Deriving Case syncretism in Differential Object marking systems*

Zhanna Glushan
University of Connecticut
zhanna.glushan@uconn.edu

April 26th, 2010

Abstract

The phenomenon of Differential Object Marking has been a topic of research in syntax (Aissen (2003), Næss (2004), Torrego (1998), Carnie (2005) among others) and morphology (Keine and Müller (2008)). The survey of the literature describing the DOM phenomenon (Bossong (1985), (1991), (1997), Baerman et al (2005) among others) reveals three major patterns of syncretism in DOM cross-linguistically. This paper offers a unified account of the three major patterns of syncretism in DOM. I argue for the existence of a single unified DOM rule. I propose that the choice of a case syncretism pattern in a DOM language is determined by (i) the presence/absence of Nom=Acc syncretism (Neutralization rule) (ii) the order of application between the DOM rule and the Neutralization rule. The advantage of this proposal is that the specific outcome of the DOM rule is partly predicted from the properties of a language's case system. The paper makes a theoretical contribution by providing an empirical and conceptual argument in favor of a 'feature freezing' operation (Calabrese (1998)) in contrast to an impoverishment operation (Halle and Marantz (1994)).

1. Introduction

The phenomenon of Differential Object Marking (DOM) has been a topic of research in syntax (Aissen (2003), Næss (2004), Torrego (1998), Carnie (2005), Rodríguez-Mondoñedo (2007) among others) and morphology (Keine and Müller (2008)). The term DOM is generally used to refer to the observation that some languages with overt case-marking of direct objects mark objects differently depending on their semantic and pragmatic features (Bossong (1985), (1991) Aissen (2003)).

For example, Russian Masc (Infl class I) nouns in direct object position bear Gen case if animate, and remain unmarked, i.e. bear Nom case, otherwise.

(1) a. Ja vižu studenta
I see student$_{Acc=Gen}$
'I see a student'

* Acknowledgements: Significant contributions to this paper have been made by my advisor Jonathan Bobaljik to whom I am deeply thankful. I am also grateful to my overseers: Andrea Calabrese and Harry van der Hulst for their helpful comments and discussion. I would like to thank Pavel Caha, Heidi Harley, Mary Goodrich, Natasha Fitzgibbons, as well as the audience at Linguistic Society of America, Annual Meeting 2010 for contributing to this material. All errors are mine.

b. Ja vižu zamok na dveri
I see $\text{lock}_{\text{Acc=Nom}}$ on door
'I see a lock on the door'

The phenomenon of DOM occurs across a wide range of languages and is triggered by properties that include but are not limited to animacy, specificity and definiteness.
The general intuition expressed in the literature is that this special case marking is a reflex of the markedness of highly individuated or prominent objects. Given that the basic function of case marking on core arguments is to distinguish between subjects and objects, DOM marking functions as a means to disambiguate highly individuated objects from subjects (Aissen (1999)).

In this paper, I will be mainly concerned with the morphology of DOM. In particular, I will be looking at case syncretisms observed in DOM systems. I will show that a survey of the literature describing the DOM phenomenon reveals three patterns of case syncretism in DOM, with some of them more frequent than others (Bossong (1985), (1991),(1997)).

This paper has two goals: (i) I will attempt to provide a unified account of the typology of case syncretism in DOM languages. (ii) I will argue for the existence and conceptual need of an operation of 'feature freezing' (Calabrese (2002). I will present 'feature freezing' as an alternative to underspecification and impoverishment, the two primary mechanisms used to derive case syncretism in Distributed Morphology framework (Halle and Marantz (1993)).

In my account of case syncretism patterns in DOM, I will propose a single DOM rule derived in terms of Calabrese's (2008) case feature system. I will also argue for a Neutralization rule which will derive Nominative=Accusative case syncretism. The different case syncretism patterns observed in DOM systems will result from the interaction between the DOM rule and the Neutralization rule. The choice of the case form syncretic with the Accusative form will depend on the presence/ absence of Nominative=Accusative syncretism in the language, as well as on the order of application of these two rules. In other words, the specific outcome of the DOM rule will be partly predicted by the properties of a language's case system. Specifically, the analysis predicts: (i) for languages/classes in which no Nominative=Accusative syncretism obtains, only Dative case can be the output of the DOM rule (i.e. Acc' (special marked Acc) syncretic with Dat) (ii) for languages/classes in which Nominative=Accusative syncretism obtains, the outcome of the DOM rule may be a special marked Accusative case (Acc') or syncretism of Acc' with either Dative or Genitive case.

The technical implementation of the analysis will appeal to an operation of 'feature freezing' (Calabrese (2002)). Unlike an impoverishment operation which involves deletion of a feature on a terminal node, 'feature freezing' makes a feature invisible for the rule of vocabulary insertion while visible for the application of other rules. I argue that an operation like 'feature freezing' is empirically necessary. The features that are suppressed in contextual syncretism remain in the representation, the evidence being that these features serve as a context for further rule application. The technical mechanisms invoked in the analysis provide only three possible surface outcomes from the application of a single, unified DOM rule. All and only these three surface outcomes are attested.

2. Patterns of Case syncretism in DOM systems

There have been several attempts in the literature to compare DOM systems across languages (Bossong (1985), (1991), Isaak (2000), Aissen (2003), Carnie (2005) Baerman et al (2005).

Bossong (1985), (1991), based on a broad typological comparison of DOM systems, observes that languages which show case syncretism in DOM fall into three major categories. The most predominant category includes languages where the Acc' marker on highly

individuated objects is formally identical to the Dative marker[1]. According to Bossong (1991:158), this is a frequent and widespread morphological pattern which, according to his estimates, is found in more DOM languages than all other distinct patterns of Case syncretism in DOM languages taken together. Although the Acc'=Dat case syncretism is familiar from Romance and Semitic language families, this pattern is also widespread among Indo-Aryan languages such as Hindi and Punjabi, and Amerindian languages like Guarani and Aymara[2].

Examples of Acc'=Dat case syncretism are illustrated in (2) and (3) below.

Acc'=Dat

(2)a. Juan besó **a** María — Spanish (Rodríguez-Mondoñedo, 2007: 91-2)
Juan kissed $\text{Maria}_{\text{Acc'=Dat}}$
'Juan kissed Maria'
b. Juan destruyó una ciudad
Juan destroyed a city
'Juan destroyed the city'

(3)a. Adneen-ne Naadyaa-ko bazaar-mẽ dek^{h} aa
$\text{Adnaan}_{\text{Erg}}$ $\text{Nadyaa}_{\text{Acc'=Dat}}$ market in saw-perf
'Adnaan saw Naadyaa in the market place'
b. Ravii-ne kaccaa kelaa kaataa
Ravi_{Erg} unripe banana cut
'Ravi cut an unripe banana' — Hindi (Aissen, 2003:466)

The second very common pattern of Case marking in DOM languages is Acc' versus Ø marking Acc on the non-individuated objects. Languages that show this pattern of syncretism mark highly individuated objects with Acc' Case, which corresponds to the marked Acc case, while non-individuated objects remain unmarked. Languages that show this type of Case marking include Turkish, Arabic, Bashkir, Mandju, and Classical Hebrew among others. Examples of the Acc' marking pattern are shown in (4) and (5) below.

