The Dative-Ergative Connection

Miriam Butt

Universität Konstanz

`miriam.butt@uni-konstanz.de`

1   Introduction

The classic division between structural vs. inherent/lexical case proposed within Government-Binding (Chomsky 1981) remains a very popular one, despite evidence to the contrary that the inner workings of case systems are far more complex than this simple division would suggest and that individual case markers generally make a systematic structural and semantic contribution that interacts in a generalizable manner with the lexical semantics of a predicate (see Butt 2006 for a survey of theories and data, Butt 2006:125 and Woolford 2006 for a proposed disctinction between inherent (generalizable) and lexical (idiosyncratic) case.).[1]   That is, the semantic contribution of case cannot (and should not) be relegated to the realm of lexical stipulation because there are systematic semantic generalizations to be captured.

This fact has been recognized in more and more recent work. One prominent example is the work engaged in understanding the semantic generalizations underlying so-called object alternations, perhaps the most famous of which is the Finnish partitive alternation shown in (1)–(2). In Finnish, the accusative alternates with the partitive on objects. This alternation gives rise to readings of partitivity ((1)) and aspectual (un)boundedness ((2)).[2]

---

[2]Glosses used in this paper are as follows: 1, 2, 3 stand for 1st, 2nd and 3rd person, respectively; Acc=Accusative; Aor=Aorist; Caus=Causative; Dat=Dative; Demon=Demonstrative; Erg=Ergative; F=Feminine; Fut=Future; Gd=Gerund;

(1) a. Ostin   **leivän**
     bought.1.Sg bread.Acc
     'I bought the bread.'   Finnish

     b. Ostin   **leipää**
     bought.1.Sg bread.Part
     'I bought (some) bread.'   Finnish

(2) a. Ammu-i-n   **karhu-n**
     shoot-Past-1.Sg bear-Acc
     'I shot the/a bear.' (Kiparsky 1998:267)   Finnish

     b. Ammu-i-n   **karhu-a**
     shoot-Past-1.Sg bear-Part
     'I shot at the/a bear (bear is not dead).'
     (Kiparsky 1998:267)   Finnish

To date, several sophisticated syntax-semantics interface analyses of case marking alternations exist. These analyses take the *aspectual* interpretation and the semantic type of the object in question into account, e.g., Enç (1991) on Turkish, de Hoop (1996) on crosslinguistic phenomena, Ramchand (1997) on Scottish Gaelic and Kiparsky (1998) on the Finnish partitive.

In contrast, the occurrence of non-nominative subjects as in the well-known Icelandic case (Zaenen, Maling and Thráinsson 1985), illustrated in (3), is still most often attributed to factors driven by lexical idiosyncracies. This is despite the fact that there are clear correlations between thematic roles and case realization that are evident in Zaenen, Maling and Thráinsson's (1985) original work and that have been worked out in more detail since (e.g., Jónsson 1997–8). Goals, for example, are always realized by datives, experiencers overwhelmingly so.

(3) Mér   batnaði   kvefið.
    I.Dat recovered the.cold.Nom
    'I recovered from the cold.' (Svenonius 2002:205)   Icelandic

---

Impf=Imperfective; Inf=Infinitive; Inst=Instrumental; Loc=Locative; M=Masculine; Neg=Negation; Nom=Nominative; Obl=Oblique; Opt=Optative; Part=Partitive; Pass=Passive; Perf=Perfect; Pl=Plural; Pres=Present; Ptcp=Partciple; Q=Question Particle; Redup=Reduplication; Sg=Singular; '-' indicates a morphological boundary; '=' indicates attachment of a clitic.

Some recent work has begun to bring analyses of non-nominative subjects in line with work on non-accusative objects. Pesetsky and Torrego (2001) and Svenonius (2002), for example, suggest that non-nominative subjects can also be understood in terms of an interaction between the verbal lexical semantics and the temporal/aspectual semantics of a clause, thus opening the door for an analysis of non-nominative subjects that would build on the insights gained with respect to non-accusative objects. Within Optimality Theory (OT), recent work has also begun to formulate constraints that deal with the realization of both non-accusative objects and non-nominative subjects (e.g., Aissen 1999, 2003).

This paper is particularly concerned with investigating the semantic factors governing *subject alternations*. Subject alternations in which an ergative alternates with a nominative (unmarked), as in (4) are relatively well known in the literature. Despite the fact that much of the South Asian literature has pointed to semantic factors such as volitionality or control as governing the alternation in (4), formal analyses tend to take only structural constraints into account (e.g., Aissen 1999 uses person, subject and thematic-role hierarchies; Davison 1999 uses structural constraints in combination with lexically stipulated information).

(4) a. **ram**   kʰãs-a
      Ram.M.Sg.Nom cough-Perf.M.Sg
      'Ram coughed.'   Urdu

   b. **ram=ne**   kʰãs-a
      Ram.M.Sg=Erg cough-Perf.M.Sg
      'Ram coughed (**purposefully**).'   Urdu

Indeed, semantic factors do seem to be at the root of most case alternations. Consider, for example, (5), in which the dative alternates with the ergative. The ergative again seems to signal greater control over the action in the sense that only the *want* modality is expressed with an ergative subject, whereas the dative can express both necessity and desire.

(5) a. **nadya=ko**   zu   ja-na   hɛ
      Nadya.F.Sg=Dat zoo.M.Sg.Loc go-Inf.M.Sg be.Pres.3.Sg
      'Nadya has/wants to go to the zoo.'   Urdu

b. **nadya=ne**   zu   ja-na   hɛ
   Nadya.F.Sg=Erg zoo.M.Sg.Loc go-Inf.M.Sg be.Pres.3.Sg
   'Nadya wants to go to the zoo.'   Urdu

In a series of papers, Butt and King (1991, 2003, 2005) discuss and analyze data as in (4) and (5) and develop what we have come to think of as *Differential Case Marking Theory* (DCT). In particular, we have argued that the classic division between structural and inherent/lexical case is not sophisticated enough to be able to account for the complex interactions between morphology, syntax and semantics that case systems usually employ. We have proposed that one needs to look at the case system of a language as whole in order to recognize and understand the uses of differential case marking. This means not defining the case system of a language based solely on the so-called structural cases (nominative, accusative, ergative), as is usually done both within generative and typological approaches (for example, the classification in (6) is fairly standard, see Plank 1995),[3] but by simultaneously also considering the role of datives, genitives, instrumentals, etc.

(6)

Case System	Agt-Pt-V	Agt-V	Pt-V	Languages
Accusative	NOM–ACC	NOM	NOM	English, Japanese, etc.
Accusative active	NOM–ACC	NOM	ACC	Acehnese, Eastern Pomo
Ergative	ERG–NOM	NOM	NOM	Dyirbal, Samoan, etc.
Ergative active	ERG–NOM	ERG	NOM	Basque, Georgian
Three-way	ERG–ACC	NOM	NOM	Nez Perce, Pitta-Pitta

In particular, DCT assumes that case always has both a syntactic and a semantic function, but that the nominative (often a phonologically unmarked case) acts as a default.[4] Case markers themselves are analyzed as contributing syntactic and semantic information to the overall clausal analyses (cf. Nordlinger's 1998 *Constructive Case*)—they are not seen as mere spell-outs of feature bundles as is assumed to be the case in much of the work within Minimalism.

---

[3]Agt=Agent, Pt=Patient. Agt-Pt codes transitive verbs whose subject and object are realized as nominative and accusative, or ergative and nominative, respectively. Agt codes unergative verbs, Pt codes unaccusative verbs.

[4]Smith (1996) argues for Icelandic that the accusative must be seen as the default case. I do not find his arguments convincing as the nominative is semantically the least restricted case, just as in South Asian languages; however, it is also possible that case defaults may be language specific.

