NOM one mango-M.NOM eat-PRES.F.SG
 ‘Foolish me eats a mango.’

Noun modifiers in Marathi are marked in the oblique case whenever they occur with non-nominative nominal heads. In (14b), the adjectival modifier of the perfective, transitive subject occurs in the oblique case. By contrast, the same modifier takes the nominative form when modifying a non-perfective subject in (14c). Thus, the apparently nominative surface form *mī* shows non-nominative agreement and modifier behavior when it is the subject of a transitive, perfective clause, suggesting that local person subjects in transitive, perfective clauses bear abstract ergative case without overt ergative marking.

3.7 Bengali

Bengali represents the most complete loss of ergative marking of all the major NIA systems. As with older stages of all the other languages, Old Bengali had an ergative construction in the perfective aspect (Chatterjee 1926:947-8), which showed properties similar to the MIA ergative clause. Modern Bengali has lost this pattern and uses the same pronominal forms to mark all subjects of perfective and non-perfective clauses, as shown in (15).

(15)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	āmi	āmrā
Perf	1	āmi	āmrā
Non-perf	2	tui, tumī	torā
Perf	2	tui, tumī	torā
Non-perf	3	o	orā
Perf	3	o	orā

Moreover, in contrast to overtly unmarked local person ergative subjects in Marathi, Bengali unmarked subjects must be analyzed as nominative arguments based on their agreement pattern.

- (16) a. *āmī sita-ke dekh-chī*
 I.NOM Sita.F-ACC see-PRES.1SG
 ‘I see Sita.’
- b. *āmī sita-ke dekh-lām*
 I.NOM Sita.F-ACC see-PERF.1SG
 ‘I saw Sita.’
- c. *anu sita-ke dekh-lo*
 Anu.F.NOM Sita.F-ACC see-PERF.3SG
 ‘Anu saw Sita.’

In both (16b) and (16c), the verb agrees with the subject in person, just as it does in the non-perfective clause in (16a). The verb thus maintains a nominative-accusative system of case and agreement in all tenses and aspects. The complete loss of ergative marking in Bengali correlates with subject agreement.¹²

4 Cross-classification of the Indo-Aryan languages

4.1 Subject marking

Summarizing the data so far, we find that the five languages can be classified in different ways according to their ergative subject marking and agreement patterns.

Table 3 classifies the languages according to morphological marking of subjects in transitive, perfective clauses. Hindi and Nepali share the pattern of overt ergative case in all persons. In Marathi there is no overt marking on first and second person subjects.

¹²Chatterji (1926:971-2) argues, based on comparative reconstruction, that loss of ergative marking chronologically preceded the innovated subject agreement morphology in Bengali. He traces the loss of ergative subject marking to the Middle Indo-Aryan Māgadhī Apabhraṃśa, which underlies the system of Old Bengali. By contrast, data from Middle Bengali literature and modern non-standard Bengali dialects in his discussion demonstrate the relative recency of the origin of subject agreement morphology.

Gujarati shares this absence of local person marking, but only for some *plural* subjects of perfective clauses. Finally, Bengali has no ergative case on any subjects in perfective clauses.

The table demonstrates several stages of loss of ergative subject marking proceeding in a single direction along the dimension of person and, to a lesser extent, number. There are no systems in this typology in which only first or second person subjects in perfective clauses are marked, but third person subjects are not; similarly, we know of no IA languages in which plural ergative subjects are overtly marked but singular ergative subjects are not.

SUBJECT	HINDI	NEPALI	GUJARATI	MARATHI	BENGALI
1st SG	✓	✓	✓	∅	∅
1st PL	✓	✓	∅	∅	∅
2nd SG	✓	✓	✓	∅	∅
2nd PL	✓	✓	∅	∅	∅
3rd SG	✓	✓	✓	✓	∅
3rd PL	✓	✓	✓	✓	∅

Table 3: Overt subject marking in transitive perfective clauses

4.2 Agreement marking typology

Table 4 classifies the languages according to agreement marking on the verb. The first two rows list whether nominative or ergative subjects occur in transitive, perfective clauses in a given language, and if they do, whether agreement with that subject occurs. The next two rows show the same information for object agreement. A "–" denotes absence of a given type of subject or object in perfective transitive clauses and a "∅" denotes lack of agreement.

AGREEMENT	GUJARATI	MARATHI	HINDI	NEPALI	BENGALI
Nominative Subject	–	–	–	–	✓
Ergative Subject	∅	∅	∅	✓	–
Nominative Object	✓	✓	✓	∅	∅
Accusative Object	✓	∅	∅	∅	∅

Table 4: Agreement in transitive perfective clauses

There are two important points to observe here. First, the diversity in systems is greater than is often assumed for IA languages. Agreement cannot simply be described as indexing the non-case-marked (nominative) argument. The typology shows instances of agreement with case-marked arguments (Gujarati objects and Nepali subjects) as well as

lack of agreement with non-case-marked arguments (certain Gujarati and Marathi local subjects). Second, there are clear typological asymmetries in the data. For instance, we never find a system in which the verb agrees with a non-nominative object when a nominative subject is available, but we do find agreement with non-nominative subjects when a nominative object is available.

It should be clear from Tables 3 and 4 that the languages which group together with respect to subject case marking are not necessarily the ones that share agreement properties. For example, Hindi and Marathi do not share subject marking systems in Table 3, but they do share the the nominative object agreement pattern in Table 4. Conversely, Gujarati groups with Hindi in terms of subject case marking, but not in terms of object agreement. Finally, Nepali and Bengali have different subject marking patterns, but the same subject agreement pattern.

While details of individual case and agreement patterns have been noted in previous research, a synthesis of these systems into this diverse, yet structured, typology has not been adequately considered. Any treatment of this complex typology requires a theory to allow fairly diverse phenomena on the one hand (e.g. agreement with case-marked arguments, or lack of agreement with non-case-marked subjects) and, on the other, to rule out unattested systems (e.g. only first person ergative marking, or only agreement with non-nominative objects). In the analysis that follows in Section 5 and Section 6, we present a set of constraints to generate a diverse yet appropriately restricted typology.

4.3 Semantic subject cases

The discussion in this paper will be limited to ergative case and agreement facts, and cannot fully address the complexities of other types of subject case-marking in IA languages. However, before turning to the analysis, we briefly discuss other non-nominative (oblique) cases that can occur with subjects in NIA languages in order to show that their interaction with agreement is distinct from the behaviour of ergative subjects.

Oblique arguments that are higher on the thematic hierarchy (experiencers, goals, and possessors) have been argued to pattern like subjects in terms of their syntactic properties in IA languages (Mohanani & Verma 1990; Joshi 1993; Mohanani 1994; Mistry 1997). These arguments may be marked in the instrumental, dative, possessive, or locative cases. In the literature on IA, ergative and other oblique subjects have largely received a parallel treatment (Mohanani 1994; Mahajan 2004). However, there are clear points of distinction between ergative and other oblique subjects with respect to coding properties, which suggest that ergative marked subjects must be distinguished from other case-marked subjects:

- i. Unlike ergative subjects, oblique subjects in Nepali do not co-occur with subject agreement on the verb.
- ii. In clauses with non-ergative oblique subjects, the other argument of the clause is obligatorily expressed in the nominative case. Unlike the ergative-accusative pat-

terning seen in all the languages of the typology presented here, dative-accusative or genitive-accusative case arrays in a single clause are ungrammatical in all the languages in question.

- iii. Ergative case on subjects may be morphologically null, as in Marathi and Gujarati. By contrast, we have found no instances of dative, genitive, or locative subjects with zero morphology.

These differences between ergative and other oblique subjects can be illustrated with examples of dative subjects in Nepali (17), Hindi (18), and Gujarati (19).

(17) **Nepali:**

- a. *budhi manche-lai chara dekhin-cha*
 old woman.F-DAT bird.M.NOM appear-PRES.M.SG
 ‘The bird appears to the old woman.’
- b. **ma-lai chara-lai dekhin-cha*
 I-DAT bird.M-ACC appear-PRES.M.SG
 ‘The bird appears to me.’

(18) **Hindi:**

- a. *mujhe Sita dikh-ī*
 I.DAT Sita.F.NOM appear-PERF.F.SG
 ‘Sita appeared to me.’
- b. **mujhe Sita-ko dikh-ā*
 I.DAT Sita.F-ACC appear-PERF.M.SG
 ‘Sita appeared to me.’

(19) **Gujarati:**

- a. *ma-ne Sita gam-ī*
 I-DAT Sita.F.NOM please-PERF.F.SG
 ‘Sita pleased me.’
- b. **ma-ne Sita-ne gam-ī*
 I-DAT Sita.F-ACC please-PERF.F.SG
 ‘Sita pleased me.’

Whereas the verb agreed with ergative subjects in Nepali in the earlier data, it does not agree with the dative subject in (17a). Lack of agreement with dative case subjects is evident in (18a) and (19a) as well. The data in (17b), (18b), and (19b) show that a dative-accusative case array is ungrammatical in all the three languages — Nepali, Hindi, and Gujarati.

In permitting verb agreement, allowing for accusative-marked objects, and permitting zero morphology, IA ergative subjects behave more like nominative subjects than like other oblique subjects. These properties, in addition to the fact that ergative case is associated primarily with transitive verbs in the perfective aspect, indicates that ergative case has certain structural case properties while other non-nominative cases are lexically governed and semantically driven.¹³

It is not our intention in this paper to ignore this larger data set, but rather to isolate and account for some of the distinctive properties of ergative subjects, such as the partially similar patterning of ergative and nominative subjects. Though not within the current scope, a unified account of case and agreement interaction in IA must ultimately provide an explanation of why dative and other oblique subjects pattern differently from ergative subjects in both case marking and agreement.

In the two sections that follow, we present our analysis of ergative case marking and agreement systems.