Acc'

(4)a. hin kitap-**tï** uqïy-hïn — Bashkir (Bossong,1998:248)
you the $\text{book}_{\text{Acc'}}$ read-2sg
'You are reading the book'
b. hin kitap-ø uqïy-hïn
you a/some book_{Acc} read-2sg
'You are reading a book'

(5)a. Ali bir kitab-ɨ aldɨ — Turkish (Aissen, 2003:454)
Ali one $\text{book}_{\text{Acc'}}$ bought
'Ali bought the book'
b. Ali bir kitap-ø aldɨ
Ali one book_{Acc} bought
'Ali bought some book'

[1] A clarification of terminology is due here: Following Bossong (1991), I will use the term Acc marker=object marker to refer to the structural Acc case. This should be distinguished from Acc' marker ='special object marker' (DOM marker). The structural Acc and marked Acc (Acc') can be realized by means of distinct case exponents (see sec 2. for data and discussion).

[2] In Semitic, the Acc'=Dat identity is found in the majority of languages, namely Late Akkadian, Syriac, most Neo-Aramaic languages, in all varieties of Arabic with DOM, Classical Ethiopian, Tigre, Tigrigna, and Gurage. In contrast, within Semitic, Acc' marking is found in Classical Hebrew, Early and Imperial Aramaic, Amharic and Gafat (Bossong, 1991:157).

The third case pattern observed in DOM languages is characterized by the identity of Accusative' and Genitive markers on highly individuated objects. No Case marking occurs on regular non-individuated direct objects. This pattern is less common than the Acc'=Dat and Acc' patterns discussed above and can be observed across Slavic languages, and also in Ossetian and Finnish[3]. Examples illustrating the Acc'=Gen syncretism pattern are given in (6), (7) below.

Acc'=Gen

(6)a. Ja vstrečaju dorog**ih** gost**ej** Russian (Bossong, 1991:160)
I meet dear$_{Acc'=Gen}$ guests$_{Acc'=Gen}$
b. Ja pokupaju dorog**ie** veščі.
I buy expensive$_{Acc}$ things$_{Acc}$

(7)a. Azaw Tajmuraz-**ə** awədt-a Ossetian (Bossong, 1985:16)
Azau Taimuraz $_{Acc'=Gen}$ saw-3sg
'Azau saw Taimuraz'
b. jä fos-Ø nə-wwag't-a
his herd $_{Acc}$ abandoned-3sg
'He abandoned his herd'

Given that three distinct patterns of case syncretism are found across DOM languages, the question arises as to how the choice for a particular case syncretism is determined in a given language. Following Bossong's (1985) idea that DOM is a highly principled phenomenon and structurally uniform, it seems plausible that the pattern of case syncretism in a given language is not accidental and falls out from some systematic property of each language. The current literature on the morphology of DOM does not offer any clear explanation as to why only three patterns of case syncrtetism occur and what language properties each syncretism pattern correlates with.

Baerman et al (2005:51-2) in their study of syncretism done on the basis of a sample of 200 languages observe that the choice of a peripheral case which a given language takes to be syncretic with a core case is limited.[4] In particular, they observe that one typically finds Acc' case to be syncretic with either Genitive or with Dative. According to Baerman et al (2005), Genitive and Dative, by virtue of being syntactic cases, are preferred in syncretism over semantic cases, such as directional cases or the instrumental. Nevertheless, Baerman et al (2005) find no motivation for the choice of genitive versus dative. Baerman et al (2005: 52) note: '.. it is difficult to find motivation for the choice of genitive versus dative. This is especially striking when one compares Slavonic and Eastern Armenian. Both have essentially the same inventory of

[3] Although formally Acc is identical to Gen exponent in Finnish, it is questionable whether what we find in Finnish is Acc'. Gen exponent is one of the case options a direct object noun can bear, and the choice of exponent correlates with meaning. Gen exponent correlates with a partitive meaning, while Acc with a 'whole' meaning which resembles the use of Partitive Genitive in Russian:

(i) Ja vypil čaj
I drank tea$_{Acc}$
'I drank all of the tea'
(ii) Ja vypil čaju
I drank tea$_{Part\ Gen}$
' I drank some of the tea'

Thus, Acc=Gen syncretism on direct objects is Finnish might have a different nature. I will not address this in my paper and leave the nature of Acc=Gen syncretism for future research.

[4] Baerman et al's (2005) study covers all types of syncretism which also includes syncretism patterns not related to DOM. No clear division is made in the study itself. I am excluding cases of syncretism not related to DOM discussed in Baerman et al (2005) by making sure that a listed language shows DOM effects independently of the data reported in Baerman et al (2005).

cases and employ type 2 syncretism (core and a peripheral case syncretism) to the same end (marking of animate accusatives), but one uses the genitive and the other the dative'[5].

A recent study by Keine and Müller (2008) offers an account of DOM effects in terms of harmonic alignment of scales and local constraint conjunction in line with Aissen (2003)). Keine and Müller argue against the standard view (Aissen (2003) that all instances of DOM are zero/non-zero alternations. Their claim is that languages can have degrees of morphological marking, and they provide evidence from Finnish, Manheim German and Kambera in favor of this approach. The definition of DOM that Keine and Müller's study assume includes marking of oblique objects on par with direct objects. This definition is distinct from a standard definition of DOM which is limited to direct objects. Keine and Müller' definition of DOM includes oblique objects and instances where a case marking correlates with a special interpretation of the object (affectedness), telicity of the verb and noun vs. pronoun distinction. The definition of DOM that will be assumed in this paper is limited to direct objects of the verb which receive a case marking distinct from other objects on the basis of the animacy/reference scale. I set aside cases of differential case marking on oblique objects as a separate phenomenon.

To conclude, a survey of the literature reveals a robust generalization with respect to patterns of case syncretisms in DOM. The patterns of syncretism are few, systematic and hold across many, often unrelated DOM languages. This generalization has not received an account in the literature so far and I will attempt to develop one in this paper.

3. Theoretical Background

In my analysis of case syncretism in DOM, I will adopt Calabrese's (1998), (2008) case feature system (see Jakobson (1962), Neidle (1988), Franks (1995) on earlier proposals of case feature systems). According to Calabrese (2008:171), cases are morphological realizations of contrastive features. The paradigm is defined as the set of morphological realizations of the contrastive features of a given terminal node in the morphosyntax. The feature system is shown in (8) below[6].

(8) (Calabrese, 2008:171)

	Erg	Nom	Acc	Gen	Dat	Loc	Abl	Inst
Peripheral	-	-	-	+	+	+	+	+
Source	+	-	-	+	-	-	+	-
Location	-	-	-	-	-	+	+	+
Motion	+	-	+	-	+	-	+	+

Calabrese (2008) distinguishes between two types of syncretism across languages: contextual syncretism and absolute syncretism. Contextual syncretism is defined as the identity of morphological realizations for two distinct morphosyntactic categories in some morphological contexts, that are otherwise distinct in other contexts in a given language. This type of

[5] In Eastern Armenian Gen case is syncretic with Dat for all nominal declension classes. It is, therefore, inaccurate for Eastern Armenian at least to claim that it has Acc=Dat syncretism rather than an Acc=Gen pattern, since the two cannot be distinguished (see Minassian (1980:87) on Eastern Armenian, also Halle and Vaux (1998), Caha (2009:79) for data on Classical Armenian). There is Acc=Dat syncretism in Eastern Armenian (Minassian (1980:137), but exclusively for pronouns. See, however, Caha (2009)b for arguments that Classical Armenian (unlike Slavic) lacks true Genitive pronouns, with the pronouns described in this way being instead adjectival possessive pronouns (comparable to the Slavic possessive pronouns) in contrast to true genitive pronouns. It is an open question whether these arguments will carry over to all varieties of Armenian, but if Caha is correct, then Slavic and Armenian pronominal systems, with different DOM outcomes, do not have the same inventory of cases after all.