In this paper, I continue to pursue the line of research already established by Butt and King in joint work, but try to make the point more clearly by noticing that there seems to be a close relationship between ergatives and datives in both synchronic and diachronic terms, a relationship that any theory of case needs to be able to account for. In sections 2 to 4, I present the relevant synchronic and diachronic data, in section 5 I then try to understand the ergative-dative patterns in terms of two dimensions: space and agency. Theories of case tend to only take one of these dimensions into account and I argue that both spatial semantics and the dimension of agentivity/transitivity (Hopper and Thompson 1980) must be integrated into one formal account. A consequence of such an analysis is then also that the articificial distinction between structural and inherent case disappears.

2 The Ergative

2.1 The Structural View

Ergativity as generally defined in the literature (e.g., see Plank 1979 and Manning 1996 for comprehensive discussions) is conceived of as a different way of grouping subjects vs. objects (e.g. Fillmore 1968, Egede 1760, Silverstein 1976, Dixon 1979). Plank (1979:4) concisely summarizes the idea as follows: "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). It shows accusative alignment if it identifies S_i and S_t as opposed to dO."

This basic idea, along with more standard terminology, is illustrated in (7) (see Dixon 1994:9), whereby nominative and absolutive are the unmarked case and are now often both referred to by just "nominative". A stands for transitive subject (Agent), S for intransitive subject, and O for transitive object.

(7)

$$
\begin{array}{ll}
\text{nominative} & \left\{ \begin{array}{l} \text{A ergative} \\[4pt] \text{S} \end{array} \right. \\[6pt]
\text{accusative} & \left. \begin{array}{l} \\ \text{O} \end{array} \right\} \text{absolutive}
\end{array}
$$

Most languages actually display *split-ergative* patterns. One of the most common splits involves aspect. In Urdu, for example, the ergative is generally confined to perfect morphology, as shown in (8).[5]

(8) a. **ram**   gari(=ko)   xɑrid-e-g-a
      Ram.M.Sg.Nom car.F.Sg.Nom(=Acc) buy-3.Sg-Fut-M.Sg
      'Ram will buy a/(the) car.'   Non-Perf→Nom   Urdu

   b. **ram=ne**   gari(=ko)   xɑrid-a
      Ram.M.Sg=Erg car.F.Sg.Nom(=Acc) buy-Perf.M.Sg
      'Ram has bought a/(the) car.'   Perf→Erg   Urdu

Note that the case marking in (8) does not follow the ergative vs. absolutive/nominative pattern suggested by (7): the object may optionally take accusative case. The accusative functions as a marker of specificity in Urdu (Butt 1993). This example serves to make the point that ergative patterns cannot be understood from a purely morphosyntactic point of view, but need to take semantic parameters into account. This is true not only with respect to object marking, but also with respect to the ergative itself. A purely structural approach conflicts with observations that the ergative tends to mark semantic agentivity of some sort. Children tend to acquire the ergative fairly early on, presumably by picking up on the salient notion of agency (e.g., Fortescue 1985, Narasimhan 2003). Furthermore, ergative alternations such as the one shown in (4), systematically occur in other languages as well, as the example in (10) from Tsova-Tush shows.

(9) a. (as)   vuiž-n-**as**
      1.Sg.Erg fell-Aor-1.Sg.Erg
      'I fell down, on **purpose**.' (Holisky 1987:105)   Tsova-Tush

   b. (so)   vož-en-**sO**
      1.Sg.Nom fell-Aor-1.Sg.Nom
      'I fell down, by accident.' (Holisky 1987:105)   Tsova-Tush

The purely structural view offers no ready explanations for ergative-nominative subject alternations as in (4) and (9). Nor are other types of

---

[5]A further split, the so-called *NP-split* tends to be between 1st and 2nd person pronouns vs. 3rd person nominals. Urdu does not display such a split, but see Silverstein (1976) for a very detailed discussion of different types of NP-splits.

semantically based subject alternations expected. The next section shows, however, that the ergative-dative alternation already presented in (5) is in fact a fairly typical semantically motivated subject alternation.

2.2 Subject Alternations

The Urdu data presented in (5) are repeated in (10) for convenience. Note that here, the ergative is not restricted to appear with perfect morphology and that the ergative, as well as the dative, are implicated in modal readings (desire and necessity).[6]

(10) a. **nadya=ko**   zu   ja-na   hɛ
Nadya.F.Sg=Dat zoo.M.Sg.Loc go-Inf.M.Sg be.Pres.3.Sg
'Nadya has/wants to go to the zoo.'   Urdu

b. **nadya=ne**   zu   ja-na   hɛ
Nadya.F.Sg=Erg zoo.M.Sg.Loc go-Inf.M.Sg be.Pres.3.Sg
'Nadya wants to go to the zoo.'   Urdu

Interestingly, semantically similar subject alternations can be found in other languages as well. Examples are shown in (11) and (12) for Bengali and Malayalam. Neither of these languages are ergative, so an ergative case cannot be involved in the alternation. Bengali uses the genitive case where other languages tend to employ the dative (e.g., pysch verbs).

(11) a. **ami**   tomake cai
I.Nom you.Acc wants
'I want you.' (Klaiman 1980:279)   Bengali

b. **amar** tomake cai
I.Gen you.Acc wants
'I need you.' (Klaiman 1980:279)   Bengali

(12) a. **amma**   kuṭṭiye   aḍik'k'-aṇam
mother.Nom child.Acc beat-want
'Mother must beat the child.'   Malayalam
(Butt, King and Varghese 2004)

---

[6]For a detailed analysis of these data see Butt and King 2005; see Bashir 1999 for in-depth discussion of present day usage.

7

b. **ammak'k'ə** kuṭṭiye aḍik'k'-aṇam
mother.Dat child.Acc beat-want
'Mother wants to beat the child.' Malayalam
(Butt, King and Varghese 2004)

These examples establish two points: 1) languages tend to use case alternations (on subjects as well as objects) in order to express semantic contrasts; 2) the precise type of case marker is not rigidly preordained, but depends on how the entire case system of the language functions. That is, non-ergative languages would not use an ergative in case alternations (of course) and in some languages the genitive may take on functions more usually associated with a dative, etc.[7]

---

[7]Note that not all languages necessarily will display case alternations—case alternations are simply one way to express differences in modality, aspect, etc. However, I believe that languages display more case alternations than has been recognized. Consider, for example, Icelandic, where nominatives alternate with datives, as shown in i. and ii., and datives alternate with accusatives, as shown in iii.

i. Leikjunum lyktaði með jafnetefli
the matches.Dat ended.3.Sg with draw
'The matches ended in a draw.' (Eythórsson 2002:196)

ii. Leikirnir lyktaðu með jafnetefli
the matches.Nom ended.3.Pl with draw
'The matches ended in a draw.' (Eythórsson 2002:196)

iii. Mennnina/Mönnunum vantar hnífa
the men.Acc/Dat needs.3.Sg knives.Acc
'The men need knives.' (Eythórsson 2002:197)

These alternations have been analyzed as historical processes (known as *Nominative* and *Dative Sickness*, respectively), whereby the nominative is replacing the dative and the dative is replacing accusatives. The motivations for these substitutions are generally sought in structural terms, though Eythórsson (2002) points out that Dative Sickness, at least, must be semantically motivated in that goals and experiencers tend towards datives rather than accusatives.

It seems to me that the Icelandic system as a whole is being regularized according to semantic principles, in that nominatives are now preferentially marking subjects that are themes (as in i. and ii.). However, Eythórsson (2002) points out that some of these alternations are attested as far back as Old Icelandic and thus seem to be quite stable. I take this as an indication that it would be worth investigating whether there might not actually be some subtle semantic factors driving the alternations. However, the tendency in the literature has been the opposite: semantic factors are hardly considered. When they are considered, as in Svenonius' (2002) investigation of object case in Icelandic, interesting and clear generalizations begin to emerge.