5 Subject case constraints

5.1 Optimality and case marking

In Optimality Theory (OT), grammars are represented by language-particular rankings of universal constraints. This section presents the constraints to be employed in the analysis of subject-marking. Constraints generally fall into two classes: faithfulness constraints, which relate features in the input and the output, and markedness constraints, which place restrictions on possible output structures. Candidate outputs are evaluated for a given input according to these ranked constraints. We first present two faithfulness constraints and then the relevant markedness constraints. For the latter, we draw on Aissen’s (1999) implementation of harmonic alignment and constraint conjunction in syntax, based on Prince & Smolensky (1993). Alignment constraints are derived from the alignment of various universal hierarchies.¹⁴ Since such constraint alignments are derived from universal scales, they cannot be mutually reranked within one constraint subhierarchy. The prohibition on mutual reranking of constraint alignments within a universal subhierarchy is crucial to the present analysis.

Our analysis is primarily an account of the paths available for reducing overt *morphological* case marking on subjects (of transitive, perfective clauses). However, a purely morphological account is complicated by the present data, which show that morphological and abstract specifications of case do not always pattern identically for a given

¹³Some of the literature on Hindi associates ergative case with the semantics of agentivity (+VOLITIONALITY, +CONTROL) (Mohanani 1994; Butt & King 2001), but this semantic function of the ergative is constrained by the structural context in which it occurs: transitive (and some unergative) verbs in the perfective aspect.

¹⁴Essentially, this operation takes a binary structural scale (e.g. a grammatical function scale) and aligns each member of a second scale (e.g. an animacy scale) with each member of the first (Smolensky 1995).

NP. For instance, as we have seen, first and second person subjects in Marathi perfective clauses are not morphologically marked for ergative case, yet behave like ergative subjects in terms of modification and agreement.

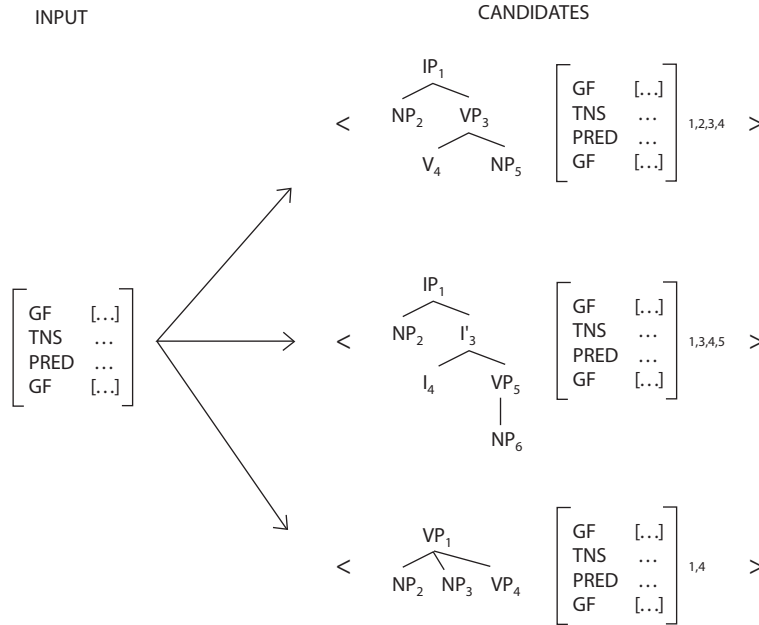
Woolford (2001) has noted the need to distinguish between arguments that are covertly ergative and those that are truly nominative in languages like Marathi. However, she exclusively restricts her case analysis to *abstract* case, and thus does not deal with differences in morphological expression. She concludes her discussion of Marathi stating: “these subject person splits do not involve an alternation between different Cases, but only whether or not the ergative abstract Case is morphologically realized. The present paper [Woolford 2001] is limited to dealing with situations involving choices among different abstract Cases” (2001:534-5).

Woolford directs the reader to Aissen’s work for an explanation of Marathi, as Aissen deals with morphological realization of case. As we will show in our analysis, Aissen’s (1999) constraints do in fact provide an explanation of the null-marking of case on certain types of subjects (e.g. local person). However, as her analysis applies only to *morphological* case, it has the converse problem of Woolford’s constraints. While Woolford’s account does not explain the morphological variation in Marathi subjects, Aissen’s account fails to explain the non-nominative behavior of these subjects.

The data pose a central problem for both Woolford’s and Aissen’s interpretations of constraints on case, as neither of their analyses treats the relation between abstract case features and morphological case marking in the specific instances when the two do not coincide. In the present analysis, we aim to distinguish between true nominative subjects and surface nominative subjects in perfective clauses. Rather than limiting the discussion to *either* abstract case (as Woolford does) or morphological case (as Aissen does), we adopt relevant insights from both treatments of case and aim to offer an integrated analysis that assumes a direct mapping from morphological marking to abstract case features. In the discussion that follows, the faithfulness constraints introduced in Section 5.2 derive abstract case and the markedness constraints in Section 5.3 derive morphological case.

We adopt a standard Lexical-Functional Grammar (LFG) model of mapping from the surface structure to the semantic/grammatical information structure. Under an OT interpretation, this is expressed in terms of a relation between an underspecified semantic input and various possible candidate outputs, containing pairings of surface representations (constituent-structure) and abstract grammatical representations (functional-structure). Kuhn (2001) and Lee (2003:53) treat candidates as output-output correspondences between candidate c-structures and candidate f-structures for a given semantic input. Figure 1, from Bresnan (2000a:26), illustrates this association of a semantic input with a paired c-structure output and f-structure output.

Figure 1: Architecture of INPUT-OUTPUT relations in OT-LFG (Bresnan 2000a:26).



5.2 Faithfulness constraints

In the discussion that follows, morphological case is defined as the presence of a morphological case marker in the c-structure of a noun phrase. An abstract case feature is defined as the presence of a value for the attribute CASE in the f-structure of a noun phrase. The two faithfulness constraints we adopt in this analysis serve the two functions of (i) relating abstract (f-structure) case features to surface (c-structure) morphology (i.e. output-output correspondence) and (ii) relating semantic input to abstract case features (i.e. input-output correspondence). The markedness constraints in the next section simply place constraints on the surface (c-structure) morphology of the candidate.

The faithfulness constraint that ensures a mapping between the surface realization of morphological structure and the corresponding abstract informational content of the clause is given in (20):

- (20) CS-FS: Case in the f-structure of an argument must be identical with the case-marking in the c-structure of the argument

When this constraint is high ranked, it selects candidates which have identical morphological (c-structure) and abstract (f-structure) case. If a clause has a subject with overt ergative marking in the c-structure, the constraint will favour the selection of a

candidate with an abstract ergative case feature in its f-structure, as opposed to one with an abstract nominative case feature, for example. The effect of this constraint is a default pairing of morphological case marking and abstract case features. The constraint is not symmetric: c-structure (surface morphological) case informs f-structure (abstract) case, but not vice versa.¹⁵

The second faithfulness constraint we adopt for the present discussion is a constraint which identifies agentive subjects of perfective clauses in the input with abstract ergative features in the f-structure. The constraint is analogous to Woolford’s (2001) constraint FAITH-LEX_{perf} , which ensures lexical specification of subjects of perfective clauses as abstract ergatives. It is also analogous to Legendre et al.’s (1993) constraint $\text{A} \rightarrow \text{C}_1$, which states that agents receive the abstract case associated with high-prominence agent arguments. We do not adopt Woolford’s constraint directly here, as it relies on a different architecture for GEN. Legendre et al.’s constraint is identical to the one proposed here but lacks the additional factor of a perfective split. As we also do not use their notational system of $\{\text{C}_1, \text{C}_2, \dots\}$ in this paper, we have expressed the constraint more neutrally in (21).¹⁶

- (21) $\text{AG}/\text{SUBJ}_{perf}$: Agentive subjects (in perfective clauses) must bear the highest available subject case feature

In NIA languages, this constraint is indexed to the domain of perfectivity; in other languages, the constraint may apply to all agentive subjects. The present formulation according to agentivity, rather than simply subjecthood or transitivity, facilitates an inclusion of the subset of intransitive subjects in NIA perfective clauses that allow ergative marking due to their agentive and volitional nature (Mohanani 1994).

When highly ranked, this constraint requires an abstract ergative case feature to be associated with perfective clause subjects. This constraint can potentially conflict with the morphological markedness constraints and the basic c-structure-to-f-structure mapping constraint, because it imposes an abstract ergative case feature regardless of the morphology. Note that the reverse pairing of an abstract nominative case features with surface ergative morphology is not predicted by these constraints.

5.3 Markedness constraints

The typological range in Tables 3 and 4 — with partly independent subject and agreement patterns — lends itself to an analysis which draws on universal markedness hierarchies. In this section, we present universal morphological case constraints and their

¹⁵This determination of abstract f-structure features by morphological c-structure marking is analogous to constructive case as developed in Nordlinger (1998), as the morphology drives the abstract case realization.

¹⁶A lexically determined inventory of cases and associations with grammatical functions is assumed to be accessible to satisfy this constraint. Donohue (2004) describes the cross-linguistic motivation for an ordered subject case hierarchy; Legendre et al. (1993) also assume an ordered inventory of cases.

specific rankings.¹⁷ All the markedness constraints here apply strictly to the morphological expression of case markers in the c-structure of a candidate.

The constraints in this section apply only to structural case by appealing to degrees of markedness of subjects of perfective clauses. Other faithfulness constraints on argument realization may result in the use of other semantic subject cases noted in Section 4.3, such as dative or instrumental, in order to faithfully realize semantic information. Semantic case constraints are assumed to be high ranked, thus faithfully realizing semantic cases and over-riding the present morphological structure constraints. The constraints discussed here only affect structural subject case (ergative) on subjects in perfective clauses.