[6] The abbreviations used in table (8) and further in the text are read as follows: Erg=Ergative, Nom=Nominative, Acc=Accusative, Gen= Genitive, Dat= Dative, Loc=Locative, Abl=Ablative, Instr=Instrumental.

syncretism involves the replacement of one case exponent with another case exponent available in the language. This replacement applies contextually: only certain nominal classes, grammatical categories etc. are affected. The three patterns of syncretism in DOM systems discussed above are instances of contextual syncretism. In the context of a highly individuated object, the Dative marker replaces the Acc marker in Spanish and Persian (see (2) and (3) above), Gen case takes the place of the Acc marker in Russian and Ossetian (examples (6) and (7) above), while Acc' substitutes for Acc marker in Turkish and Bashkir (examples (4) and (5)).

Absolute syncretism is defined as the unity of the exponent for morphosyntactic categories in a language A, which corresponds to two or more distinct morphological exponents in a language B. The relevant assumption here is that all possible morphological contrasts are expressed in terms of universal features and are part of UG. Whether a language expresses all of the contrasts or only a subset of them is determined by morphological markedness. Thus, if a language A shows a morphological contrast between α and β and a language B does not, it follows that the language B shows absolute syncretism for the contrasts between α and β.

An example of absolute case syncretism is illustrated in (9) by the contrast between Old French and Sanskrit (Calabrese, 2008:159). In Old French, the exponent /Ø/ of the singular represents seven case functions, which in Sanskrit are expressed by six distinct exponents. In other words, the exponent /Ø/ in Old French represents absolute syncretism of six different cases.

(9) Old French

	Singular	Plural	
Nom	chiens	chiens	'dog'
Oblique	**chien**	chiens	

Sanskrit	Singular	
Nom	devas	'God'
Gen	devasya	
Dat	devāya	
Acc	devam	
Loc	deve	
Abl	devāt	
Instr	devena	

Calabrese (2008) proposes to use the case feature system in (8) to derive the two types of syncretism: contextual and absolute. Contextual syncretism is derived by means of impoverishment operations applied to case feature specifications. Absolute syncretism is accounted for by feature-changing repair operations on case feature specifications that are triggered by language specific active case restrictions.

In my analysis, I will not be appealing to operations of impoverishment for deriving case syncretisms in DOM systems. Given that the case syncretisms in DOM are limited to marked objects (occur as a result of markedness), it becomes implausible to assume that all direct objects are marked and require a Dat exponent, while in the contexts of most typical objects (inanimate, non-specific) the Acc exponent is derived by means of impoverishment operation. This type of analysis would contradict the general intuition expressed in the literature about the special status of DOM effects with respect to markedness (Bossong (1985), (1991) Aissen (2003)). In a language where due to the syntactic distribution as well as the neutralization processes subjects and objects become indistinct, grammemic replacement[7] performs the function of a new

[7] The term is borrowed from Bossong (1991:146). Bossong argues that phonetic erosion is the main if not the only cause of disappearance of case marking in Romance and Semitic. He distinguishes two language strategies to resolve a situation where a subject and an object are no longer distinct: *positional replacement* and *grammemic replacement*. The former term is used to refer to a situation when case marking once eliminated is replaced by

differential system. This contrasts with the type of markedness effects in phonology where distinctions are assumed to be present underlyingly but tend to be reduced in certain contexts (end of the word, before a voiceless consonant etc).

Since the analysis of one of the case syncretism patterns will be illustrated by Russian, I will spell out in more detail how the feature system in (8) works for this language and how vocabulary insertion proceeds in Russian.

Following Calabrese (2008), I will assume that only the feature specifications that are morphologically contrastive are represented in the case system. The system of case features for Russian is given in (11) below. Russian does not mark Ablative case, thus feature specifications relevant for Ablative are not included in the system[8].

(11) Russian

	Nom	Acc	Gen	Dat	Loc	Inst
Peripheral	-	-	+	+	+	+
Source	-	-	+	-	-	-
Location	-	-	-	-	+	+
Motion	-	+	-	+	-	+

Following the Distributed Morphology framework (Halle (1997), Halle and Marantz (1994), I assume that the phonological exponents of morphemes are listed in the lexicon as vocabulary items. Apart from the phonological exponent, vocabulary items are associated with features, which govern the process of Vocabulary Insertion into the terminal nodes of the morphosyntax. Vocabulary Insertion is subject to the Subset Principle: a vocabulary item can be inserted in a terminal node even if the morphological features of a given vocabulary item constitute only a subset of the features at the terminal node. In other words, vocabulary items 'compete' for insertion.

(12) Halle and Marantz (1994:276)
'*Underspecification*. In order for a Vocabulary Item to be inserted in a terminal node, the identifying features of the Vocabulary Item must be a subset of the features at the terminal node. Insertion may not take place if the Item has identifying features that do not appear at the node….Vocabulary Items are characteristically underspecified with respect to the features of the nodes into which they are inserted… The most highly specified Vocabulary Item whose identifying features are a subset of the features of the terminal node wins the competition and is inserted.'

In my analysis of syncretism patterns, I assume that vocabulary items may be underspecified (as in (13) below) and that vocabulary insertion is governed by the Subset Principle. In addition, following Calabrese (2008) and Noyer (1998), I assume that terminal nodes are fully specified for all features. To illustrate this important piece of my analysis, I will demonstrate how vocabulary insertion proceeds in Russian.

Russian has four nominal declension classes: class I (Masc), class II (Fem, Masc ending in –a stems), class III (Fem), class IV (Neut)[9]. For an illustration of the system, I will consider a

---

positional marking, the latter term refers to a situation when it is replaced by a case marking of other kind (see Bossong (1979), (1980) for motivation of the term *grammeme* versus *morpheme*).

[8] Thus, along the lines of Calabrese (2008), Abl in Russian shows absolute syncretism with Instr (the closest repair from Abl to Instr is feature [+ source]→[-source]).

[9] Most descriptions recognize three declension classes (Vinogradov, Istrina and Barhudarov (1952), Stankiewiecz (1968)). For arguments in favor of postulating four declension classes see Corbett (1982), Corbett and Fraser (1993). The relation between gender and declension class in Russian is not trivial. Both Fem and Masc nouns can decline as Class II nouns, while for the rest three declension classes only one gender value corresponds to a given declension class. Corbett (1982), Corbett and Fraser (1993) argue in favor of postulating four declension classes where the gender distinction is derived by means of additional features in the lexicon. However, if three declension classes are

fragment of the Russian nominal inflection, specifically Class I (inanimate). Russian has six major case values: Nominative, Acccusative, Genitive, Dative, Locative, and Instrumental. I will set aside minor case values: Partitive and Locative II. Declension class I shows Acc=Nom syncretism which not an instance of an absolute syncretism in Russian since Acc=Nom is not found in all declension classes: declension class II has a unique Acc (see (13)' below for a list of vocabulary items).

The vocabulary items for Class I (inanimate) are listed in (13) below (see Appendix 1 for the full paradigm)[10].