The examples in (11) and (12) have an overt modal and the case alternation merely seems to influence the type of modality that is expressed. In (10), in contrast, there is no overt modal. The expression of modality seems to follow from a combination of the copula 'be' and the non-finite main verb, and the particular case marker of the subject. Similar examples can be found in older stages of Indo-European, as the examples in (13) and (14) show.

(13) haec   **caesari**   facienda   erant
     this.Nom.Pl Caesar.Dat do.Gd.Nom.Pl be.Past.3.Pl
     'These things had to be done by Caesar.'   Latin
     'Caesar had to do these things.'

(14) samprati gan-tavyā puri   vārāṇasī   **mayā**
     now   go-Gd   city.Nom.F.Sg Benares.Nom.F.Sg I.Inst
     'now I want to go to the city of Benares'   Sanskrit

In (13) the dative is associated with necessity, in (14) the instrumental is associated with desire. The Sanskrit example in (14) is particularly interesting in the context of this paper, as Urdu is an Indo-Aryan language that is ultimately descended from a version of Sanskrit. The possibility of expressing modality through a combination of case and a non-finite main verb thus seems to have existed for a long time in the history of the language.

Sanskrit had no ergative, so the Urdu ergative case marker is an innovation. The standard historical analysis is that the modern ergative is a descendant of the old Sanskrit instrumental and that ergative alignment is a direct consequence of the reanalysis of passive clauses as active ones. If this were true, then the use of the Urdu ergative in (10) would seem to be parallel to the Sanskrit use of the instrumental in (14).

However, the situation is more complicated. In the next section, I briefly show that the standard analysis (instrumental $\longrightarrow$ ergative) cannot be upheld in the face of empirical data. Instead, there are some suggestions that the modern Urdu ergative is connected to a dative form. I explore this possibility, and in exploring it, show how the contrasting modal force of (10) can be understood to have come about. The explanation advanced in section 5 also takes into account the observation that in many languages distinct case functions are expressed by form-identical markers. An example from Urdu is *ko*, which is used for both dative and accusative functions (see Butt and King 2005 for a discussion). In other languages, the markers for instrumentals

and ergatives, or instrumentals and genitives, for example, tend to be form-identical.

3   Historical Development of the Ergative

This section first presents an overview of one purported origin of ergative constructions in general and then goes on to show that this story does not hold for Urdu. Section 4 discusses the alternative possibility that datives and ergatives in Indo-Aryan are historically closely related.

3.1   The Passive/Instrumental Hypothesis

The ergative was first noticed in languages like Basque, Greenlandic or Polynesian and was typically called *Nominative of the Agent* (*Nominativ des Handelns*) or simply *Agent* (e.g., Ray 1907, Pott 1873, Kellogg 1883). Some researchers sought to identify the presence of the ergative with a familiar construction: the passive (e.g., Schuchardt 1896, Uhlenbeck 1916). The idea was that in both the ergative and the passive, the agent argument is linked to something other than the nominative(=subject in many theories) and so the constructions are clearly related.

Basic Pattern		Passive		Ergative	
agent	patient	agent	patient	agent	patient
|	|	|	|	|	|
NOM	ACC	INST	NOM	ERG	NOM

The passive=ergative idea received support from the fact that the ergative and instrumental are form-identical in some languages (Australian, Polynesian). However, other researchers managed to establish quite firmly that ergative constructions were *active* rather than *passive* in nature (a.o., Sapir 1917, see Trask 1979:390 for further discussion) and argued that ergative constructions needed to be analyzed in their own right.

While this point has generally been conceded in the literature, the passive idea has not died away completely. In particular, it is assumed that passive constructions historically gave rise to the ergative patterns. Indeed, the path of change in Indo-Aryan is as illustrated in (15), whereby a deverbal adjectival participle was reanalyzed as a finite, active form.

(15) NPinstr NPnom V$_{derverbal\ adjectival\ participle}$ > NPerg NPnom V$_{active(perf)}$

(*der Apfel von Hans gegessen → Hans aß den Apfel*   (German))

(*the apple eaten by John → John ate the apple*)

However, although the ancestral form was participial in nature, it was not an actual passive. Furthermore, the modern Urdu ergative cannot be a direct descendant of the old instrumental (e.g., Beames 1872–79, Kellogg 1893, Klaiman 1978, Trask 1979, Zakharyin 1979, Andersen 1986, Hock 1986, Hook 1999). Despite the empirical evidence, the passive/instrumental analysis has remained popular in modern times (e.g., Pray 1976, Anderson 1977, Pirejko 1979, Bubenik 1989) and indeed is regarded as "standard" textbook knowledge (Dixon 1994, Harris and Campbell 1995). In the next section, I therefore briefly outline the facts at hand.

3.2 Problems with the Passive Hypothesis

3.2.1 The Instrumental

The standard assertion for the origin of the modern Urdu ergative *ne* is that it developed from the Sanskrit inflectional instrumental form *-ina*. This assertion was apparently first proposed by Trumpp (Beames 1987:266) and continues to be given credence despite the fact that his contemporaries immediately denounced this historical reconstruction.

Beames (1872) and Kellogg (1893) point out that the Sanskrit instrumental *-ina* had developed into *ẽ* by Middle Indo-Ayran (MIA, between 600 CE–1000 CE). Indeed, all of the non-nominative case markers in Sanskrit were subject to syncretism in MIA and eventually collapsed down to one form. Vestiges of the original non-nominative inflections can still be found in Urdu as *-e*, an oblique marker of masculine nouns in *-a* (see also Masica 1991).

Modern Urdu *ne*, on the other hand, only appeared in the 17th century (Beames 1872), and, as Butt and King 2005 (and Kellogg 1893) point out, it has the status of a clitic. While not unheard of, it is unlikely that a former case inflection would evolve into a case clitic.[8] So the modern ergative *ne* cannot be a direct descendant of the Sanskrit instrumental.

---

[8]See Butt 2001, Butt and King 2005 for a more detailed discussion on the history of the Urdu ergative.

But then, what is the origin of the modern ergative *ne*? Tracing the origin of this case marker is difficult, but I find a suggestion made by Beames (1872:270) very interesting. Beames proposes that the modern ergative *ne* comes from a dative form *nẽ*. This dative form was apparently used for subjects in a dialect of Hindi spoken in provinces adjacent to the Moghul court. His idea is that during the reign of the Moghul Emperor Shah Jehan (1627–1658) a change in administrative policies led to an influx of Hindu administrators, who might have influenced the language of the court. Given that this is not an unlikely scenario, I would like to pursue Beames' hypothesis.

The idea would be that this originally dative *nẽ* would have eventually been used to mark sentences as in (16), which display an "ergative pattern" in the sense that the agent is oblique and does not agree with the verb, whereas the nominative object does. The modern form of the subject in (16) would be *jis=ne*, that of the subject in (17) would be *kabir=ne*.

(16) **jihi**   rac-e   suraga   bhu
who.Obl create-Perf.M.Pl heaven.M.Nom earth.Nom

satta   pātāla
seven.Nom hell.M.Nom
'Who made heaven, earth, the seven hells.'   Old Hindi
[He who created heaven, earth and the seven hells.]
(Chand, Prithiraja-Rasau i.11; Beames 1872:267)

(17) masi   kāgad   chū-yo   nahī kalam   gahī
ink.Nom paper.M.Nom touch-Perf.M.Sg not **pen.F.Sg take.Perf.F.Sg**

nahi hāth jāro   juga   mahātma jehi
not hand four.Pl age.Pl glory.Nom who.Sg.Acc

kabir   jan-ā-yo   nāth
Kabir.Obl know-Caus-Perf.M.Sg lord.Nom
'Kabir touched not ink nor paper, he took not pen in hand; He made known the lord to whom is glory in the four ages.'   Old Hindi
(Kabir, Sakhi 183; Beames 1872:269)

There are two immediate questions that arise at this stage in the discussion: 1) where the basic ergative pattern comes from; 2) why a dative form would have been pressed into service to mark agency. The first question will be answered briefly in the next section. The second question is explored in section 4.