(22)	UNIVERSAL SCALES	HARMONIC ALIGNMENT	CONSTRAINT ALIGNMENT
	Subject > Object	Su/Loc > Su/3	*SU/3 >> *SU/LOC
	Local (1st,2nd) > 3rd	Oj/3 > Oj/LOC	*OJ/LOC >> *OJ/3

The hierarchy of subject-marking constraints used here was proposed by Aissen (1999), who formalised Silverstein’s (1976) NP-hierarchy for a range of cross-linguistic case phenomena. In (22), the two universal scales of grammatical function and person rank are listed in the first column. The typological markedness reversal between subjects and objects noted by Comrie (1989) and Battistella (1990) among others, namely that what is most marked for subjects is least marked for objects, is captured by direct and inverse alignments of subject and object respectively with the person hierarchy. This is shown in the second column. These harmonic alignments state, for instance, that it is more harmonic for a subject to be associated with first person than third person. Finally, the universal subhierarchies of actual constraints are shown in the third column. These are derived by prefixing the “Avoid” operator (*) to each alignment and stating the ranking in terms of decreasing markedness. Most importantly, the ordering of these constraints relative to one another is universal.¹⁸

Aissen conjoins these constraints with the constraint $*\phi_c$, resulting in a requirement to mark these arguments with some case form. This captures the idea that marked configurations of features should be morphologically marked.

(23)	*SU/3 & $*\phi_c$ >> *SU/LOCAL & $*\phi_c$ (Aissen 1999:673)
------	--

The ranking in (23) essentially states that 3rd person subjects are universally more marked than 1st and 2nd person subjects. Each constraint can only be satisfied by overt case-marking.

¹⁷We assume that a correspondence of argument-structure and functional-structure establishes the grammatical functions of arguments in the input. The focus here is mainly on the association of morphological marking with grammatical functions, not the determination of grammatical functions themselves, which will be assumed to be independently ensured through the type of argument-function correspondences proposed in Lexical Mapping Theory (LMT; Bresnan & Kanerva, 1989) and further developed for OT in Bresnan (2000b).

¹⁸The object marking constraints are not addressed in this paper (see Aissen (2003) for a discussion of this constraint subhierarchy).

As our data are specific to the domain of the perfective aspect, we conjoin Aissen’s constraints with a constraint on perfective subjects.¹⁹

$$(24) \quad *_{\text{SU}/3} \ \& \ *_{\text{SU}/\text{PERF}} \ \& \ *_{\phi_c} \ \gg \ *_{\text{SU}/\text{LOC}} \ \& \ *_{\text{SU}/\text{PERF}} \ \& \ *_{\phi_c}$$

This is a necessary contextual restriction to perfective contexts. The highest constraint in (24) states that a 3rd person subject occurring in the perfective context must be overtly marked. The universally lower ranked (less marked) constraint requires this of local person perfective clause subjects. As all of the present discussion applies to this domain of perfective clauses, we omit the specification of perfective from the description of these constraints. In all other respects, these constraints are identical to Aissen’s (1999).

$$(25) \quad *_{\text{STRUC}_c}: \quad \text{Avoid (case specification) structure} \\ \text{(Prince \& Smolensky 1993:25; Aissen 1999)}$$

Finally, the constraint in (25) penalizes any morphological structure; Aissen (1999) employs the constraint $*_{\text{STRUC}_c}$ to specifically penalize case morphology, which is our use here as well. $*_{\text{STRUC}_c}$ serves as an economy constraint on morphology. It does not affect the realization of abstract case and is only violated when morphological structure, in the form of overt case marking, is present.

Using just the three constraints in (24) and (25), we can begin to account for changes in the various IA subject-marking systems. In (26) we list all possible re-rankings of the three constraints (recall that the two subject markedness constraints form a subhierarchy and cannot be reranked with respect to each other) along with sample systems in which these rankings are found.²⁰

$$(26) \quad \begin{array}{ll} & \longleftarrow *_{\text{STRUC}_c} \quad \text{(Bengali, Oriya: No subjs marked)} \\ \text{SU}/3 \ \& \ *_{\phi_c} & \\ & \longleftarrow *_{\text{STRUC}_c} \quad \text{(Marathi, Punjabi: Only 3p subjs marked)} \\ \text{SU}/\text{LOC} \ \& \ *_{\phi_c} & \\ & \longleftarrow *_{\text{STRUC}_c} \quad \text{(Nepali, Hindi: All subjs marked)} \end{array}$$

In (26), $*_{\text{STRUC}_c}$ is progressively promoted above the constraints requiring subject marking — partially in Marathi and completely in Bengali — allowing the universal avoidance of overt subject marking to emerge.²¹

¹⁹See Sharma (2001) for a discussion motivating constraints on overt-marking of arguments based on perfectivity.

²⁰It is interesting to observe that the synchronic typology in (26) can also be used to depict the diachronic stages of loss of ergative marking in IA languages, from ergative-marking in MIA to non-ergative marking NIA systems such as Bengali.

²¹Gujarati is not included in this tabulation, although it falls in the same intermediate group as Marathi and Punjabi. It is excluded only because its subject-marking pattern is sensitive to both person and number and therefore cannot be exclusively accounted for by the arrangement of the person constraints in (26); the case of Gujarati is discussed more fully later.

The tableaux in (27)-(30) illustrate the rankings of subject constraints. The examples show only the relevant, partial inputs for transitive, perfective clauses for clarity of presentation. Each example in (27)-(30) contrasts two different inputs, to show which candidate gets selected according to the subject person feature in the input and the language particular rankings. In the first two tableaux, the candidates (a), (b), (c), and (d) are evaluated according to the ranked constraints.

(27) **Nepali, Hindi (and MIA)**

		*SU/3 & * ϕ_c	*SU/LOC & * ϕ_c	*STRUC
INPUT: Subj(loc)				
☞ a.	S-erg			*
b.	S- ϕ		*!	
INPUT: Subj(3rd)				
☞ c.	S-erg			*
d.	S- ϕ	*!		

In (27), *STRUC is ranked below both subject constraints, resulting in marked subjects always satisfying one of the higher ranked constraints.

(28) **Bengali, Oriya**

		*STRUC	*SU/3 & * ϕ_c	*SU/LOC & * ϕ_c
INPUT: Subj(loc)				
a.	S-erg	*!		
☞ b.	S- ϕ			*
INPUT: Subj(3rd)				
c.	S-erg	*!		
☞ d.	S- ϕ		*	

In (28), on the other hand, *STRUC dominates both markedness constraints, so the morphologically unmarked candidates are selected as optimal. Since there is no discrepancy between morphological marking and abstract case features in Nepali, Hindi, and Bengali, we do not include the faithfulness constraints in the tableaux for the (27)

and (28). CS-FS is assumed to be high ranked.

(29) **Marathi, Punjabi**

		AG/SUBJ _{perf}	*SU/3 & * ϕ_c	*STRUC	*SU/LOC & * ϕ_c	CS-FS
INPUT: Subj(loc)						
a.	S-erg(overt)			*!		
b.	S-nom(ϕ)	*!			*	
☞ c.	S-erg(ϕ)				*	*
INPUT: Subj(3rd)						
☞ d.	S-erg(overt)			*		
e.	S-nom(ϕ)	*!	*			
f.	S-erg(ϕ)		*!			*

In Marathi, shown in (29), by contrast, the role of the faithfulness constraints is apparent, as is the intermediate ranking of *STRUC. In terms of markedness constraints, *STRUC intervenes between the two subject person constraints. 3rd person subjects must be overtly case-marked to satisfy the highest constraint, even though they violate *STRUC, and so candidate (d) is chosen over (f). However, since the lower-ranked subject constraint is below *STRUC, *null-marked* 1st and 2nd person subjects are preferred, so candidate (c) is chosen over (a).

The candidates (b) and (f) show how the two faithfulness constraints interact with the others. Without Woolford’s constraint, which lexically requires an abstract ergative case feature, an abstract nominative 1st and 2nd person subject would win; however, this choice would not derive the facts presented earlier regarding the non-nominative behavior of these null-marked subjects. The constraint CS-FS is included to show that it is violated in favour of satisfying AG/SUBJ_{perf}. The theory predicts that it is also typologically possible for the order of these two faithfulness constraints to be switched. Later, in the discussion of Marathi dialects, we will see that the dialect of Gowari instantiates this prediction.

(30) Gujarati

	AG/SUBJ _{perf}	*SYNCRET/SG	*SU/3 & * ϕ_c	*STRUC	*SU/LOC & * ϕ_c	CS-FS
INPUT: Subj(loc-pl)						
a. S-erg(overt)				*!		
b. S-nom(ϕ)	*!				*	
☞ c. S-erg(ϕ)					*	*
INPUT: Subj(3rd-pl)						
☞ d. S-erg(overt)				*		
e. S-nom(ϕ)	*!		*			
f. S-erg(ϕ)			*!			*
INPUT: Subj(loc-sg)						
☞ a. S-erg(overt)				*		
b. S-nom(ϕ)	*!	*			*	
c. S-erg(ϕ)		*!			*	*
INPUT: Subj(3rd-sg)						
☞ d. S-erg(overt)				*		
e. S-nom(ϕ)	*!	*	*			
f. S-erg(ϕ)		*!	*			*

Finally, in Gujarati the ranking is the same as in Marathi and Punjabi, except for an additional, independent phenomenon of number-sensitivity in subject-marking. The marking of subjects is restricted according to both person *and* number. First and second person *plural* subjects undergo syncretism with the nominative. This does not in fact pose a problem for a person-based analysis of subject-marking reduction, as Gujarati clearly shows the same person hierarchy sensitivity as Marathi and Punjabi. It simply adds the additional dimension of number to this process.

The morphological markedness of plural over singular number is observable cross-linguistically in various domains (Greenberg 1966:28-9). Due to this marked status, plural number is more susceptible to syncretism or neutralization than singular; we provisionally capture this with the constraint in (31).

(31) *SYNCRET/SG: Avoid syncretism of case-marking in the singular number

This constraint penalizes morphological syncretism between distinct cases (such as the nominative and the ergative) in the singular, thus capturing the cross-linguistic observation that syncretism is more common in the plural and accounting for the subject-marking properties in Gujarati and some Marathi dialects presented later.²²

²²In fact, this type of number distinction could be derived through Aissen's approach to markedness alignment, but as it is somewhat marginal to the present argument, we do not pursue this further here.