Class I			**Class II**		
(13) om↔	[p +, s -, l +, m +]	(Instr)	(13)' oj ↔	[p+, s-, l+, m+]	(Instr)
e↔	[p +, s -, l +]	(Loc)	e ↔	[p+, s-]	(Dat&Loc)
u↔	[p +, m +]	(Dat)	y ↔	[p+, s+]	(Gen)
a↔	[p+]	(Gen)	u ↔	[m+]	(Acc)
ø↔	[ ]	(Nom)	ø ↔	[ ]	(Nom)[11]

Vocabulary items are intrinsically ordered: more specific vocabulary items occur prior to less specific items on the list. The choice of the vocabulary item is determined by the Subset principle, stated in (12) above. Vocabulary insertion proceeds in the following way. Given that terminal nodes are fully specified, any node is fully specified for the features associated with the case required in a given syntactic configuration.

For example, in a configuration where a verb governs Instr case on the noun, the given morphosyntactic node is fully specified for [+per, -source, +loc, +mot] (see (11) above). Out of the list of vocabulary items in (13), all the items have the relevant features for insertion. No items on the list (13) contain features that are not in the terminal node or conflict with features in the terminal node. However, the most specific item (highest by intrinsic ordering) wins the competition and the exponent /om/ gets inserted. The point is illustrated in (14) below.

---

postulated (Class I and Class IV form a single class) the gender distinction and the declension class can no longer be predicted (derived).

[10] The case labels are for expository purposes only. The case labels apply to the terminal nodes but not to the vocabulary items.

[11] There exists a debate in the literature with respect to the –a ending of Class II Sg. According to the traditional point of view (Jakobson (1948), Halle (1994)), no theme vowel in nominal stems is assumed. The ending –a of Class II Sg nouns is truncated from the stem and thus, the Nom case exponent in (13)' should be /a/ not /ø/. However, most recent proposals (Bailyn and Nevins (2008)) argue that Nominative singulars are phonologically identical to the stem, thus, the apparent vowel endings in Nominative singulars are nominal theme vowels (/a/, /o/, /ø/). The choice between these two options of the analysis is not crucial for me here: /a/ or /ø/ exponent can be equally used. However, I would like to draw the reader's attention to different possibilities of representation.

(14)
$$\begin{array}{c}\text{Inst}\\ \begin{bmatrix}\text{p} & +\\ \text{s} & -\\ \text{l} & +\\ \text{m} & +\end{bmatrix}\\ \uparrow\\ \text{/om/}\end{array} \qquad \text{/om/} \leftrightarrow \begin{bmatrix}\text{p+}\\ \text{s-}\\ \text{l+}\\ \text{m+}\end{bmatrix}$$

In addition, I will illustrate how the vocabulary insertion of Gen and Dat exponents proceeds, since it will become relevant for the purposes of my analysis of case syncretism.
In a syntactic configuration where a preposition ('*k*' (to) in (15)) govens Dat case on the noun, the terminal node in morpho-syntax is specified for [+per, -source, -loc, +mot] (see (11)). The Subset principle applies and vocabulary items /u/, /a/ and /ø/ on the list (13) are competing for insertion. Vocabulary items /om/ and /e/ are excluded from the competition since they have features (values) which are not present in the terminal node (+l). The vocabulary item /u/ wins the competition since it is more specific than /a/ and /ø/ on the list.

(15)
$$\begin{array}{c}\text{Dat}\\ \begin{bmatrix}\text{p} & +\\ \text{s} & -\\ \text{l} & -\\ \text{m} & +\end{bmatrix}\\ \uparrow\\ \text{/u/}\end{array} \qquad \text{/u/} \leftrightarrow \begin{bmatrix}\text{p+}\\ \text{m+}\end{bmatrix}$$

In a syntactic configuration of Gen case (preposition 'bez' (without) in (16)) the morposyntactic node is specified for features [+per, +source, -loc, -mot]. The following vocabulary items from the list (13) will be competing for insertion: /a/ and /ø/. The rest of the items will be excluded as possible candidates, since they have features (values) that conflict with the features of the terminal node. Vocabulary item /a/ will be inserted, since it is more specific than the /ø/ exponent in terms of features (p+ vs ø). The derivation is illustrated in (16) below.

(16)
$$\begin{array}{c}\text{Gen}\\ \begin{bmatrix}\text{p} & +\\ \text{s} & +\\ \text{l} & -\\ \text{m} & -\end{bmatrix}\\ \uparrow\\ \text{/a/}\end{array} \qquad \text{/a/} \leftrightarrow \begin{bmatrix}\text{p+}\end{bmatrix}$$

In an instance of a terminal node corresponding to Acc, i,e direct object position or an object of a preposition governing Acc case, the node is specified for the following features: [-per, -source, -loc, +mot]. The list of vocabulary items in (13) does not offer an item that would correspond to Acc. The most specified item on the list that does not have features conflicting with the features of the terminal node is /ø/ corresponding to Nom case. Thus, Nom case exponent is inserted and, as a result, occurrence of Acc=Nom syncretism[12].

[12] The analysis just sketched treats Acc=Nom syncretism in all but Class II Sg nouns, as an accidental consequence of the inventory of exponents available. Below (sec.4.2) I will suggest that there is a feature changing rule that encodes this as a systematic rather than an accidental syncretism, though this refinement does not substantively affect the analysis just sketched (see Bobaljik (2002) on accidental vs. systematic aspect as a motivation for Impoverishment).

Vocabulary insertion in terms of underspecification will play an important role in my analysis of the three patterns of case syncretism observed in DOM languages.

4. Analysis

4.1 DOM rule. Acc=Dat pattern

If we look at Calabrese's (2008) case feature system in (17) below, Dat and Acc cases are distinct in terms of only one feature specification [+/- peripheral].

(17)

	Nom	Acc	Gen	Dat	Loc	Abl	Inst
Peripheral	-	-	+	+	+	+	+
Source	-	-	+	-	-	+	-
Location	-	-	-	-	+	+	+
Motion	-	+	-	+	-	+	+

I would like to propose that the general rule that applies in all DOM languages causes the change of feature specification from [- peripheral] to [+peripheral]. The formulation of the DOM rule is given in (18).

(18) **DOM rule**

$$[\text{-per}] \rightarrow [\text{+per}] \; / \; \begin{bmatrix} \text{\_\_} \\ [\text{+mot}] \end{bmatrix}$$

NPs marked *high* on animacy/inherence scale (defined on a language specific basis)

The restriction of the rule application to [+mot] ensures that the rule will mark underlying accusatives but not underlying nominatives[13]. I propose to treat the rule in (18) as a unified DOM rule for all DOM languages. However, the triggering environment for the rule varies from language to language. The common view expressed in the functional typology literature (Corbett (1991), Aissen (2003)) is that the classification of the object with respect to the reference or inherence scale (definiteness and animacy hierarchy for Silverstein (1976)) determines presence or absence of differential marking on a given object.

DOM languages are not uniform with respect to the cut off point on the scale (Aissen (2000), (2003), Næss (2004)): some languages mark definite objects leaving indefinite ones unmarked (ex. Hebrew, Persian), others mark only animate/human objects (ex. Catalan) etc. On top of the differences with respect to the markedness scale, some languages differentiate objects on the basis of a declension class. For example, in Russian, the DOM rule excludes Infl classes II, III and IV for singular nouns, but it applies across the inflection classes in plural. For many DOM languages, lexical category also plays a role: Italian and Standard Spanish show DOM effects with nouns and pronouns but not with clitics. In certain dialects of Italian (e.g. Campidanese Sardinian) the DOM rule applies to nouns excluding the pronouns, while in Leísmo Spanish, Northern Peninsular Spanish, as well as in Persian Azerbaijani (Bossong (1991:155) the DOM rule extends to clitics as well as pronouns and nouns.