12

3.2.2 Verbal Passive vs. Adjectival Passive

The ancestral construction corresponding to the "ergative pattern" with perfect morphology in (16) and (17) furnished by the *adjectival participle* in *-ta* and its arguments. This participle could already be used as a past tense form in Sanskrit (Speijer 1886:255,294), as illustrated in (18). Note that the agent is instrumental, the theme nominative.

(18) evam-**uk-tā**   tu   haṃsena   damayantī
     so-say-Ptcp.Nom.Sg then goose.Inst.Sg Damayanti.Nom.Sg.F
     1. 'Then Damayanti was spoken to like that by the goose.'
     2. 'Then the goose spoke to Damayanti thus.'   Sanskrit
     Nalopākhyāna I,30

This basic pattern was continued into MIA (see Peterson 1998 for an analysis of MIA as ergative) and New Indo-Aryan. As already mentioned, the ergative *ne* was innovated in the 17th century to mark the oblique (formerly instrumental) agents.

While the adjectival deverbal participle in (18) had some passive force, Sanskrit also had a "standard" verbal passive in *-ya-*, as shown in (19). Note that here the agent is also marked with the instrumental and the theme is nominative.

(19) devadattena   kaṭāḥ   **kriyante**
     Devadatta.Inst.Sg mat.Nom.Pl do.Pass.3.Pl
     'by Devadatta mats are made' (adapted from Hock 1986:16) Sanskrit

An immediate question that arises is why this verbal passive did not give rise to the modern perfect morphology and, hence, to the modern ergative pattern. It turns out that instrumental agents of verbal passives (*-ya-*) were rarely expressed in both Sanskrit (Gonda 1951:22) and the later Pāli (Peterson 1998). Instrumental agents of adjectival passive participles (*-ta*), on the other hand, were almost always overtly expressed.

The instrumental agent may therefore have had a very different syntactic status with respect to the passive and the adjectival participle. It could have functioned as a true adjunct in the passive, but as an argument of the participle. It does seem clear that the passive and the adjectival participle served to highlight participants of the event in different ways. The one in which the agent was expressed is the ancestor of the modern transitive perfect morphology (e.g., (8), (16)–(17)).

Interestingly, the agent of the adjectival participle seems to have engaged in a subject alternation as well. Andersen (1986) notes that in Aśokan (MIA) inscriptions the agent of the *-ta* construction can appear either with the genitive or the instrumental. The genitive is rarer and can only be used when the agent is animate. No such restriction applies to the instrumental. One can thus conclude that case marking was sensitive to semantic factors on subjects at least as far back as MIA.

4 The Dative-Ergative Connection

4.1 Case Alternations and Markedness

Sanskrit (Old Indo-Aryan) also employed case alternations to express differences in semantic import. Some of the clearest examples come from object alternations (Jamison 1976) and one of the more interesting ones is found with causees.

Consider the examples in (20), which illustrate an accusative and an instrumental causee, respectively (*queen* and *dogs*). The difference signaled by the instrumental vs. the accusative has been described by Speijer (1886) as cited in (21).

(20) a. mantrapūtam   carum   **rājñīm**   prāśayat
     consecrated.Acc porridge.Acc queen.Sg.**Acc** eat.Caus.Impf.3.Sg

     munisattamaḥ
     best-of-ascetic.Nom
     'the best of ascetics made the queen eat a consecrated porridge.'
     (Kathaāsaritsāgar 9.10)   Sanskrit

   b. tām   **śvabhiḥ**   khādayet   rājā
     Demon.F.Sg.Acc dog.Pl.**Inst** eat.Caus.Opt.3.Sg king.Nom
     'Her the king should order to be devoured by dogs.'   Sanskrit
     (Mahābhārata 8.371)

(21)   If one wants to say *he causes me to do something, it is by his impulse I act*, there is room for the type [accusative causee], but if it be meant *he gets something done by me, I am only the agent or instrument through which he acts*, the instrumental is on its place. [Speijer (1886:§49)]

Now consider the causative pattern in (22). Again, an accusative and an instrumental causee give rise to differences in semantic interpretation. This difference has been analyzed in terms of affectedness in the more recent literature (Saksena 1980). The instrumental causee is incidental to the event, in the sense that it is just the instrument by which the caused event was brought about. The accusative causee, in contrast, is seen as being simultaneously affected by the event (some change takes place in the accusative causee).

(22) a. ɑnjʊm=ne   sɑddɑf=**ko**   masala   cɑkʰ-va-ya
        Anjum.F=Erg Saddaf.F=**Acc** spice.M.Nom taste-**Caus**-Perf.M.Sg
        'Anjum had Saddaf taste the seasoning.'   Urdu

    b. ɑnjʊm=ne   sɑddɑf=**se**   masala   cɑkʰ-va-ya
        Anjum.F=Erg Saddaf.F=**Inst** spice.M.Nom taste-**Caus**-Perf.M.Sg
        'Anjum had the seasoning tasted by Saddaf.'   Urdu

These examples are interesting to consider in the context of this paper because they show that even though the case markers of a language may erode away completely and be replaced by innovations relatively late, the basic semantic opposition that is signaled by the case markers can be retained.

The new instrumental *se* comes from a preposition meaning 'with', the *ko* can apparently be traced back to a noun meaning 'side' (or 'armpit', Beames 1872:§56, Kellogg 1893). The accusative *ko* in Urdu/Hindi is form-identical with the dative *ko* that was seen in the ergative-dative alternation in (10). This *ko* was apparently first used to mark goal arguments, then spread later to mark theme/patient arguments as well.

Recall from section 3.2.1 that Beames (1872) suggested that the modern ergative *ne* is also related to an originally dative form. One can thus step back and ask how it is possible that datives can develop both into accusatives and ergatives, two case markers that would seem to be at opposite ends of the agentivity spectrum. In the next section, I examine the likelihood of the ergative-dative connection and then in section 5 move on towards trying to provide an explanation for the diachronic case developments by taking the synchronic case alternations into account.

4.2 The Dative Connection

Beames' (1872) suggestion that the modern ergative *ne* is related to a dative *nẽ* is difficult to substantiate via diachronic data. However, if one takes even a cursory look at dative and ergative forms across some of the modern Indo-Aryan languages, one finds suggestive correlations. Consider the data in (23). In the dative column, there are some *k*- forms, which are all presumably related to the dative/accusative *ko*. None of the *k*- forms appear in the ergative column. However, case markers in *n*- and in *l*- are found across both columns. In particular, within Gujarati and Nepali, the forms for ergative and dative are very similar.

(23)

	Dative (subjects and objects)	Ergative (subjects only)
Hindi/Urdu	ko	ne
Punjabi	nũ	ne
Sindhi	kʰe	OBLIQUE INFLECTION
Gujarati	ne/nẽ	-e (old -nē)
Marathi	lā	ne/ni
Bengali	ke	NONE
Oṛiya	ku	NONE
Assamese	ko/no	-e
Nepali	lāī	le

While the historical origin and actual relatedness of these forms needs to be looked at in further work, the available patterns do point to a certain fluidity in form in the sense that the form that is pressed into service as the dative in one language can very well turn up as an ergative in a sister language (or even in the same language). For example, the same *ne* shows up as an ergative in Marathi, but as a dative in Gujarati.