The three basic patterns of constraint rankings shown in the three examples discussed above give us the three broad sets of language types from Table 3. As *SU/3 and *SU/LOC are constraints within a universal subhierarchy, they are never mutually reranked; their ranking only varies in relation to *STRUC. Under our analysis, their progressive demotion below *STRUC represents the systematic elimination of overt marking on subjects. The next section presents an analysis of the agreement patterns in these languages.

6 Agreement constraints

6.1 Capturing the agreement facts

As the data earlier showed, agreement cannot be captured as a direct default which occurs only when overt case marking is absent. Nepali allows agreement with case-marked subjects, Gujarati allows agreement with case-marked objects, and Marathi forbids agreement with non-case-marked subjects. The constraints deriving agreement patterns need to be correspondingly nuanced to capture these patterns of variation. The constraints we develop for agreement are given in (32), (33) and (34).

(32) EXPRESS AGR: A predicate agrees with some argument

The constraint in (32) is a faithfulness constraint requiring agreement of some sort. The crucial difference in choosing to formulate the constraint as EXPRESS AGR rather than as a markedness constraint such as *EXPRESS AGR (formulated like *STRUC) is that the formulation in (32) favours agreement of some sort, while a markedness constraint would favour non-agreement. Cross-linguistically, case marking performs a discriminant function amongst arguments, often signalling a marked situation, as noted by Dixon (1994), among others. We treat agreement, on the other hand, as a prominence relation with the least marked argument. In other words, case and agreement do not perform identical functions; overt case marking is minimised or economised where possible, while agreement is a default, occurring in unmarked contexts such as with subjects over objects. We also distinguish explicit number, gender or person agreement from default agreement here. The constraint in (32) is not satisfied by default agreement, which takes the form of masculine or neuter singular inflection in these languages.

Note that since default agreement is treated as non-agreement in our analysis, it is assumed to occur in order to satisfy an independent requirement for finiteness marking. A constraint on finiteness marking is necessary in order to distinguish finite from nonfinite verb stems. Since this requirement holds identically for all the languages in question, we exclude this constraint from our discussion. As a result, candidates with completely uninflected verb forms are not considered here. Candidates with default agreement, however, may be optimal for certain inputs and default agreement does interact with full agreement.

The constraint EXPRESS AGR is used in Bresnan (2000b) only for subject agreement. In order to generalise her constraint systematically, we align it with the relational hierarchy to permit agreement with more than just subjects, while still indexing the relative markedness of each type of agreement. The resulting constraint alignments are given in (33).

$$(33) \quad *_{\text{NON-CORE GF/AGR}} \gg *_{\text{OJ/AGR}} \gg *_{\text{SU/AGR}}$$

The universally least marked agreement pattern, according to this constraint hierarchy, is subject agreement. Object agreement is more marked and agreement with non-core grammatical functions is the most marked. This highest constraint is left out of the discussion, as it is never violated in the data here; for example, we do not find instances of agreement with dative subjects or objects in the present data.²³

So far, the agreement constraints simply derive agreement based on grammatical function. However, the typology of agreement systems in Table 4 showed that case-marking sometimes blocks agreement across the board, but in other instances does not. This suggests that agreement is not only sensitive to grammatical function but also to case, requiring two dimensions of agreement relations: one associated with grammatical function, as above, and one with case.

To derive the latter, we assume a similar alignment of agreement with case, as shown in (34). Woolford (2001), in her cross-linguistic study of the interaction of case-marking with faithfulness constraints, proposes the universal hierarchy of (*ERGATIVE), *DATIVE \gg *ACCUSATIVE \gg *NOMINATIVE, which we follow here to derive case-sensitive agreement.

$$(34) \quad *_{\text{ERG/AGR}} \gg *_{\text{ACC/AGR}} \gg *_{\text{NOM/AGR}}$$

Unlike the subject case markedness constraints, which applied to morphology, we restrict this hierarchy to abstract (f-structure) case features as Woolford does. This permits constraints such as *ERG/AGR to prevent agreement with 1st and 2nd person subjects in languages like Marathi and Gujarati, regardless of whether their morphological case marking is overt.

These two universal subhierarchies of agreement constraints in (33) and (34) interact to derive the observed language types. These constraints rule out certain systems but allow a considerable range as well. For instance, agreement with accusative objects or ergative subjects is not ruled out, but agreement with an accusative or nominative object *over* a nominative subject is ruled out.

In the examples that follow, the actual selection of case is assumed to be ensured by the constraints presented in the previous section. We therefore only include candidates with the correct subject case, and the examples are restricted to examining agreement

²³A reviewer comments that an Indo-Aryan language Darai (Paudyal 2003) allows agreement with dative subjects. While we do not address dative subjects in this paper, this system is predicted by one possible ranking of our constraint set.

alternations. So, for example, all ergative-marked subject candidates for perfective inputs in Bengali would be ruled out by the rankings that we saw in (28).

Each example shows three different types of clausal inputs — perfective clauses with specific (therefore accusative) objects, perfective clauses with non-specific (therefore nominative) objects, and non-perfective clauses — in order to show how the constraints interact to derive agreement for different clause types.²⁴

We first consider Hindi, Marathi and Punjabi. This group allows agreement with either subject or object, as long as its case is nominative.

(35) **Hindi, Marathi, Punjabi**

	*ERG/AGR *ACC/AGR	EXP AGR	*OJ/AGR	*SU/AGR	*NOM/AGR
INPUT: S O(spec) V(perf)					
a. S-erg O-acc V-Sagr	*!			*	
b. S-erg O-acc V-Oagr	*!		*		
☞ c. S-erg O-acc V-default		*			
INPUT: S O(nonspec) V(perf)					
d. S-erg O-nom V-Sagr	*!			*	
☞ e. S-erg O-nom V-Oagr			*		*
f. S-erg O-nom V-default		*!			
INPUT: S O V(nonperf)					
☞ g. S-nom O-nom V-Sagr				*	*
h. S-nom O-nom V-Oagr			*!		
i. S-nom O-nom V-default		*!			

In (35), the first input requires case on both subject and object. In this situation, default agreement wins out of candidates (a), (b), and (c), because agreement with either argument would violate the restriction on agreement with ergative or accusative. When the object is not marked accusative, as in (d), (e), and (f), object agreement is preferred to a violation of the higher-ranked EXPRESS AGR. Finally, if neither subject nor object is case-marked, as in (g), (h), and (i), then subject agreement is ideal because object agreement is universally more marked.

Turning to Gujarati, the only difference between the Hindi-type group in (35) and the ranking for Gujarati in (36) is the promotion of the faithfulness constraint EXPRESS AGR above *ACC/AGR in Gujarati.

²⁴Case selection for specific and non-specific objects is ensured by independent DOM constraints (Aissen 2003).

(36) Gujarati

	*ERG/AGR	EXP AGR	*ACC/AGR	*OJ/AGR	*SU/AGR	*NOM/AGR
INPUT: S O(spec) V(perf)						
a. S-erg O-acc V-Sagr	*!				*	
☞ b. S-erg O-acc V-Oagr			*	*		
c. S-erg O-acc V-default		*!				
INPUT: S O(nonspec) V(perf)						
d. S-erg O-nom V-Sagr	*!				*	
☞ e. S-erg O-nom V-Oagr				*		*
f. S-erg O-nom V-default		*!				
INPUT: S O V(nonperf)						
☞ g. S-nom O-nom V-Sagr					*	*
h. S-nom O-nom V-Oagr			*!	*		
i. S-nom O-nom V-default		*!				

This reranking only affects the first input in (36). In the Hindi group, this input resulted in default agreement since both arguments were case-marked. In Gujarati, because EXPRESS AGR is higher ranked, agreement with the accusative is less bad than default agreement and so candidate (b) wins. Note that the mechanism of universal subhierarchies will still prohibit agreement with an accusative object if a nominative subject is available, as *ACC/AGR always outranks *NOM/AGR. The other two types of inputs are unaffected by the reranking, and still select the highest thematic argument with nominative case for agreement.

Finally, Nepali also contradicts the nominative agreement pattern of the Hindi group by allowing agreement with the ergative. This violates the highest constraint in (34). But, this is still preferable to agreement with any type of object, hence the ranking shown in (37).

(37) Nepali, (Bengali)

	EXP AGR	*OJ/AGR	*SU/AGR	*ERG/AGR *ACC/AGR *NOM/AGR
INPUT: S O(spec) V(perf)				
☞ a. S-erg O-acc V-Sagr			*	*
b. S-erg O-acc V-Oagr		*!		*
c. S-erg O-acc V-default	*!			
INPUT: S O(nonspec) V(perf)				
☞ d. S-erg O-nom V-Sagr			*	*
e. S-erg O-nom V-Oagr		*!		*
f. S-erg O-nom V-default	*!			
INPUT: S O V(nonperf)				
☞ g. S-nom O-nom V-Sagr			*	*
h. S-nom O-nom V-Oagr		*!		*
i. S-nom O-nom V-default	*!			

Bengali falls in the same category as Nepali in terms of agreement but has no ergative subject marking at all, so although the ranking in (37) is identical for Bengali agreement, candidates with nominative subjects would be the winners.

The only difference here between the Nepali/Bengali group and the other groups is that none of the constraints on case outrank agreement constraints on grammatical function. One way of looking at this is that since overt subject case-marking in Nepali has not been reduced, the language has opted for an alternative path of markedness reduction by targeting the markedness of object agreement.

6.2 Interim summary

Before turning to dialect variation in Marathi, let us first recapitulate the points covered by the analysis so far. At the outset of this discussion, we showed that the MIA ergative, perfective construction had certain universally marked features: case-marked subjects with nominative objects, and verb agreement with the object rather than the subject. Our model of two general strategies of reducing markedness along universal hierarchies has provided a formal account of the cross-classified patterns of Table 3 and Table 4.

The analysis has shown that the two paths of markedness reduction correspond to two types of constraint re-ranking. In terms of subject marking, the gradual promotion of *STRUC above case marking constraints gives rise to morphologically unmarked subjects in Bengali and Marathi. Those languages which retain subject-marking in all three persons – Hindi, Gujarati, and Nepali – may show changes in agreement instead. The promotion of the faithfulness constraint EXPRESS AGR combined with universal hierarchies of agreement types leads to the emergence of unmarked patterns of either subject

agreement (Nepali) or nominative agreement (Hindi).