The DOM rule, as formulated in (18), is not designed to refer to peculiarities of the markedness conditions for DOM application. The rule in (18) is a formal statement of the marking rule that applies regardless of what particular criteria are chosen as a basis for markedness in a given language. If nothing else is said, this will yield Acc'=Dat syncretism, which is the most common type of DOM syncretism (Bossong, 1985:157).The effect of the DOM rule application is illustrated in (19) below.

[13] Questions of formalism arise in the next section, where the DOM rule will interact with a proposed Neutralization rule. I return to these questions presently.

(19)

	Acc		Dat
Peripheral	-	→	+
Source	-	*DOM*	-
Location	-		-
Motion	+		+

The application of the rule in (18) results in the occurrence of a Dat marker on animate (specific) objects in Spanish as in (20), as well as on animate objects in Hindi as shown in (21).

In (20), the object NPs *Maria* and *una ciudad* are both assigned Acc case in the syntax, and thus the NPs bear the feature specifications [-p,-s,-l,+m]. In the morphology, prior to vocabulary insertion the DOM rule applies in (20)a but not in (20)b (only in (20)a is the NP animate and specific, hence high on the animacy/individuation hierarchy), and changes the value [-p] to [+p], as shown in (19). At the point of Vocabulary Insertion (VI), the appropriate case exponents are inserted, namely Dat case in (20)a (realized in Spanish by the preposition *a*), but Acc in (20)b (which is not different from Nom in the case of full NPs but is distinct on pronouns and clitics).

Acc=Dat

(20)a. Juan besó **a** María — Spanish
Juan kissed $\text{Maria}_{\text{Acc'=Dat}}$
'Juan kissed Maria'

b. Juan destruyó una ciudad
Juan destroyed a city_{Acc}
'Juan destroyed the city'

(21)a. Adneen-ne Naadyaa-ko bazaar-mẽ dek^{h} aa
$\text{Adnaan}_{\text{Erg}}$ $\text{Nadyaa}_{\text{Acc'=Dat}}$ market in saw-perf
'Adnaan saw Naadyaa in the market place'

b. Ravii-ne kaccaa kelaa-ø kaataa
Ravi_{Erg} unripe banana cut
'Ravi cut an unripe banana' — Hindi (Aissen, 2003:466)[14]

More examples of Acc=Dat syncretism can be found in the Appendix 2.

4.2 DOM rule and Neutralization. Implementing Rule Ordering

In order to derive other patters of syncretism I will appeal to a pattern of syncretism which exists independently of DOM in many languages: Nom=Acc. Since Acc and Nom are only distinguished by [+/-mot], I propose that there is a Neutralization rule that eliminates this contrast. As a first approximation (to be revised below), the rule can be stated as changing the feature [+mot] into [-mot] in the environment of [-per] (see (22)) [15].

[14] Note that Acc'=Dat syncretism (the outcome of DOM) can co-occur with a regular Dat argument in double object constructions in Hindi as shown in (i). The DOM rule in Hindi is specificity/animacy based.

(i) Ram-ne chitthii-ko Elena-ko bhej-aa — Bhatt and Anagnostopoulou (1996)
$\text{Ram-Erg letter}_{\text{Acc=Dat}}$ $\text{Elena}_{\text{Dat}}$ $\text{send}_{\text{Perf}}$
'Ram sent Elena the letter.'

[15] The nature of this operation I leave open. One possibility is to view it as a repair operation in line with Calabrese (2006). Calabrese (2006) argues for the existence of universal constraints (disallowed combinations of case features) which trigger repair operations. The repairs change the feature values in the terminal nodes in order to avoid a banned combination. As proposed in Calabrese (2005), feature repair operations are obtained by deletion of the

(22) **Neutralization rule**

$$[+\text{ mot}] \rightarrow [-\text{ mot}] / \underline{\quad} \begin{bmatrix} [-\text{per}] \end{bmatrix}$$

The effects of the rule are shown in (23)

(23)

	Acc		Nom
Peripheral	-		-
Source	-		-
Location	-	*Neutralization*	-
Motion	+	→	-

The leading idea I wish to advance is that the varying outcomes of DOM are a consequence of the interaction of the DOM rule and the neutralization rule.

If the neutralization rule is ordered after the DOM rule, then neutralization will apply only to nouns which are exempt from the DOM rule. The context of application for the neutralization rule in (22) is [-per], while, given the formulation of the DOM rule in (18), [-per]→[+per] operation will bleed the environment required for application of the neutralization rule.

If the Neutralization rule is ordered prior to the DOM rule, the application of the DOM rule ([-per]→[+per]) would no longer create a 'Dative' cluster, creating instead a feature combination not defined in (11) ([+per, -source, -loc, -mot]). I propose that in some DOM languages this combination of features is defined and corresponds to Acc'. In other DOM languages, where the feature cluster [+per, -source, -loc, -mot] is undefined the most highly specified vocabulary item that will be insertable is the exponent of Gen (see below), and never any other oblique case. In this way, ordering the neutralization rule before the DOM rule will yield one of the two possible patterns. Together with the most common Acc'=Dat syncretism, this analysis derives all and only the attested DOM patterns.

A more detailed discussion is due here on the technical implementation of the rule ordering. If the neutralization rule is ordered *prior* to the DOM rule, the DOM rule applies to the output of the neutralization rule. As the rules are stated though, (22) would bleed the context for application of the DOM rule. The DOM rule would no longer be applicable, since given the formulation of DOM rule in (18), the application of DOM rule is restricted to [+mot] contexts. The technical implementation of the neutralization rule suggested in (22) above is thus problematic.

The general problem with (22) as formulated is this: the DOM rule applies to underlying accusatives and not to underlying nominatives. The rule (22) eliminates this distinction, and thus forces under- or over- application of the rule.

There are several potential solutions to the problem outlined above which I will eventually reject arguing instead that the correct solution requires the operation of feature freezing instead of feature deletion (impoverishment). One obvious alternative is to appeal to an analysis in terms of underspecification. Instead of an operation which changes the feature value of [+mot] into [-mot] (see (22)), an impoverishment operation can be used to delete the feature [+mot]. The DOM rule is also modified to refer to the feature [ø mot] (25), which will allow us to avoid the application of the DOM rule to nominatives[16].

---

relevant feature followed by insertion of the same feature with an opposite value. This mechanism is required by a principle enforcing fully specified representations. Repairs are used in Calabrese (2008) in order to account for cases of absolute case syncretism.

[16] Alternatively, instead of [ø mot] one can use /¬[+ mot] in a theory which does not allow underspecification. However, this technical alternative has the same problem: it introduces an additional value into the system (+/-/¬+) and creates redundancy.

(24)

	Acc		Nom
Peripheral	-	*Neutralization*	- → +
Source	-		-
Location	-		- *DOM* -
Motion	+	→	ø ø

(25) **Neutralization rule**

[+ mot]→ [ø mot]/ [___ [-per]]

(26) **DOM rule**

[-per]→ [+per] / [___ [ø mot]] NPs marked *high* on animacy/inherence scale (defined on a language specific basis

This analysis, however, faces a number of problems. One disadvantage of (24) is that the DOM rule as formulated in (18) is no longer uniform. The DOM rule when ordered after neutralization as shown in (26) refers to the context of [ø mot], while the DOM rule independent of neutralization (as formulated in (18)) applies in the context of [+mot]. It follows then that two versions of DOM rule are required to account for the major syncretism patterns.