My working hypothesis therefore is to accept Beames' suggestion and to assume that the modern ergative *ne* was first introduced into the language as a non-nominative subject case marker which was used to reinforce semantic contrasts with existing subject markings. The unmarked nominative already existed when the *ne* first entered the language, as did a version of the dative/accusative *ko* (cf. (16)–(17), Beames 1872). Given that *ko* was already used to mark goals, there are two options when *ne* enters the language. Under one scenario this new, fashionable case marker could have been used to

ultimately replace the *ko.* Or, the new case marker could be slotted into a system of semantically motivated case oppositions in order to overtly mark a new, or an already existing distinction.

Consider the Urdu data in (24). Here the ergative is associated with control over an action, while the dative expresses typical goal semantics (cf. Verma and Mohanan 1990 on experiencer subjects in South Asian languages). In (24a), the memory is actively recalled, in (24b), the memory comes to the person, unbidden.

(24) a. **nadya=ne**   kɑhani   yad   **k-i**
Nadya.F.Sg=Erg story.F.Sg.Nom memory do-Perf.F.Sg
'Nadya remembered the story (actively).'   Urdu

    b. **nadya=ko**   kɑhani   yad   **a-yi**
Nadya.F.Sg=Dat story.F.Sg.Nom memory come-Perf.F.Sg
'Nadya remembered the story (memory came to Nadya).'   Urdu

Note that in (24) the choice of light verb ('do' vs. 'come') already encodes the control vs. goal distinction. In existing semantic oppositions like this, the new case marker *ne* could have been slotted in neatly to reinforce an already existing distinction. The semantics thus invested in the *ne* case in opposition to the *ko* marker could then be further extended to other constructions in the language, such as the ergative-dative alternation in (10), repeated here in (25).

(25) a. **nadya=ko**   zu   ja-na   hɛ
Nadya.F.Sg=Dat zoo.M.Sg.Loc go-Inf.M.Sg be.Pres.3.Sg
'Nadya has/wants to go to the zoo.'   Urdu

    b. **nadya=ne**   zu   ja-na   hɛ
Nadya.F.Sg=Erg zoo.M.Sg.Loc go-Inf.M.Sg be.Pres.3.Sg
'Nadya wants to go to the zoo.'   Urdu

As discussed in section 5, the differing modal interpretations follow directly from the control vs. goal contrast.

4.3 A System of Contrasts

The semantic import of a case marker thus emerges out of a system of contrasts. Manfred Krifka (p.c.) points out that the system of oppositions I propose for case is very reminiscent of what happens with reduplication. The semantics of reduplication are notoriously difficult to define. Consider, for example the Bengali sentence in (26a) along with two different reduplicated versions of the object 'black spiders' in (26b) and (26c).

(26) a. or bari-te   kalo makorša dekʰ-e-čʰo,   na ki?
       his house-Loc black spider(s) see-Perf-Pres-2 Neg Q
       'Did you (really) see black spiders at his house?'   Bengali
       (Fitzpatrick-Cole 1994:162)

   b. kalo ṭalo   makorša
      black Redup spider(s)
      'black and other colored spiders'   Bengali

   c. kalo makorša ṭakorša
      black spider(s) Redup
      'black spiders and other (not necessarily black) beasties'   Bengali

Krifka observes that the precise meaning of the reduplicated part of a phrase cannot be recovered from the reduplicated phrase itself, but crucially seems to constitute itself out of the contrast with the non-reduplicated version. With respect to case semantics, this means that the semantic import of a particular case marker could be rather wide, and that its particular semantics in a given clause must be understood as part of a system of contrasts.

4.4 Dimensions of One Meaning: Agency and Goal

Given the idea that a case marker could encompass a very wide set of meanings that is rendered more precise within a system of case oppositions, this section explores a possible ancestral form that could have given rise to both the dimensions of agency/control (core ergative semantics) and goal (core dative semantics).

Beames and Kellogg propose the participial form *lage* of the verb *lag* 'stick to' as a possible ancestor for the modern ergative *ne*. However, this seems unlikely on both phonological and semantic grounds. Joint research

with Aditi Lahiri has suggested that the ergative *ne* could be related to the Bengali postposition *jonno* 'for', which is derived from the Sanskrit locative *janiyē* of *janiyā* 'for the sake of, because of' (Chatterji 1926).

This postposition is phonologically a much more likely ancestor and, as illustrated in (27), one can also see how the meaning of this postposition could have given rise to both goal (dative) and control (ergative) readings.

(27)

$$janiy\bar{e}$$

'because of'	'for the sake of'
(control)	(goal)
↓	↓
ergative	dative
↑	↑
Gujarati, Urdu *ne*	Gujarati *ne/nẽ*
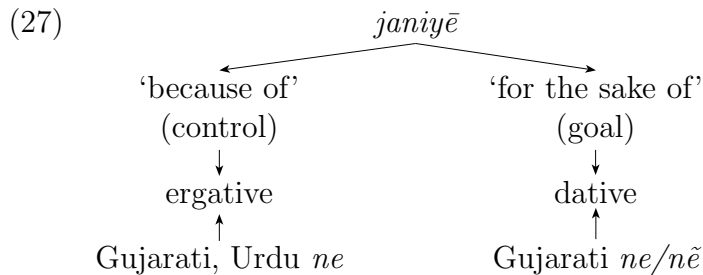
The German preposition *wegen*, derived from the dative plural of *Weg* 'way' shows exactly this range of semantics as well. Example (28) illustrates the 'because of' (agency/control) reading, (29) is an example of the 'for the sake of' (goal) reading.[9]

(28) wegen   ihm   zerbrach die Vase
     because he.Dat broke   the vase
     'Because of him the vase broke'   German

(29) wegen   ihm   schaffte ich   einen Hund an
     because he.Dat acquired I.Nom a.Acc dog   at.Prt
     'I got a dog for him.'   German

German *Weg* 'way' is a spatial concept. It is well-known that case markers often derive from spatial prepositions, but what is not as clear is how the dimension of agency can be acquired by something that is originally a spatial concept. In the next section, I suggest that case markers and prepositions derived from originally spatial concepts acquire an agency interpretation by virtue of playing a role in marking participants of an event.

---

[9]Another possible point of comparison might be the Ancient Greek 'dative of agency', which appears in passives with both a benefactive and an agentive meaning (e.g., Green 1966).

5 Space and Agency

It has by now been firmly established in linguistic theory that spatial concepts are fundamental to language and the structuring of events. Localist ideas of case (e.g., Hjelmslev 1935, Anderson 1971, 1977) have found their way into modern ideas on argument linking like Gruber (1965) or Jackendoff's work. Jackendoff (1990) in particular has identified the notions of *place* and *path* as being of particular importance.

It has also been established that the degree of control over an action is important in argument realization and case marking (e.g., Silverstein's 1976 *NP hierarchy*, Hopper and Thompson's 1980 notion of *Transitivity*, Wierzbicka's 1981 idea that experience/affectedness (lack of control) is central). However, most theories of case (and argument linking) focus only on either the spatial metaphors or the animacy/control dimensions, but not on both. It is not clear to me why this should be the case, but the data presented in the previous sections provide evidence that spatial concepts and notions of control must be taken into account simultaneously.

In (30), I present a two-dimensional view of case. On one dimension, case markers are placed in a relationship to one another with respect to more or less control. The idea is that if a language has an ergative, it will use that to mark agents. After that genitives make good agentive markers, then instrumentals, then datives. For example, recall the MIA genitive-instrumental alternation based on animacy that was briefly discussed in section 3.2.2. Genitives in that alternation were more marked and only used for animate agents. This is entirely in keeping with the arrangement proposed in (30).

(30)

MORE CONTROL	PLACE	PATH
Ergative		
Genitive		
Instrumental		
Dative		
Accusative		
LESS CONTROL		

I consider the spatial dimension to be primary. The control/agency dimension is derivative in that it comes about because the arguments of an event, besides being placed in a spatial relationship to one another, also act

upon another. Case markers are therefore generally interpreted simultaneously with respect to both dimensions.