Finally, although case and agreement constraints have been considered separately, in order to generate the diverse cross-classification of language types attested in IA, the OT framework ensures that they interact indirectly as both sets of constraints together determine the evaluation of a single candidate. For instance, the ranking of case constraints in Hindi will select an accusative object in certain clauses, while the ranking of agreement constraints will prohibit agreement with that object.

7 Dialectal variation

7.1 The typology of variation in Marathi dialects

The discussion so far has examined the typology of variation in case marking and agreement seen in NIA languages. In this section, we demonstrate that one of the languages described above, Marathi, reflects the same typological variation within its dialects, thus supporting the analysis. However, the dialect typology has two key distinctions: (i) no dialect has a more differentiated ergative system than the parent language, Old Marathi (OM, 1000-1400 CE), and (ii) at least one typological prediction made by our analysis but not attested in the language data is actually attested in the dialect data, further supporting the considerable diversity predicted by the OT analysis.

In terms of agreement marking patterns, OM and MIA are identical: the verb agrees with the highest thematic argument bearing nominative case. The crucial difference between the MIA and OM system is in the overt realization of ergative case in the nominal paradigm. As mentioned before, the ergative (instrumental) case marking in the MIA system occurs throughout the nominal case paradigm and is distinct from the nominative in all parts of the paradigm. In OM, by contrast, there is syncretism between the ergative and the nominative marking of pronouns in the plural of the first and second person pronouns, just as in modern Gujarati (Tulpule 1960; Master 1964). The case-marking pattern for OM, structurally parallel to Gujarati, is shown in (38).

(38)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	mī	āmhī
Perf	1	myā	āmhī
Non-perf	2	tū	tumhī
Perf	2	tuṽā	tumhī
Non-perf	3	to	te
Perf	3	te-ṅē	tyā-nni

The morphologically nominative forms in first and second plural subjects maintained abstract ergative-like behavior, as evidenced by agreement patterns (and also oblique adjectival modification) observable in one of the most important OM texts, the Dnyāneśwarī (Dandekar 1980).

- (39) a. *myā pāhi-lā hā meḷāvā*
 I.ERG see-PERF.M.SG this.M.NOM gathering.M.NOM
 ‘I saw this gathering. (Dnyāneṣwārī 1:193)
- b. *āmhī to kevaḷa vastu=chī āh-o*
 we.NOM that.M.NOM only object.M.NOM=EMPH be-PRES.1.PL
 ‘(thinking that) we are only that object.’ (Dnyāneṣwārī 8:248)
- c. *hā=chī yogu āmhī vivasvat-ā kathi-lā*
 this=EMPH knowledge.M.NOM we.ERG Vivasvat-DAT relate-PERF.M.SG
 ‘It is this knowledge, (that) we (*royal*) related to Vivasvat.’ (Dnyāneṣwārī 4:16)

In (39a), the pronoun is in the ergative case and the nominative object triggers agreement. In (39b), the verb agrees with the nominative pronoun. In (39c), there is no overt marking on the pronoun, but the verb does not agree with it.

In the sections that follow, we present data from six dialects of Marathi, and then compare the dialect typology to the preceding analysis of NIA languages.

7.2 The dialect data

First, a note on the nature of the dialect data. Most analyses of modern Marathi deal with the standard variety, spoken in Pune. The dialect data here are drawn from Volume VII of the Linguistic Survey of India (Grierson 1905), which is devoted to Marathi. The data in Grierson’s survey are of three kinds:

- Skeletal grammars (1 page) of selected dialects, with full nominal and verbal paradigms in some cases.
- A set of sample words and sentences (averaging 300 queries per dialect) for each dialect, elicited from respondents.
- A sample of continuous text in each collected dialect, in most cases a translation of *The Parable of the Prodigal Son*.

Grierson (1905) contains samples of Marathi from 94 geographically and culturally distinct Marathi-speaking communities. After examining the patterns occurring in each of these, we were able to identify the six broad patterns discussed below. In many cases, the existing data for individual varieties were insufficient to determine the complete agreement system; in other instances Grierson reports that a consistent pattern of agreement is not followed for a dialect. We were obliged to ignore inconsistent data of this sort. The data that we use are therefore a subset of Grierson’s data. As with the NIA languages, there are multiple instantiations of the same abstract structural pattern in the dialect data; in such cases we have chosen a representative dialect from the set.

PATTERN	DIALECT	AREA	TEXT	PAGES	GRIERSON'S CATEGORY
WARHADI	Warhadi	Akola	50, 51	223-232	Berar-Central
BRAHMANI	Brahmani				Provinces
	Kunbi	Akola	52, 53	234-236	Berar-Central
	Koli	Bombay	8, 9	68-75	KS
	Nagpuri	Nagpur	58, 59	248-258	Berar-Central
KONKAN STANDARD ²⁵	Kuḍaḷi	Sawantwadi	45	194-201	Konkan Standard (KS)
	Dhangari	Janjira	21-23	98-105	KS
	Bhandari	Janjira	24	106-108	KS
PUNE	Marathi	Poona	1, 2	35-42	Dekkhan
	Marathi	Kolhapur	3	45	Dekkhan
	Marathi	Buldana	4	46	Dekkhan
MARHETHI	Marathi	Bijapur	5	48-53	Dekkhan
	Marhethi	Balaghat	78	304-312	Berar-Central
GOWARI	Gowari	Bhandara	70	286-290	Berar-Central
DHARWARI	Dharwari	Dharwar	6, 7	52-60	Dekkhan

Table 5: Structural patterns of Marathi dialects

Table 5 displays the six patterns found in the dialect survey, together with the area from which the sample was obtained, additional dialects sharing the same system, the specimen text number, page numbers from Grierson's volume, and finally Grierson's linguistic-geographic classification of the dialects.

The data available from this survey are admittedly sparse, sometimes unsystematic, and now over a century old. However, it is also important to note that these are currently the only data available for most of these dialect varieties. Our claims about nominal and verbal marking are based on the primary data in the sample texts, which yield a systematic (although by no means ideal) picture of the inflectional paradigms under discussion. Despite the paucity of these data, such dialect data are crucial to a full understanding of typological variation in IA languages.

As our interest in the dialect data lies in its 'mirroring' of the language typology just presented, the sections that follow present the dialect data in terms of correspondences between them and the IA languages discussed in Section 3 and Section 4.

²⁵Konkan Standard is a dialect of Marathi and must be distinguished from Kōkaṇi, which is also related to Marathi but is generally considered a distinct language. Grierson (1905:61) distinguishes Dekkhan and Konkan Standard as the two broad dialect groups of Marathi and clearly distinguishes the latter from Kōkaṇi.

7.3 Warhaḍhi Brahmaṇi

Warhaḍhi Brahmaṇi is discussed first because it appears to be the most conservative in terms of retaining OM ergative morphology. As shown in (40), the pronominal paradigm of this dialect is identical to that of OM, with syncretism occurring only in first and second person plural transitive subjects.

(40)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	mi	āmi
Perf	1	myā	āmi
Non-perf	2	tu	tumi
Perf	2	tyā	tumi
Non-perf	3	to	te
Perf	3	tyā-na	tyā-ni

In abstract terms (i.e. not in terms of actual morphological exponence) this subject marking pattern is identical to the modern Gujarati subject marking pattern and may be derived by the same ranking of subject marking constraints as in Gujarati. The agreement facts of this dialect, however, resemble OM and Standard Marathi rather than Gujarati. The verb agrees with the nominative object, whether or not the subject shows overt ergative marking in transitive, perfective clauses. If the object is marked accusative because of definiteness or animacy, the verb gets a default neuter agreement, as illustrated in (41).

- (41) a. *tyā-na moṭh-ī pangat ke-lī āh-e*
 he-ERG big-F.NOM feast.F.NOM do-PERF.F.SG be-PRES.3SG
 ‘He has done (arranged) a big feast.’
- b. *tumhi tyā-chyā-sāṭhī moṭh-ī pangat de-llī*
 you.ERG he-GEN.OBL-sake big-F.NOM feast.F.NOM give-PERF.F.SG
 ‘You (honorific plural) gave a big feast for him (in his honor).’
- c. *tyā-na tyā-lā dukar chārāy-lā āpl-yā vāvr-āt dhād-la*
 he-ERG he-ACC pig.NOM.PL graze-INF self-GEN field-LOC send-PERF.N.SG
 ‘He sent him in the field to graze pigs.’

In (41a), the subject bears an overt ergative form and the verb agrees with the feminine *pangat* ‘feast’; in (41b), the plural second person (masculine) subject is not overtly marked, yet the verb again shows feminine agreement with the object. Finally, in (41c) the object is marked with accusative case and so the verb shows default neuter agreement.

7.4 Kuḍaḷi

Kuḍaḷi is considered by Grierson to belong to a group of border dialects between Marathi and Kōkaṇi, bridging the two language groups. As it occurs in such close proximity with the Sawantwaḍi dialects of Marathi and clearly represents an intermediate position on a dialect continuum between the two languages, we include it here as one of the representative systems of Marathi.²⁶ The paradigm for Kuḍaḷi ergative and nominative marked subject pronouns in perfective and non-perfective transitive clauses is almost identical to the Warhaḍhi Brahmaṇi paradigm, as given in (42).

(42)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	mi	ami
Perf	1	mya	ami
Non-perf	2	tu	tumi
Perf	2	tya	tumi
Non-perf	3	to	te
Perf	3	tē-nī, tye-na	tē-nī

The Kuḍaḷi nominal pattern may also be derived from the exact ranking of constraints that derive Gujarati and Warhaḍhi Brahmaṇi. The Kuḍaḷi agreement pattern is identical to Gujarati. In Kuḍaḷi, the verb agrees with the nominative object in transitive, perfective clauses. However, unlike the other Marathi dialects, the verb does not show default agreement when the object is marked accusative, but rather agrees with it. In this dialect then, the verb may agree with a case-marked object, but not with an ergative case-marked subject, exactly like the Gujarati pattern. The following examples illustrate this agreement pattern.