Another problem that arises with respect to the use of underspecification in (25) is that a third value needs to be introduced into the system. The original case feature system adopted from Calabrese (1998) has two feature values (+/-), while a third value (ø) needs to be added to the original case feature system with the use of underspecification. Since all of the feature values used in Calabrese's case system are contrastive and are reflected by means of morphological exponents in given languages, introducing an additional value would require an independent justification, other than for the purposes of (25). Unjustified use of an extra feature value, as in (25), provides an ad hoc solution to the problem but leads to an undesirable and unmotivated redundancy in the system as a whole.

As an alternative to one version of a solution outlined above, I will propose a solution in terms of the 'feature freezing' operation proposed in Calabrese (2002)[17].Unlike impoverishment, this operation does not involve deletion of a feature, but an operation which makes a given feature specification temporarily inaccessible for vocabulary insertion, but visible for further rule application. Calabrese (2002) originally proposed 'feature freezing' to account for the retreat-to-the-general-exponent cases leaving open whether this operation is applicable to other contexts.

An illustration of the feature freezing operation can be provided by noun declensions in Latin. Calabrese (2008) appeals to the case feature system in (17) to account for instances of contextual syncretism in Latin. According to Calabrese (2008:174), the following vocabulary items need to be assumed for a uniform account of all declensions in Latin.

(27) a. /-um/ ↔ [+peripheral, -motion, +plural] (Gen Pl)
b. /-i:/ ↔ [-peripheral, -motion, +plural] (Nom Pl I, II)
c. /-bu-/ ↔ [+peripheral, +motion, +plural] (Dat, Abl Pl III-V)
d. /i:/ ↔ [+peripheral, -location, -plural] (Gen, Dat Sg)
e. /a/ ↔ [-peripheral, +plural]/[+neuter] (Nom and Acc Pl. Nt)

[17] Another possible analysis is to appeal to a syntactic configuration in the formulation of the DOM rule. This direction, however, is also problematic. First, in Russian and other DOM languages as well, the DOM rule is not restricted to direct objects only, but applies to objects of prepositions as well. Second, the analysis where the context of the DOM rule is syntactic would make reference to two levels of representation: an underlying representation (syntax level) and a surface representation (morphology). Thus, for the reasons above, I set this possibility of analysis aside as implausible.

f. /-m/	↔ [+motion, -plural]	(Acc Sg)
g. ø	↔ [-plural]	(Sg default)
h. /s/	↔ [ø]	(Elsewhere)

Given the list of vocabulary items in (27), the null exponent /ø/ should be inserted in the terminal node of Nom Sg and the exponent /i:/ in the terminal node of Gen Sg (see (27)g and (27)d). However, Nom of the II-VI declensions and the Gen of the III-IV declensions do not show the expected /ø/ and /i:/ exponents, and instead we observe the elsewhere exponent /-s/ for these declensions.

Calabrese (2002) proposes a solution to this problem where the feature [-plural] is 'frozen', i.e. becomes temporarily inaccessible during a given insertion cycle. During that cycle an exponent associated with this feature specification can not be inserted and a less specified exponent must be inserted instead, in line with the general assumptions of the Distributive Morphology framework. The feature freezing rules as stated in Calabrese's (2002:30) account are given in (28)a,b below.

(28)a. The feature [-plural] is frozen during the insertion of Case exponents in the context of [__, -peripheral, -motion] II, III -IV noun declensions

b. The feature [-plural] is frozen during the insertion of Case exponents in the context of [__, +source, -location] III-IV noun declensions

After application of the feature freezing rule to the terminal node, neither the null morpheme /ø/ nor the morpheme /i:/ of the list in (27) (repeated in (29) below) can be inserted into a terminal node corresponding to the Gen case. These vocabulary items have a feature not present at the terminal node: the feature [-plural]. The elsewhere item /s/ wins the competition.

(29) a. /i:/ ↔ [+peripheral, -location, -plural]
b. ø ↔ [-plural]

Calabrese (2002) appeals to feature freezing, as opposed to an impoverishment based analysis of the nominal declensions in Latin, due to his assumption that a deletion of feature is followed by an insertion of a feature of the opposite value (see Calabrese (2002) for arguments and discussion). Under this view, the analysis of nominal declension classes by means of a deletion of a feature can not be provided.

I will appeal to a feature freezing operation in order to implement the order between the Neutralization and the DOM rule. For the purposes of my analysis, I will slightly modify the original formulation of feature freezing assumed in Calabrese (1995), (2002). In particular, I will not view the output of the feature freezing operation as *temporary* and I will exclude the notion of *insertion cycle* from my definition of feature freezing.

I will view feature freezing as an operation which makes a given feature invisible to the rules of vocabulary insertion, but visible for application of other rules. Thus, consider the definition of feature freezing assumed in my analysis.

(30) Feature freezing applied to a feature F makes a given feature invisible for Vocabulary Insertion, but visible for the application of other rules.

The advantage of a feature freezing operation in the task of implementing the order of Neutralization and DOM is that the right context for the DOM rule ([+motion]) can be preserved. I assume that an application of feature freezing makes the feature [+motion] inaccessible for vocabulary insertion, but visible for further rule application. The feature [+motion] is visible for

the application of the DOM rule, thus, the DOM rule applies to the output of the Neutralization rule. A Neutralization rule followed by a DOM rule is illustrated in (31) below[18].

(31)

	Acc		Nom		
Peripheral	-	*Neutralization*	-	→	+
Source	-		-		-
Location	-		-	*DOM*	-
Motion	+	→	<+>		<+>

(32) **Neutralization rule**

[+ mot]→ [<+> mot]/ [___ [-per]]

The rule in (32) is read as follows: the feature [+ mot] is frozen in the context of [__, -per].

(33) **DOM rule**

[-per]→ [+per] / [___ [+mot]] NPs marked *high* on animacy/inherence scale (defined on a language specific basis)

A possible criticism can arise with respect to the issue of the third value in the system. One may argue that by not fully deleting the feature (unlike in case of impoverishment), but by considering it 'frozen' we are introducing a new value into the system. Thus, in addition to +/- values of the features available we introduce a value <+>/<->.

However, by assumption, feature freezing does not change the feature or substitute it with a zero or 'frozen' value. Feature freezing operation makes a feature value invisible for the rule of vocabulary insertion but the feature value remains unchanged for application of other rules. The rules that refer to this feature value do apply.

An important issue to discuss is whether the general arguments against underspecification should apply to feature freezing which represents a version of underspecification. Arguments against underspecification in phonology have been provided in Steriade (1995), Calabrese (1988), Clements (2001). The main problem these authors find with the use of underspecification is the lack of independent motivation for its existence apart from the data it is used to account for.

However, I argue that arguments against underspecification should not apply to feature freezing. According to the definition of feature freezing as formulated in (30), a 'frozen' feature is no longer viewed as the property of the representation, but as the property of the rule. Under this view, we are not dealing with underspecification of an underlying representation but rather we are dealing with restrictions placed on the rules that apply to a given representation.

Such a view is in line with *Visibility Theory* argued for in Calabrese (1995), (2005), Halle (1995), Halle, Vaux and Wolfe (2000). Calabrese (1995), (2005), being a proponent of fully specified representations in phonology, suggests that the phonological rules are sensitive to three classes of feature specification: marked feature specifications, contrastive feature specifications or all feature specifications (see Calabrese (1995), (2005) for discussion). Evidence for this view is provided by cases where a certain feature F is invisible to a process X but is required to state the environment for a process Y. This situation is directly replicated by the effect of Neutralization prior to DOM ordering derived in this analysis[19].