Genitives tend to express possession, which is basically a notion of place: x be at y. Ergatives are also sometimes observed in conjunction with possession, so I assume a place specification for ergatives. Instrumentals can express both place and path because "with x" can be interpreted both as "x be at y" and as "x go along with y". Comitative uses are therefore also included in this use. The dative expresses a place, and the accusative a path.[10]

A dative can therefore be interpreted both as a goal (place), and, in contrast to another case marker, as an agent with reduced control over the action. This latter is what gives rise to experiencer subjects such as the Icelandic example in (3) or the Urdu example in (24). In Urdu, the dative contrasts with the ergative. In Bengali, the genitive contrasts with the nominative. Given that Bengali has no ergative case, the nominative acts as the default marker for agents and the genitive in contrast with the nominative indicates reduced control over the action.

The nominative does not feature in (30). I consider the nominative as a default case and therefore do not rank it within (30). If the nominative is the default agent marker, then the dative is marked in contrast to indicate non-default agents (experiencers).

Form identity of case markers is expected when a case marker spreads over several cells. This is expected as part of language change when new case markers enter the language, or engage in competition in a system of semantic contrasts. For example, if a new case marker enters a language and if this new case marker can express low control(=affectedness) and both the spatial dimensions of place and path, then this case marker could take over the semantic space of the accusative as well as the dative, thus resulting in homophony of the accusative and dative. This is true of Urdu and is observed quite often crosslinguistically.

Overall, the two-dimensional picture in (30) allows quite a few predictions with respect to both synchronic and diachronic data. Whether these predictions are indeed borne out, or whether the picture must potentially be revised remains the subject of further research.

---

[10]The path component of accusatives serves as a natural semantic basis for expressing telicity. A telic event is one which is completed, i.e., one in which one has arrived at the end of a path (see Ramchand 1997 for some discussion). Indeed, accusatives, but not datives are implicated in expressions of telicity.

5.1 The Ergative-Dative Alternation Revisited

With respect to the ergative-dative alternation the integration of space and agency/control into one picture, as in (30), does allow for a better understanding of the phenomenon. As already indicated in section 4.2, the use of the dative with a copula and a non-finite main verb, as in (31b), historically precedes the use of the ergative with this construction. In her detailed study of present-day usage of the construction, Bashir (1999) notes that the ergative is slowly encroaching on the domain of the dative. That is, the ergative is being slotted into this construction to provide a sharp semantic contrast with the dative.

(31) a. **nadya=ne**   zu   ja-na   hɛ
       Nadya.F.Sg=Erg zoo.M.Sg.Loc go-Inf.M.Sg be.Pres.3.Sg
       'Nadya wants to go to the zoo.'   Urdu

      b. **nadya=ko**   zu   ja-na   hɛ
       Nadya.F.Sg=Dat zoo.M.Sg.Loc go-Inf.M.Sg be.Pres.3.Sg
       'Nadya has/wants to go to the zoo.'   Urdu

I propose that the differing modal readings in (31a) and (31b) can be accounted for as follows. The copula 'be' places a participant (Nadya) and an event (zoo going) into a relationship with one another. It is not said what this relationship is. In (31b), *Nadya* is marked as a dative, can thus be interpreted as a goal and as "receiving" the *zoo going* event. But since datives can also simultaneously be interpreted on the control dimension, (31b) is also compatible with a control/agentive reading.

The modal semantics of the construction are triggered because a non-finite event is placed in relationship with a subject. The precise nature of the modal semantics is determined by the case marker. With respect to (31b), because of the simultaneous interpretation of the dative on the spatial and the control dimensions, the modal reading could play out to be either one of obligation (goal) or of desire (goal+control). Another way to think about it is that we actually do not know anything about the inner state of goals: nothing is predicated about whether goals want or hate what they get (cf. *I got a cold.* (undesirable) vs. *I got a present.* (possibly desirable)). When a control dimension is added, however reduced that control may be, a desire reading becomes likely.

The Urdu ergative *ne*, in contrast, is only interpreted on the control dimension and signals a very high degree of control. It therefore unambiguously marks the participant Nadya in (31a) as having control. This results in a reading whereby she wants the event being placed in relationship to her. The ergative thus expresses a marked situation in contrast to the dative, which functions as default marker by allowing for both the desire and the obligation readings. While the modal readings associated with both case markers in (31) are consistent with the very general semantics they encode, the precise semantic interpretation only comes about by understanding the case markers as employed in contrast to one another and as situated within the case system of the language as a whole.

5.2   Control and the Agentivity Lattice

A different way of trying to understand the semantic space occupied by individual case markers within the case system of a language comes from a recent proposal by Grimm (2005). Basing himself mainly on Dowty's (1991) criteria for Proto-Agents and Proto-Patients, Grimm proposes a lattice analysis of case marking. The semantic lattice he designs consists of four privative features that identify agents: *instigation, volition, motion, and sentience.* In addition, prototypical agents are characterized by total persistence for the duration of an event, which sets them apart from prototypical patients (agents do not change during the course of an event, but patients typically do in some way).

In the light of the ideas proposed in this paper, Grimm's approach is interesting because he rejects the notion of *control* as a primitive feature. He sees control as being an amalgamation of the privative features he uses to build the lattice. So, if something has all four of the features *instigation, motion, sentience and volition*, then this entity has the highest control over an action that is possible. If an entity is characterized by just three, two or one of the four features (e.g., *motion, sentience and volition*), then this entity has comparatively less control over an action.

Grimm also proposes that cases be seen as occupying different spaces within the lattice. The dative, for example, is associated with just *sentience*, indicating a weak form of control. The ergative is associated with the range from all four features to just *sentience* and *volition*. The instrumental is associated with the spectrum from *motion* and *instigation* to just *motion* or *instigation*. A comparison of Grimm's division of the available semantic
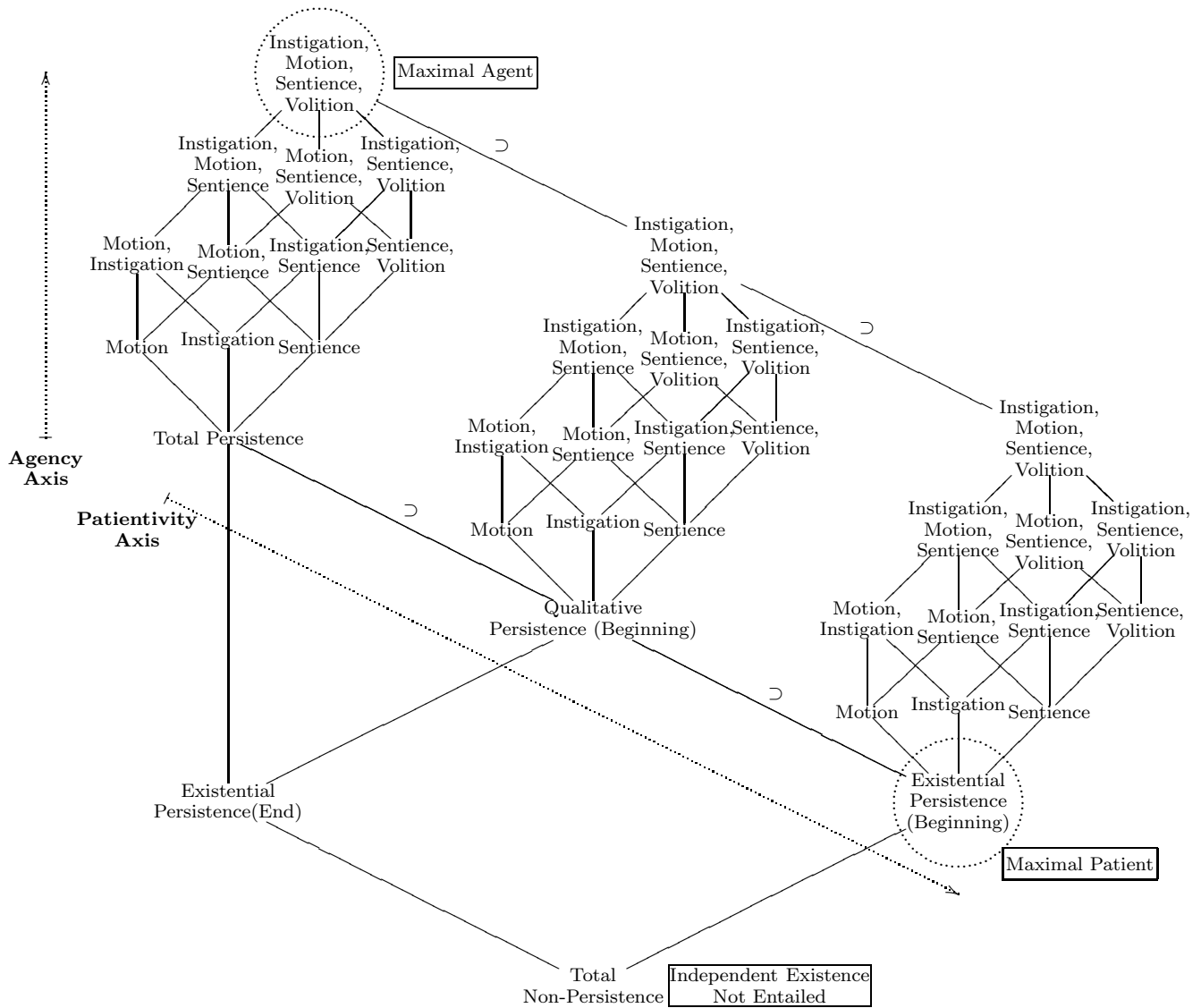
Figure 1: The Agentivity Lattice