- (43) a. *te-nī te-kā āp-lī jindagī vā-tūn di-lī*
 he-ERG he-ACC self-F.GEN wealth.F.NOM distribute-GER give-PERF.F.SG
 ‘He, dividing his wealth, gave it to him (his son).’
- b. *te-nī te-kā āp-lī dukr-e chārā-k āp-lyā shet-āt dhād-lō*
 he-ERG he-ACC self-GEN.PL pig-NOM.PL graze-INF self-GEN.OBL field-LOC send-PERF.M.SG
 ‘He sent him in his field to graze his pigs.’

In (43a), the verb agrees with the feminine nominative object *jindagī* ‘wealth’, similar to other dialects like the Pune variety, and Warhaḍhi Brahmaṇi. In (43b), the verb agrees in gender and number with the accusative object, rather than showing default neuter agreement. Thus both the subject and agreement facts for Kuḍaḷi can be derived from the the same ranking of constraints presented for Gujarati.

²⁶Grierson notes, for instance, that Kuḍaḷi employs local person pronouns that are identical to Marathi, rather than the forms *hav*, *haven*, *tuv*, *toven* of Kōkaṇi.

7.5 Standard Puṇe Marathi

This is the dialect of Marathi that has been the subject of most linguistic literature on Marathi, and it is also the dialect discussed in the earlier section. The pattern for subject marking, with syncretism in the 1st and 2nd person, is reproduced here.

(44)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	mī	āmhī
Perf	1	mī	āmhī
Non-perf	2	tū	tumhī
Perf	2	tū	tumhī
Non-perf	3	to	te
Perf	3	tyā-ne	tyā-nī

As we saw earlier, the verb only shows agreement with the nominative object in such clauses, and exhibits default neuter singular agreement when the object is marked accusative. Examples are given in (45), repeated from (13).

- (45) a. *mī sita-lā bagh-to*
 I.M.NOM Sita.F-ACC see-PRES.M.SG
 ‘I see Sita.’
- b. *mī ek chīmṇī baghit-lī*
 I.M-ERG one sparrow.F.NOM see-PERF.F.SG
 ‘I saw a sparrow.’
- c. *mī sita-lā baghit-la*
 I.M.ERG Sita.F-ACC see-PERF.N.SG
 ‘I saw Sita.’

These agreement facts remind us that in spite of overt morphological syncretism with the nominative case, first and second person subjects in the Puṇe dialect bear abstract ergative features. The earlier constraint ranking for Marathi accounts for this standard variety.

7.6 Marheṭhi

Marheṭhi has a case marking pattern identical to that of the Puṇe dialect, as overt ergative case is present only in the third person. The pronominal paradigm is illustrated in (46).

(46)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	mī	āmhī
Perf	1	mī	āmhī
Non-perf	2	tū	tumī
Perf	2	tū	tumī
Non-perf	3	to	te
Perf	3	tyā-ni	tyā-nni

The agreement pattern, however, differs from the Pune dialect in that the verb agrees uniformly with the subject regardless of whether it is morphologically marked, as can be seen in the masculine agreement (rather than agreement with the neuter or feminine nominative object available in the clause) in all three examples in (47).

- (47) a. *mī īshwarā-ce iruddh ānikh āple-samor pāp ke-lo*
 I-M.ERG God-GEN against and you-in front of sin.N.NOM do-PERF.1.M.SG
 ‘I committed a sin against God and in front of you.’
- b. *mī tum-cī konhi bāt nāhī tār-lo*
 I-M.ERG you-GEN any talk.F.NOM NEG avoid-PERF.1.M.SG
 ‘I never avoided (doing) anything you said.’
- c. *tum-ce bāpā-ne cāngla bhojan ke-lā āh-e*
 you-GEN father.M-ERG good feast.N.NOM do-PERF.3.M.SG be-PRES.3.SG
 ‘Your father has organized a good feast.’

This pattern of agreement is identical to the agreement pattern in Nepali, and can be derived from the same constraint ranking.

7.7 Gowari

Gowari has a nominal inflectional paradigm that is also identical to the Pune dialect, as shown in (48).

(48)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	mī	āmī
Perf	1	mī	āmī
Non-perf	2	tū	tumī
Perf	2	tū	tumī
Non-perf	3	to	te
Perf	3	tyā-n	tyā-nnī

However, the crucial difference — and the reason that Gowari in fact adds to the entire NIA typology presented in the first part of this study — is that morphologically zero-marked transitive perfective subjects in the first and second person *do* trigger agreement, suggesting that they are behaving like nominatives in both morphology and abstract case features.

- (49) a. *mag tyā-n bāpā-lā uttar di-lan*
 then he-ERG father-DAT answer.N.NOM give-PERF.3.N.SG
 ‘Then he gave an answer to his father.’
- b. *mī devā-javal tu-jhyā-sāmne pāp ke-lo*
 I.M.NOM God-near you-GEN.OBL-in front of sin.N.NOM do-PERF.1.M.SG
 ‘I committed a sin near God and in front of you.’

In (49a), the verb agrees with the nominative object, rather than the subject, because the subject is marked for ergative case; in (49a), however, the verb agrees with the first person masculine subject of a transitive perfective clause, as it is the highest thematic argument with nominative case.

7.8 Dharwari

Dharwari does not show any morphological distinction between perfective and non-perfective transitive subjects. There is no ergative marking on the transitive, perfective subject in any person. The Dharwari pronominal paradigm is shown in (50); it resembles the Bengali paradigm discussed earlier and can be derived by the same subject case constraint ranking.

(50)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	<i>mī</i>	<i>āmhī</i>
Perf	1	<i>mī</i>	<i>āmhī</i>
Non-perf	2	<i>tū</i>	<i>tumī</i>
Perf	2	<i>tū</i>	<i>tumī</i>
Non-perf	3	<i>to</i>	<i>tyāni</i>
Perf	3	<i>to</i>	<i>tyāni</i>

Dharwari shows agreement with the subject in person in perfective, transitive clauses, thus maintaining a nominative-accusative pattern of case and agreement marking in all its tenses and aspects, again sharing the basic model of Bengali. Examples are given in (51).

- (51) a. *mī tu-jhyā-samor āṇi parlokā-ce viruddha pāp*
 I.M.NOM you-GEN.OBL-in front of and heaven-GEN against sin.N.NOM
ke-lo
 do-PERF.M.1SG
 ‘I committed a sin in front of you and against the heavens.’

- b. *tyā-cā bāp āpl-ī zindagī vibhāg*
 he-GEN father.M.NOM self-F.GEN property.F.NOM division.M.NOM
kar-ūn di-lā
 make-GER give-PERF.M.3SG
 ‘His father, having divided his property, gave it (to them).

A dialect showing similar nominal marking and agreement patterns to Dharwari, is Haḷbi, spoken in the Bastar region. It is worth noting that in spite of being based on very different morphology, the inflectional paradigm patterns the same way, as shown in (52).

(52)

ASPECT	PERSON	NUMBER	
		<i>singular</i>	<i>plural</i>
Non-perf	1	mui	hami
Perf	1	mui	hami
Non-perf	2	tui	tumī
Perf	2	tui	tumī
Non-perf	5	hun	hun-man
Perf	3	hun	hun-man

The absence of ergative case and agreement patterns in Dharwari and Haḷbi is identical to Bengali and must be understood as an innovation, because OM, the immediate ancestor of these dialects did exhibit ergative morphology. This innovation then, like Bengali, involves the demotion of markedness constraints with respect to *STRUC. Agreement with the resulting unmarked subject does not violate any high-ranking constraint on agreement with nominatives or subjects, thus leading to uniform agreement with subject across the paradigm.

8 Cross-classification of the Marathi dialects

No dialect of Marathi shows a perfect correspondence to any of the IA languages discussed earlier, a fact that further supports our observation that case and agreement systems must be treated as partially independent. Instead, there are clear independent correspondences with respect to subject marking and agreement, as shown in (53).

(53)

DIALECT	PATTERN	
	SUBJECT MARKING	AGREEMENT
WARHAḌHI BRAHMAṆI	<i>Gujarati</i>	<i>Marathi</i>
KUḌALI	<i>Gujarati</i>	<i>Gujarati</i>
PUNE	<i>Marathi</i>	<i>Marathi</i>
GOWARI	<i>Marathi</i>	<i>Unattested</i>
MARHETHI	<i>Marathi</i>	<i>Nepali</i>
DHARWARI	<i>Bengali</i>	<i>Bengali</i>

SUBJ MKG	KUḌALI	WAR.BRAH.	MARHEṬHI	GOWARI	PUNE	DHARWARI
1-SG	✓	✓	∅	∅	∅	∅
1-PL	∅	∅	∅	∅	∅	∅
2-SG	✓	✓	∅	∅	∅	∅
2-PL	∅	∅	∅	∅	∅	∅
3-SG	✓	✓	✓	✓	✓	∅
3-PL	✓	✓	✓	✓	✓	∅

Table 6: Overt subject marking in transitive perfective clauses (dialects)

AGREEMENT	KUḌALI	WAR. BRAH.	PUNE	MARHEṬHI	GOWARI	DHARWARI
Nominative Subject	–	–	–	✓	✓	✓
Ergative Subject	∅	∅	∅	✓	∅	–
Nominative Object	✓	✓	✓	∅	✓	∅
Accusative Object	✓	∅	∅	∅	∅	∅

Table 7: Agreement in transitive perfective clauses (dialects)

Although there is no *a priori* reason for defining these Marathi dialects in terms of NIA languages, this exposition does highlight (i) the involvement of identical constraints in separately generating subject case and agreement systems for both languages and dialects, and (ii) the subset relation between Marathi dialects and the language typology — OM had already lost over realization of ergative case in a part of its paradigm and as a result no Marathi dialect corresponds to the subject marking system of Hindi, with overt marking for all persons and numbers.

The subject-marking patterns are summarized in Table 6. Dharwari has no ergative case on subjects in transitive, perfective clauses; Marathi, Gowari, and Marheṭhi pattern in the same way with regard to their subject marking, with overt ergative case only in the third person; and Warhaḍhi Brahmani and Kuḍali have a more articulated morphological distinction between the ergative and the nominative case.