---

[18] The notation <> is used to refer to a 'frozen' feature value, i.e. the feature value is invisible for vocabulary insertion.

[19] The question arises what kind of feature specification the DOM rule is sensitive to, while the Vocabulary Insertion rule is not. If neutralization is an elimination of a contrast, then Vocabulary Insertion, being sensitive to

Given the independent evidence in favor of the feature freezing operation provided in Calabrese (2002), as well as the apparent failure of standard tools to account for the data outlined above, the existence of an operation like feature freezing becomes more plausible. The feature freezing operation applies exactly where an impoverishment operation is inadequate. Thus, the need for an operation distinct from impoverishment which would allow deriving rule ordering and retreat-to-the-general case effects provides the required motivation for its existence.

4.3 Acc=Acc' pattern

Above I have defended the need for feature freezing as the formal implementation of a neutralization operation. Using freezing, rather than deletion/impoverishment, makes distinct predictions regarding the interaction of neutralization and DOM. I turn to these interactions now, and show that the feature and rule system proposed above predicts all and only the attested DOM patterns.

For languages where neutralization is ordered prior to DOM, I will argue that distinct patterns of syncretism can be observed. If Neutralization happens before the DOM rule, the combination of features it derives corresponds to a case not defined in Calabrese's (2008) system. I propose that this is Acc' (following Bossong's (1985) idea of marked Acc). The point is illustrated in (34) below.

(34)

	Acc		Nom		Acc'	
Peripheral	-	*Neutralization*	-	→	+	→ *Vocabulary*
Source	-		-	*DOM*	-	*Insertion*
Location	-		-		-	
Motion	+	→	<+>		<+>	

The feature [+mot] is neutralized by means of a 'feature freezing' operation in (34). The value [+mot] is not eliminated and does not receive an opposite value. The feature [+mot] remains active for the rule application which results in further application of the DOM rule. The VI rule applies after the application of the DOM rule.

Unlike other options of the analysis (impoverishment, repair) discussed above, the Neutralization rule does not bleed the application of the DOM rule in the representation (34).

Recall that the Acc=Dat pattern above was explained by a pure application of DOM rule, which derived a combination of features of the Dat exponent similar to Acc' (see (19) above). The important difference in the outcome of (34) is that the value of the feature [motion] is 'frozen', thus not available for vocabulary insertion. I suggest that the resulting bundle of features in (34) is defined as Acc'. In these languages, the contrast between Acc and Nom is eliminated via the neutralization rule. In contexts where the DOM rule applies, the value of the feature [- peripheral] is changed to [+peripheral], and the resulting bundle of features is marked and occurs in a language as Acc'[20].

Consider an example of a language where Acc' is defined. Turkish is such a language. Given the assumption that vocabulary insertion is governed by underspecification, the vocabulary items competing for insertion in Turkish are listed in (35) (Németh (1976))[21]. The terminal node for insertion is given in (36).

---

contrastive features only, does not see a feature specification <+> (not contrastive, has a frozen value) , while the DOM rule is sensitive to all feature specifications and identifies [<+> mot] as [+ mot].

[20] There exists another logical possibility of analyzing Acc' type marking. It is plausible that what Bossong (1991) calls Acc' is in fact a regular Acc case. The neutralization rule is differential and it applies to non-highly individuated/ non-animate objects which results in the absence of mark on this type of objects. I will explore this possibility of analysis in Appendix 4 below and point out the assets as well as drawbacks of this direction.

[21] The vowels in Turkish case exponents undergo vowel harmony, thus change depending on the properties of vowel of the root. One of the possible forms is exemplified for each of the case exponents in (35).

(35) dan ↔ [p +, s +, l +, m +] (Abl)[22]

da ↔ [p +, s -, l +] (Loc)

a ↔ [p +, m +] (Dat)

ɨ ↔ [p +, s -] (Acc')

ɨn ↔ [p +] (Gen)

ø ↔ [ ] (Nom)

(36) [p+, s-, l-, m<+>]

Out of the list of vocabulary items in (35), exponents corresponding to Acc' /ɨ/, Gen /ɨn/ and the Elsewhere item /ø/ compete for insertion in the terminal node (36). Vocabulary items corresponding to Abl, Loc and Dat are not considered for competition, since they have feature values not present at the terminal node (see (36))[23]. The Acc' exponent is more specific than the Gen and the Elsewhere exponent by intrinsic ordering, thus the Acc' and not the Gen exponent gets inserted in the terminal node in Turkish.

In other words, the presence of Acc=Nom syncretism influences the outcome of competition for vocabulary insertion. In the absence of neutralization, the Dat exponent would be the most specific candidate in (35), while in the presence of neutralization the Acc' is the most

[22] An interesting prediction arises with respect to a study on local cases by Radkevich (2008). Based on the survey of 62 non-Indo-European languages, Radkevich (2008) establishes the order of local case affixes. Turkish Abl and Loc cases behave in the way Radkevich's analysis predicts: Abl exponent ('dan') is derived on the basis of the Loc case exponent ('da') by adding an additional morpheme –n (see Radkevich (2008) for more discussion on the structure of local cases).

[23] The order between Dat and Acc' is established extrinsically. Although the order between Dat and Acc' does not bear on the outcome of competition in this analysis (Dat has a feature value [m+]), the ordering is important for regular vocabulary insertion (i.e., in Dat contexts). One possibility is to make use of Blake's (1994) Case hierarchy to establish the order Dat>Acc'. A question arises where Acc' should be placed on the hierarchy. According to Blake (1994:161), the sole occurrence of case syncretisms in some sense precludes the possibility of establishing implicational relationships between cases. However, given that case systems are created in a certain sequence with a 'greater than chance frequency' (Greenberg (1963)), the syncretisms themselves do not render the hierarchy vacuous. Blake (1994) suggests that in a situation where a case expresses more than one function, such cases should be labeled based on the higher function on the hierarchy. Thus, for example, in an instance of a Dat=Acc' syncretism, the case should be labeled as Dat not Acc. The higher function of Acc=Acc' syncretism is Acc' itself. The relative order with respect to Gen would have to be checked: there are DOM languages with Nom/Oblique system. i.e use no Gen, but have Acc'.

specific candidate. If Acc' is not defined in a given language the Gen exponent is inserted (see section 4.4 for discussion).

Examples of other Acc' languages are shown in (37) and (38): Mandju and Hebrew mark definite objects with an Acc' marker, while indefinite ones are left unmarked. In (37), the object NPs *dengjan* 'lamp' and *bithe* 'letter' are assigned Acc ([-p,-s,-l,+m]) in syntax. At the morphology level, prior to VI, the Neutralization rule applies to object NPs in (37)a and (37)b ([-p,-s,-l,<+>m]). However, the DOM rule applies only to the definite NP *dengjan* 'lamp' in (37)a changing the feature [-p] to [+p] ([+p, -s,-l,<+>m]). At the point of VI, the Acc' case exponent is inserted in (37)a, while Acc (not distinct from Nom) is inserted in (37)b.

(37)a. bi dengjan-**be** mukiye-bu-he Mandju (Bossong, 1991:161)
I lamp$_{Acc'}$ be extinguished-caus-perf
'I have extinguished the lamp'
b. bi bithe ara-mbi
I letter write-AOR
'I am writing a letter'

(38) a. Ha-seret her'a **'et**- ha'milxama Hebrew (Aissen, 2003:453)
the movie showed $_{Acc'}$- the- war
'The movie showed the war'

b. Ha-seret her'a (*'et) milxama
the movie showed war
'The movie showed a war'

More examples of languages that show Acc' type marking can be found in the Appendix 2.