space on the lattice with respect to case and the schema presented in (30) yields the encouraging result that the case markers have been identified in a similar manner in terms of the agency/control dimension. Grimm's proposal can thus be seen as fleshing the schema in (30) out with a more precise characterization of what the notion "control" actually entails.

Grimm's analysis does not, however, as yet include the spatial dimension.

Integrating this dimension and then exploring the predictions of the lattice approach and the schema in (30) with respect to case alternations and case syncretism/homonymy remains the subject of further research.

6   Conclusion

The synchronic and diachronic data presented in this paper suggests that the import of case cannot be seen as a purely structural or lexical/idiosyncratic phenomenon. Rather, the semantics of case play an important part in compositional semantics. The data from case alternations has furthermore shown that the precise semantic contribution of each case marker cannot be understood in isolation, but must be analyzed in terms of the entire case system of the language and in terms of the contrasts that are expressed. In particular, case needs to be understood in terms of two dimensions simultaneously: space and control/agency.

References

Aissen, Judith. 1999. Markedness and Subject Choice in Optimality Theory. *Natural Language and Linguistic Theory* 17(4):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 Aśoka: Passiv oder Ergativ? *Zeitschrift für vergleichende Sprachforschung* 99:75–95.

Anderson, John M. 1971. *The Grammar of Case: Towards a Localistic Theory.* Cambridge: Cambridge University Press.

Anderson, John M. 1977a. *On Case Grammar: Prolegomena to a Theory of Grammatical Relations.* London: Croom Helm.

Anderson, Stephen R. 1977b. On Mechanisms by which Languages become Ergative. In *Mechanisms of Language Change*, ed. Charles Li. 317–363. Austin, TX: University of Texas Press.

Bashir, Elena. 1999. The Urdu and Hindi Ergative Postposition *ne*: Its changing role in the Grammar. In *The Yearbook of South Asian Languages and Linguistics*, ed. Rajendra Singh. 11–36. New Delhi: Sage Publications.

Beames, John. 1872–79. *A Comparative Grammar of the Modern Aryan Languages of India*. Delhi: Munshiram Manoharlal. Republished 1966.

Böhtlingk, Otto. 1839–40. *Pâṇinis Grammatik*. Delhi: Motilal Banarsidass. Republished in 1998.

Bubenik, Vit. 1989. On the Origins and Elimination of Ergativity in Indo-Aryan Languages. *Canadian Journal of Linguistics* 34:377–398.

Butt, Miriam. 1993. Object specificity and agreement in Hindi/Urdu. In *Papers from the 29th Regional Meeting of the Chicago Linguistic Society*, 80–103.

Butt, Miriam. 2006. *Theories of Case*. Cambridge: Cambridge University Press.

Butt, Miriam, and Tracy Holloway King. 1991. Semantic Case in Urdu. In *Papers from the 27th Regional Meeting of the Chicago Linguistic Society*, ed. L. Dobrin, L. Nichols, and R.M. Rodriguez, 31–45.

Butt, Miriam, and Tracy Holloway King. 2003. Case Systems: Beyond Structural Distinctions. In *New Perspectives on Case Theory*, ed. Ellen Brandner and Heike Zinsmeister. 53–87. Stanford: CSLI Publications.

Butt, Miriam, and Tracy Holloway King. 2005. The Status of Case. In *Clause Structure in South Asian Languages*, ed. Veneeta Dayal and Anoop Mahajan. 153–198. Berlin: Springer Verlag.

Butt, Miriam, Tracy Holloway King, and Anila Varghese. 2004. A Computational Treatment of Differential Case Marking in Malayalam. In *Proceedings of the International Conference on Natural Language Processing (ICON) 2004*. Hyderabad.

Chatterji, Suniti Kumar. 1926. *The Origin and Development of the Bengali Literature, Volume II*. Calcutta: D. Mehra, Rupa & Co. 1975 edition.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.

Davison, Alice. 1999. Ergativity: Functional and Formal Issues. In *Functionalism and Formalism in Linguistics, Volume I: General Papers*, ed. Michael Darnell, Edith Moravcsik, Frederick Newmeyer, Michael Noonan, and Kathleen Wheatley. 177–208. Amsterdam: John Benjamins.

de Hoop, Helen. 1996. *Case Configuration and Noun Phrase Interpretation*. New York: Garland.

Dixon, R. M. W. 1979. Ergativity. *Language* 55:59–138.

Dixon, R. M. W. 1994. *Ergativity*. Cambridge: Cambridge University Press.

Dowty, David. 1991. Thematic proto-roles and argument selection. *Language* 67(3):547–619.

Egede, Paul. 1760. *Grammatica Groenlandico Danico-Latina*. Copenhagen: ULO.

Enç, Mürvet. 1991. The Semantics of Specificity. *Linguistic Inquiry* 22(1):1–25.

Eythórsson, Thórhallur. 2002. Changes in Subject Case-Marking in Icelandic. In *Syntactic Effects of Morphological Change*, ed. David Lightfoot. 196–212. Oxford: Oxford University Press.

Fillmore, Charles J. 1968. The case for case. In *Universals of Linguistic Theory*, ed. Emmon Bach and R.T. Harms. 1–88. New York: Holt, Rinehart and Winston.

Fitzpatrick-Cole, Jennifer. 1994. *The Prosodic Domain Hierarchy in Reduplication*. Doctoral dissertation, Stanford University.

Fortescue, Michael. 1985. Learning to speak Greenlandic: A case study of a two-year-old's morphology in a polysynthetic language. *First Language* 5:101–114.

Gonda, Jan. 1951. *Remarks on the Sanskrit Passive*. Leiden: E. J. Brill.

Green, Alexander. 1966. *The Dative of Agency: A Chapter of Indo-European Syntax.* New York: AMS Press.

Grimm, Scott. 2005. The Lattice of Case and Agency. MSc Thesis, Universiteit van Amsterdam.