The main difference from the typological range earlier in Table 3 is the absence of a system that marks the ergative subject overtly in all three persons and numbers, as in Hindi, Nepali, and MIA. The most articulated subject-marking system is the Gujarati-like system of Warhaḍhi Brahmani and Kuḍali, which preserve the older OM system.

Those dialects which group together with respect to subject marking patterns are not necessarily the ones showing similar agreement marking properties. This is summarized in Table 7.

Again we find that case-marking and agreement patterns do not classify uniformly across all dialects, but rather cross-cut between dialects. The most important addition to the earlier range in Table 4 is that of Gowari. While its subject-marking system is identical to the Pune or standard Marathi dialect, its agreement system indicates that

the unmarked local person subjects can actually behave like true nominatives and show agreement.

9 OT analysis of dialect variation

9.1 Subject-marking in Marathi dialects

The constraints presented in Section 5 and Section 6 can account for the parallel patterns of variation among Marathi dialects, including the new pattern of Gowari. In (54) we show the ranking of these constraints, along with the dialect system in which they are actually instantiated. The pattern that is not found within Marathi dialects, due to the restricting effect of OM, is instantiated by Hindi.

(54)

$*\text{Su}/3 \ \& \ *\phi_c$	\leftarrow	$*\text{STRUC}$	(Dharwari, Haḷbi)
$*\text{SYNCRET}/\text{SG}$	\leftarrow	$*\text{STRUC}$	(Pune, Gowari, Marheṭhi)
$*\text{Su}/\text{loc} \ \& \ *\phi_c$	\leftarrow	$*\text{STRUC}$	(Kuḍaḷi, Warhaḍhi Brahmaṇi, OM)
	\leftarrow	$*\text{STRUC}$	(<i>Hindi</i>)

Recall that the two constraints on perfective clause subjects may not be mutually reranked, as they are based on universal hierarchies, but may only be reranked with reference to $*\text{STRUC}$ and $*\text{SYNCRET}/\text{SG}$. The ranking in (54) illustrates that markedness constraints on subject marking can be progressively demoted below $*\text{STRUC}$ — partially in Kuḍaḷi and Standard Marathi (Pune) and completely in Dharwari — allowing the universal avoidance of overt subject marking to emerge.²⁷

As the table in (53) showed, many of the dialect systems here are identical to unrelated language systems seen earlier; we need not reproduce tableaux for these cases. In terms of subject-marking, the Dharwari and Haḷbi dialects are identical to the Bengali system, Pune and Marheṭhi are identical to the standard Marathi system, and Kuḍaḷi and Warhaḍhi Brahmaṇi are identical to Gujarati.

The tableau in (55), however, has not been seen earlier as none of the languages surveyed showed this system. In Gowari, the order of the two faithfulness constraints is switched, with CS-FS being high-ranked and AG/SUBJ_{perf} being lower. As a result, Gowari does not retain abstract ergative case features aside from when it is driven by overt morphology.

²⁷The only other system that a reranking of this constraint set predicts is: $*\text{SYNCRET}/\text{SG} \ll * \text{STRUC} \ll * \text{Su}/3 \ \& \ *\phi_c, * \text{Su}/\text{loc} \ \& \ *\phi_c$. This will generate a case-marking pattern which marks only singular subjects and not plural ones. We have not encountered any such system in NIA dialects and languages.

(55) **Gowari**

	CS-FS	*SU/3 & * ϕ_c	*STRUC	*SU/LOC & * ϕ_c	AG/SUBJ _{perf}
INPUT: Subj(loc)					
a. S-erg(overt)			*!		
☞ b. S-nom(ϕ)				*	*
c. S-erg(ϕ)	*!			*	
INPUT: Subj(3rd)					
☞ d. S-erg(overt)			*		
e. S-nom(ϕ)		*!			*
f. S-erg(ϕ)	*!	*			

9.2 Agreement in Marathi dialects

Again, much of the dialect agreement rankings are identical to earlier systems in the linguistic typology. Dharwari and Halbi are generated by the Bengali ranking seen earlier, as they have the simplest agreement system with no ergative subject case to interact with subject agreement. Kudali non-nominative object agreement is accounted for by the ranking described for Gujarati. Marhethi contradicts the nominative agreement pattern of the standard Pune dialect by allowing agreement with the ergative subject, suggesting the same ranking of agreement constraints as Nepali. The ranking shared by the Pune and Warhadhi Brahmani dialects was presented earlier for Standard Marathi, and allows agreement with either subject or object, as long as its case is nominative. This tableau is repeated in (56) for purposes of comparison with the new Gowari tableau that follows.

(56) Pune and Warhadhi Brahmani

	*ERG/AGR *ACC/AGR	EXP AGR	*OJ/AGR	*SU/AGR	*NOM/AGR
INPUT: S O(spec) V(perf)					
a. S-erg O-acc V-Sagr	*!			*	
b. S-erg O-acc V-Oagr	*!		*		
☞ c. S-erg O-acc V- ϕ agr		*			
INPUT: S O(nonspec) V(perf)					
d. S-erg O-nom V-Sagr	*!			*	
☞ e. S-erg O-nom V-Oagr			*		*
f. S-erg O-nom V- ϕ agr		*!			
INPUT: S O V(nonperf)					
☞ g. S-nom O-nom V-Sagr				*	*
h. S-nom O-nom V-Oagr			*!		
i. S-nom O-nom V- ϕ agr		*!			

Although Gowari has a different agreement system to the standard Pune dialect, its ranking of agreement constraints is actually identical. The difference in agreement arises because non-case-marked local subjects in Gowari are identified with abstract nominative case due to the distinct subject case constraint ranking in (55). As a result, these true nominative subjects can trigger agreement in Gowari and behave just like subjects of non-perfective clauses, as can be seen in the third INPUT in (57).

(57) Gowari

	*ERG/AGR *ACC/AGR	EXP AGR	*OJ/AGR	*SU/AGR	*NOM/AGR
INPUT: S(3rd) O(spec) V(perf)					
a. S-erg O-acc V-Sagr	*!			*	
b. S-erg O-acc V-Oagr	*!		*		
☞ c. S-erg O-acc V- ϕ agr		*			
INPUT: S(3rd) O(nonspec) V(perf)					
d. S-erg O-nom V-Sagr	*!			*	
☞ e. S-erg O-nom V-Oagr			*		*
f. S-erg O-nom V- ϕ agr		*!			
INPUT: S(loc)O V(perf)/ S O V(nonperf)					
☞ g. S-nom O-nom V-Sagr				*	*
h. S-nom O-nom V-Oagr			*!		
i. S-nom O-nom V- ϕ agr		*!			

The ranking in the Pune system in (56) and in Gowari in (57) is identical, but because local subjects of transitive perfective clauses in Gowari are independently identified as abstract nominatives, the optimal agreement pattern for these clauses is subject agreement rather than object agreement. Gowari thus represents a person *and* aspect split system predicted by the analysis but not attested in the earlier language data.

To summarize, a majority of the Marathi dialect data shows an exact mirroring of the systems that were seen in the earlier typology of NIA languages. Two main differences arose in the typology of Marathi dialects as compared with that of the NIA languages:

- a. No dialect of Marathi has a completely contrastive paradigm for overt ergative marking in the perfective clause, as Hindi has, for instance. This appears to be because the parent language, OM, had already reached an early stage of markedness reduction in the ergative clause. OM syncretized the ergative and the nominative marking of first and second person plural pronouns; this syncretism has never been ‘undone’ in a later dialect, with a regeneration of a more differentiated system.
- b. Gowari fills a typological gap that is predicted by our earlier analysis, namely morphologically-driven abstract nominative case features for local person subjects in perfective clauses (or, in other words, loss of abstract ergative case features along with loss of the morphological case-marking).

10 Conclusion

The ergative construction in modern NIA has too often been analyzed as a homogenous construction of the classic sort; the diversity of morphological variation subsumed under this rubric has been for the most part disregarded. To attribute to IA languages an across-the-board ergativity of the Hindi type is to ignore a larger range of data that, in our opinion, points to the emergence of unmarked case and agreement systems. In this paper, we have brought out certain characteristic patterns of nominal and verbal variation within the ergative clause in a range of IA languages and dialects, and we have derived them from a universal and functionally motivated set of constraints. The typology of the linguistic systems examined is constrained and converges on relatively transparent strategies for reducing markedness of paradigms.

A further insight of this analysis is the partial independence of case-marking and agreement systems in many of the languages discussed. Rather than treating agreement as a direct corollary of case, our approach of deriving nominal and verbal paradigms through partially independent sets of constraints, which nevertheless interact at the level of candidate evaluation, appears to be the most intuitive way of dealing with the present data. The typology of Marathi dialects supports this analysis by furnishing further evidence that dialect variation mirrors typological variation and is derivable by the same set of constraints.

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Acknowledgements:

We wish to thank Judith Aissen, Joan Bresnan, Miriam Butt, Paul Kiparsky, Hanjung Lee, Roger Levy, Peter Sells, and Barbara Stiebels for their insightful comments on earlier versions of this paper, which were presented at the parasession on South Asian languages at WECOL (Fresno, 2000), Stanford/UCSC Workshop on Optimal Typology (2000), Stanford Syntax Group (2002), and LAGB (Roehampton, 2004). We are indebted to the audiences of these sessions and also to anonymous reviewers for much valuable input. Part of the work on this project was supported by the National Science Foundation under Grant No. BCS-9818077.

Abbreviations:

ACC = accusative, EMPH = emphatic, ERG = ergative, F = feminine, GEN = genitive, GER = gerund, INF = infinitive, LOC = locative, M = masculine, N = neuter, NOM = nominative, PERF = perfective, PRES = present tense.