Gruber, Jeffrey S. 1965. *Studies in Lexical Relations.* Doctoral dissertation, MIT.

Harris, Alice C., and Lyle Campbell. 1995. *Historical Syntax in Cross-Linguistic Perspective.* Cambridge: Cambridge University Press.

Hjelmslev, Louis. 1935. *La catégorie des cas.* Aarhus: Universietsforlaget.

Hock, Hans Henrich. 1986. P-oriented Constructions in Sanskrit. In *South Asian Languages: Structure, Convergence and Diglossia*, ed. Bh. Krishnamurti. Delhi: Motilal Banarsidass.

Hock, Hans Henrich. 1991. Possessive agents in Sanskrit? In *Studies in Sanskrit Syntax*, ed. Hans Henrich Hock. 55–69. Delhi: Motilal Barnasidass.

Holisky, Dee Ann. 1987. The case of the intransitive subject in Tsova-Tush (Batsbi). *Lingua* 71:103–132.

Hook, Peter Edwin. 1999. On Identifying the Conceptual Restructuring of the Passive as Ergative in Indo-Aryan. In *Pāṇinian Studies*, ed. Madhav M. Deshpande and Saroja Bhate. 177–199. Ann Arbor, Michigan: Center for South and Southeast Asian Studies, University of Michigan.

Hopper, Paul, and Sandra Thompson. 1980. Transitivity in Grammar and Discourse. *Language* 56:251–299.

Jackendoff, Ray. 1990. *Semantic Structures.* Cambridge: The MIT Press.

Jamison, Stephanie. 1976. Functional Ambiguity and Syntactic Change: The Sanskrit Accusative. In *Papers from the Parasession on Diachronic Syntax, 12th Regional Meeting of the Chicago Linguistic Society*, 126–135.

Jónnson, J.G. 1997–8. Sagnir með aukafallsfrumlagi [Verbs with oblique subjects]. *Íslenskt mál* 19–20:11–43.

Katre, Sumitra M. 1987. *Aṣṭādhyāyī of Pāṇini*. Delhi: Motilal Banarsidass. Republished in 1989.

Kellogg, S. H. 1893. *Grammar of the Hindi Language*. Delhi: Munshiram Manoharlal Publishers Pvt. Ltd. Second Edition, reprinted 1990.

Kiparsky, Paul. 1998. Partitive Case and Aspect. In *The Projection of Arguments: Lexical and Compositional Factors*, ed. Miriam Butt and Wilhelm Geuder. 265–307. Stanford: CSLI Publications.

Klaiman, M. H. 1978. Arguments Against a Passive Origin of the IA Ergative. In *The Proceedings of the 14th Meeting of the Chicago Linguistic Society*, 204–216.

Klaiman, M. H. 1980. Bengali Dative Subjects. *Lingua* 51:275–295.

Klimov, Georgij A. 1974. On the Character of Languages of Active Typology. *Linguistics* 131:11–25.

Manning, Christopher D. 1996. *Ergativity: Argument Structure and Grammatical Relations*. Stanford: CSLI Publications.

Masica, Colin. 1991. *The Indo-Aryan languages*. Cambridge: Cambridge University Press.

Mohanan, Tara. 1994. *Argument Structure in Hindi*. Stanford, CA: CSLI Publications.

Narasimhan, Bhuvana. 2003. Agent Case-Marking in Hindi Child Language. Max Planck Institute for Psycholinguistics, Under Review.

Nordlinger, Rachel. 1998. *Constructive Case: Evidence from Australian Languages*. Stanford, CA: CSLI Publications.

Pesetsky, David, and Esther Torrego. 2001. T-to-C Movement: Causes and Consequences. In *Ken Hale: A Life in Language*, ed. Michael Kenstowicz. Cambridge: The MIT Press.

Peterson, John M. 1998. *Grammatical Relations in Pāli and the Emergence of Ergativity in Indo-Aryan*. München: LINCOM Europa.

Pirejko, L. A. 1979. On the Genesis of the Ergative Construction in Indo-Iranian. In *Ergativity: Towards a Theory of Grammatical Relations*, ed. Frans Plank. 481–488. New York, NY: Academic Press.

Plank, Frans (ed.). 1979. *Ergativity: Towards a Theory of Grammatical Relations.* New York, NY: Academic Press.

Plank, Frans. 1995. Research into Syntactic Change III: Ergativity. In *Syntax: An International Handbook of Contemporary Research*, ed. Joachim Jacobs, Arnim von Stechow, Wolfgang Sternefeld, and Theo Vennenmann. 1184–1199. Berlin: Walter de Gruyter.

Pott, A.F. 1873. Unterschied eines transitiven und intransitiven nominativs. *Beiträge zur vergleichenden Sprachforschung auf dem Gebiete der arischen, celtischen und slawischen Sprachen* 7:71–94.

Pray, Bruce. 1976. From Passive to Ergative in Indo-Aryan. In *The Notion of Subject in South Asian Languages*, 195–211. Madison, WI. University of Wisconsin. South Asian Studies Publication Series 2.

Ramchand, Gillian. 1997. *Aspect and Predication.* Oxford: Oxford University Press.

Ray, Sidney H. 1907. *Reports of the Cambridge Anthropological Expedition to Torres Straits, Volume II: Linguistics.* Cambridge: Cambridge University Press.

Saksena, Anuradha. 1980. The Affected Agent. *Language* 56(4):812–826.

Sapir, Edward. 1917. Review of C.C. Uhlenbeck, "Het passieve karakter van het verbum transitivum of van het verbum actionis in talen van Noord-Amerika. *International Journal of American Linguistics* 1:82–86.

Schuchardt, Hugo. 1896. Über den passiven Charakter des Transitivs in den kaukasichen Sprachen. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften (Wien), Philosophisch-historische Classe* 133(1):1–91.

Silverstein, Michael. 1976. Hierarchy of features and ergativity. In *Grammatical Categories in Australian Languages*, ed. R. M. W. Dixon. 112–171. Canberra: Australian Institute of Aboriginal Studies.

Smith, Henry. 1996. *Restrictiveness in Case Theory*. Cambridge: Cambridge University Press.

Speijer, J. S. 1886. *Sanskrit Syntax*. Delhi: Motilal Banarsidas. Republished 1973.

Svenonius, Peter. 2002. Icelandic Case and the Structure of Events. *Journal of Comparative Germanic Linguistics* 5:197–225.

Trask, R. L. 1979. On the Origins of Ergativity. In *Ergativity: Towards a Theory of Grammatical Relations*, ed. Frans Plank, 385–404. New York, NY. Academic Press.

Uhlenbeck, C. Cornelis. 1916. Het passieve karakter van het verbum transitivum of van het verbum actionis in talen von Noord-Amerika. *Verslagen en mededeelingen der Koninklijke Akademie van Wetenschappen. Afd. Letteren* 187–216. 5e reeks.

Verma, M. K., and K.P.Mohanan (ed.). 1990. *Experiencer Subjects in South Asian Languages*. Stanford, CA: CSLI Publications.

Wierzbicka, Anna. 1981. Case Marking and Human Nature. *Australian Journal of Linguistics* 1:43–80.

Woolford, Ellen. 2006. Lexical Case, Inherent Case and Argument Structure. *Linguistic Inquiry* 37(1):111–130.

Zaenen, Annie, Joan Maling, and Höskuldur Thráinsson. 1985. Case and grammatical functions: The Icelandic passive. *Natural Language and Linguistic Theory* 3:441–483. Reprinted in Joan Maling and Annie Zaenen (Eds.) *Syntax and Semantics 24: Modern Icelandic Syntax*, 95–164. New York: Academic Press. 1990.

Zakharyin, Boris. 1979. On the Formation of Ergativity in Indo-Aryan and Dardic. *Osmania Papers in Linguistics* 5:50–71.