References

- Aissen, Judith. 1999. Markedness and subject choice in Optimality Theory. *Natural Language and Linguistic Theory* 17:673–711.
- Aissen, Judith. 2003. Differential object marking: Iconicity vs. economy. *Natural Language and Linguistic Theory* 21:435–483.
- Andersen, Paul Kent. 1986. Die *ta*-Partizipialkonstruktion bei Asoka: Passiv oder Ergativ? *Zeitschrift für vergleichende Sprachforschung* 99:75–95.
- Asudeh, Ash. 2001. Linking, optionality, and ambiguity in Marathi. In P. Sells, ed., *Formal and Empirical Issues in Optimality-Theoretic Syntax*. Stanford, California: CSLI Publications.
- Battistella, Edwin L. 1990. *Markedness: The Evaluative Superstructure of Language*. Albany: State University of New York Press.
- Beames, John. 1966. *A Comparative Grammar of Modern Indo-Aryan Languages of India*. Munshiram Manoharlal, Delhi.
- Bhatia, Tej K. 1993. *Punjabi*. New York: Routledge.
- Bhayani, H. C. 1988. *Gujaraati Bhaasaanu Aitihaasik Vyaakaran (Historical Grammar of the Gujarati Language)*. Gandhinagar: Gujarat Sahitya Academy.
- Bloch, Jules. 1965. *Indo-Aryan from the Vedas to Modern Times*. Paris: Adrien-Maisonneuve. Transl. by Alfred Master.
- Boersma, Paul and Bruce Hayes. 2001. Empirical tests of the gradual learning algorithm. *Linguistic Inquiry* 32:45–86.
- Bresnan, Joan. 2001a. Explaining morphosyntactic competition. In M. Baltin and C. Collins, eds., *Handbook of Contemporary Syntactic Theory*, pages 11–44. Oxford: Blackwell Publishers.
- Bresnan, Joan. 2001b. Optimal syntax. In J. Dekkers, F. van der Leeuw, and J. van de Weijer, eds., *Optimality Theory: Phonology, Syntax and Acquisition*, pages 334–385. Oxford: Oxford University Press.
- Bresnan, Joan and Ashwini Deo. 2001. Grammatical constraints on variation: ‘Be’ in the Survey of English Dialects and (Stochastic) Optimality Theory. Stanford University. <http://www-lfg.stanford.edu/bresnan/download.html>.
- Bresnan, Joan and Jonni Kanerva. 1989. Locative inversion in Chichewa: A case study of factorization in grammar. *Linguistic Inquiry* 20:1–50.

- Bubenik, Vit. 1996. *The Structure and Development of Middle Indo-Aryan Dialects*. Delhi: Motilal Banarasidass.
- Bubenik, Vit. 1998. *Historical Syntax of Late Middle Indo Aryan (Apabhramsa)*. Amsterdam: John Benjamins Publishing Co.
- Butt, Miriam. 2001. A reexamination of the accusative to ergative shift in Indo-Aryan. In M. Butt and Tracy Holloway King, eds., *Time over Matter: Diachronic Perspectives on Morphosyntax*, pages 105–144. Stanford: CSLI Publications.
- Butt, Miriam and Tracy Holloway King. 2005. The status of case. In V. Dayal and A. Mahajan, eds., *Clause Structure in South Asian Languages*, pages 153–198. Netherlands: Kluwer.
- Bybee, Joan. 1994. The grammaticization of zero. In W. Pagliuca, ed., *Perspectives on Grammaticalization*, pages 235–254. Amsterdam: John Benjamins Publishing Co.
- Bybee, Joan, J. R. Perkins, and W. Pagliuca. 1994. *The Evolution of Grammar: Tense, Aspect, and Modality in the Languages of the World*. Chicago: University of Chicago Press.
- Chatterji, Suniti Kumar. 2002 [1926]. *The Origin and Development of the Bengali Language*. Delhi: Roopa Publishing Co.
- Comrie, Bernard. 1978. Ergativity. In W. P. Lehmann, ed., *Syntactic Typology: Studies in the Phenomenology of Language*, pages 329–394. Hassocks, Sussex: The Harvester Press.
- Comrie, Bernard. 1989. *Language Universals and Linguistic Typology*. Oxford: Basil Blackwell, 2nd edn.
- Croft, William. 1990. *Typology and Universals*. Cambridge: Cambridge University Press.
- Dandekar, Shankar Warman, ed. 1980. *Dnyāneśwarī*. Alandi, Pune: Warkari Shikshan Sanstha, 12th edn.
- Dixon, R. M. W. 1994. *Ergativity*. Cambridge: Cambridge University Press.
- Donohue, Cathryn. 2004. *Morphology matters: Case licensing in Basque*. Ph.D. thesis, Stanford University.
- Estival, Dominique and John Myhill. 1988. Formal and functional aspects of the development from passive to ergative systems. In M. Shibatani, ed., *Passive and Voice*, pages 441–491. Amsterdam: Benjamins.

- Givòn, Talmy. 1979. *On Understanding Grammar*. New York: Academic Press.
- Greenberg, Joseph. 1966. *Language Universals*. The Hague: Mouton & Co.
- Grierson, G. A. 1905. *Linguistic Survey of India VII: Indo-Aryan Family, Southern Group (Marathi)*, vol. 7. Delhi: Motilal Banarsidass.
- Hock, Hans Heinrich. 1986. ‘P-oriented’ constructions in Sanskrit. In B. Krishnamurti, ed., *South Asian Languages: Structure, Convergence and Diglossia*, pages 15–26. Delhi: Motilal Banarsidass.
- Hook, Peter Edwin. 1992. On identifying the conceptual restructuring of passive as ergative in Indo-Aryan. In M. Deshpande and S. Bhate, eds., *Paninian Studies (Prof. S. D. Joshi Felicitation Volume)*, pages 177–199. University of Michigan: Centre for South and South East Asian Studies.
- Joshi, Smita. 1993. *Selection of Grammatical and Logical Functions in Marathi*. Ph.D. thesis, Stanford University.
- Klaiman, M. H. 1978. Arguments against a passive origin of the IA Ergative. In Donka Farkas, Wesley Jacobsen, and Karol Todrys, eds., *Papers from the Fourteenth Regional Meeting*, pages 204–216. Chicago Linguistics Society.
- Kuhn, Jonas. 2001. *Formal and Computational Aspects of Optimality-theoretic Syntax*. Ph.D. thesis, IMS, University of Stuttgart.
- Lee, Hanjung. 2002. *Optimization in Argument Expression and Interpretation: A Unified Approach*. Ph.D. thesis, Stanford University.
- Lee, Hanjung. 2003. Parallel optimization in case systems. In M. Butt and T. King, eds., *Nominals: Inside and Out*, pages 15–58. Stanford: CSLI.
- Legendre, Geraldine, William Raymond, and Paul Smolensky. 1993. An Optimality-Theoretic typology of case and grammatical voice systems. In *Proceedings of the 19th Meeting of the Berkeley Linguistics Society*, pages 464–478.
- Mahajan, Anoop. 2004. On the origin of non-nominative subjects. In P. Bhaskararao and Karumuri Venkata Subbarao, eds., *Non-Nominative Subjects*, pages 151–169. Amsterdam: John Benjamins.
- Masica, Colin P. 1991. *The Indo-Aryan Languages*. Cambridge Language Surveys. Cambridge, MA: Cambridge University Press.
- Master, Alfred. 1964. *A Grammar of Old Marathi*. Oxford: Clarendon Press.
- Mistry, P. J. 1997. Objecthood and specificity in Gujarati. In Jane Hill, P.J. Mistry, and Lyle Campbell, eds., *The Life of Language: Papers in Honour of William Bright*, pages 425–442. Mouton de Gruyter.

- Mohanan, K. P. and Manindra Verma, eds. 1990. *Experiencer Subjects in South Asian Languages*. Stanford: CSLI.
- Mohanan, Tara. 1994. *Argument Structure in Hindi*. Stanford: CSLI Publications.
- Nordlinger, Rachel. 1998. *Constructive case: Dependent-Marking Nonconfigurationality in Australia*. Stanford: CSLI.
- Paudyal, N. P. 2003. A Sketch of Darai Grammar. MA thesis, Tribhuvan University, Kirtipur.
- Peterson, John M. 1998. *Grammatical Relations in Pali and the Emergence of Ergativity in Indo-Aryan*. München: Lincom Europa.
- Pischel, R. 1981. *Grammatik der Prākṛit-Sprachen*. Delhi, India: Motilal Banarsidass. [1900] Translated from German by Subhadra Jha, 1981.
- Plank, Frans. 1979. Ergativity, syntactic typology, and universal grammar: Some past and present viewpoints. In *Ergativity: Towards a Theory of Grammatical Relations*, pages 3–36. New York: Academic Press.
- Prince, Alan and Paul Smolensky. 1993. *Optimality Theory: constraint interaction in generative grammar*. To appear in: Linguistic Inquiry Monograph Series. Cambridge, MA: MIT Press.
- Sharma, Devyani. 2001. Kashmiri case clitics and person hierarchy effects. In P. Sells, ed., *Formal and Empirical Issues in Optimality-Theoretic Syntax*, pages 225–256. Stanford, California: CSLI Publications.
- Silverstein, Michael. 1976. Hierarchy of features and ergativity. In R. M. W. Dixon, ed., *Grammatical Categories in Australian Languages*, pages 112–172. New Jersey: Humanities Press, Inc.
- Smolensky, Paul. 1995. On the Internal Structure of the Constraint Component Con of UG. ROA-86-0000. Rutgers Optimality Archive. <http://rucss.rutgers.edu/roa.html>.
- Stump, Gregory. 1983. The elimination of ergative patterns of case-marking and verbal agreement in Modern Indic Languages. *Ohio State Working Papers in Linguistics* 27:140–164.
- Tulpule, Shankar G. 1960. *An Old Marathi Reader*. Pune, India: Venus Prakashana.
- Wallace, William D. 1982. The evolution of ergative syntax in Nepali. *Studies in the Linguistic Sciences* 12(2):147–209. University of Illinois, Urbana.
- Woolford, Ellen. 2001. Case patterns. In G. Legendre, J. Grimshaw, , and S. Vikner, eds., *Optimality-theoretic Syntax*, pages 509–543. Cambridge, Mass.: MIT Press.