4.4 Rule interaction. Acc=Gen syncretism

The third pattern of syncretism (Acc=Gen), the least common of the three major patterns, occurs in languages where the Neutralization rule is ordered prior to DOM but Acc' is not defined.

An illustration of a language where Acc' is not defined is provided by Russian. In this language, where DOM does not apply the Nom form is syncretic with the Acc form for all inflection classes except for inflection class II (Fem, Masc ending in –a stems).Thus, animate singulars class I and all plurals (there is no distinction for gender in plural for Russian) show either DOM (Acc=Gen) or neutralization (Acc=Nom). The relevant paradigms are given in Appendix1. In Russian the neutralization rule is ordered prior to the DOM rule and does not apply to Inflection class II nouns. (40) is an illustration of its effects.

(39) **Neutralization rule**
[+ mot]→ [<+> mot]/ $\left[\ \underline{\quad}\ \text{[-per]}\right]$

In Russian, rule (39) applies to all inflection classes except class II nouns.

(40)

	Acc		Nom
Peripheral	-		-
Source	-		-
Location	-	*Neutralization*	-
Motion	+	→	<+> /__[-per]

The DOM rule applies to the output of the neutralization rule deriving the feature combination of Acc'. The relevant derivation is illustrated in (41).

(41)

	Acc		Nom				
Peripheral	-		-	→	+		*Vocabulary*
Source	-		-	*DOM*	-	→	*Insertion*
Location	-		-		-		
Motion	+	→	<+>		<+>		

Neutralization

(42) **DOM rule**

[-per]→ [+per] / [___ [+mot]] NPs marked *high* on animacy/inherence scale (defined on a language specific basis)

The Neutralization rule and the DOM rule overlap in the noun classes they apply to, but do not have identical distribution and thus cannot be collapsed. For example, the Neutralization rule applies in classes III and IV (Sg), but the DOM rule does not (see Appendix 1). In these classes, both animate and inanimate NPs fail to distinguish Nom and Acc. This fact contributes to the argument against treating DOM solely in functional terms: if DOM were required wherever Neutralization would otherwise obtain, then DOM and Neutralization should have identical environments.

To this point, the derivation in Russian proceeds as in Turkish. However, Russian, unlike Turkish, lacks a dedicated exponent specified as [+p, -s] (Acc').

Given the assumption that vocabulary insertion in Russian is governed by underspecification, vocabulary items in (43) are considered for insertion into the terminal node.

(43)

om↔	p + s - l + m +	(Instr)	Class I, Sg
e↔	p + s - l +	(Loc)	
u↔	p + m +	(Dat)	
a↔	p+	(Gen)	
ø↔	[ ]	(Nom, Acc)	

The Neutralization rule applies to the terminal node prior to vocabulary insertion. The resulting feature combination is given in (44).

(44)

$$\begin{bmatrix} p+ \\ s- \\ l- \\ m+ \end{bmatrix} \quad \rightarrow \quad \begin{bmatrix} p+ \\ s- \\ l- \\ m_{<+>} \end{bmatrix}$$

Additionally, I assume that the DOM rule applies at the terminal node.

(45)

$$\begin{bmatrix} p- \\ s- \\ l- \\ m_{<+>} \end{bmatrix} \quad \underset{DOM}{\rightarrow} \quad \begin{bmatrix} p+ \\ s- \\ l- \\ m_{<+>} \end{bmatrix}$$

From the list of vocabulary items in (43), only exponents /a/ and /ø/ are possible candidates for insertion in terminal node (45). The exponents /om/, /e/ and /u/ are excluded from the competition since they have features (values) not present in the terminal node in (45). In particular, the Dat exponent /u/ is excluded because the feature [+m] has been frozen and is thus invisible for vocabulary insertion. Given that exponent /a/ is more specific than exponent /ø/, the former wins by intrinsic ordering and Gen exponent is inserted. Thus, no change in feature values is required under this account. The choice between case exponents is determined only by means of underspecification and intrinsic ordering.

The unique DOM rule, interacting with Neutralization, and the possibility that a language either has or lacks an Acc' vocabulary item, provides an accurate and succinct description of exactly the three attested DOM patterns.

The choice of the Dat case exponent is also expected for languages where the DOM rule applies prior to neutralization. Given the formulation of the DOM rule and the Neutralization rule (see (32) and (33) respectively), the reverse ordering of the rules would result in non-application of the Neutralization rule: the Neutralization rule applies in the context of [–per], while the application of the DOM rule would bleed this environment by changing the feature [–per] to [+per]. Thus, the absence of neutralization as well as ordering of neutralization after the DOM rule leads to the same choice of the case exponent for DOM marking.

Note that a distinct outcome is expected for non-individuated objects (also particular word classes, Infl classes in some languages) if the order of rules is DOM> Neutralization. These objects are exempt from the DOM rule and thus, the DOM rule will no longer bleed the context for the neutralization rule application. It follows that languages where the DOM rule is ordered prior to the neutralization rule are expected to show Nom=Acc syncretism for objects/word classes where the DOM does not apply. Therefore, there are two ways to derive Dat as the outcome of DOM: either the DOM rule applies *before* the neutralization rule, or there is *only* the DOM rule. The system correctly predicts that Dat may occur as the output of DOM with or without an independent Acc=Nom neutralization. By the same token, Gen or Acc' can only be outputs of the DOM rule if there is a prior neutralization rule. The system thus also correctly predicts that Gen and Acc' can only occur in languages, or more accurately, paradigms that otherwise neutralize Acc=Nom. I return to this point, with examples, in the next section.

The analysis of case syncretism patterns stated as ordering of the neutralization rule prior to the DOM rule finds additional support in Blake's (1994) Case Hierarchy. According to the Case Hierarchy stated in (48) below, Dat case is closely adjacent with Gen on the left, i.e one step (contrast) lower on the hierarchy.

According to my analysis, Dat case exponent is chosen for DOM marking in the absence of neutralization. If my analysis is on the right track and the neutralization process is responsible for different case outcomes in DOM, it is expected that cases lower on the case hierarchy should be chosen to be syncretic. Given that in my analysis Acc'= Gen syncretism is derived by means of underspecification, and since the list of vocabulary items is intrinsically ordered with respect to the case hierarchy, elimination of the Nom-Acc case contrast due to neutralization is expected to favor the case adjacent and lower on the hierarchy to be syncretic with Acc. This expectation is met by Acc'=Gen syncretism.

(48) Nom< **Acc/Erg < Gen< Dat<** Loc< Abl/ Instr< Others (Blake,1994:157)

More examples of Acc=Gen languages are given in (49), (50) below, as well as in Appendix 2. Thus, in (49) (Finnish), object NPs *karhu* 'bear' and *sinu* 'you' are assigned Acc case ([-p,-s,-l,+m]) in syntax. However, in the morphology, prior to VI, the neutralization rule ([-p,-s,-l,<+>m]) followed by the DOM rule ([+p,-s,-l,<+>m]) applies to the noun object in (49)a but not to the pronoun object in (49)b. As a result, at the point of VI, the Gen case exponent is inserted in (49)a while the Acc case exponent is inserted in (49)b.

(49)a. Matti anta-a häne-n näh-dä karhu-n Finnish (Kiparsky, 2001:317)
Matti-Nom let$_{3sgl}$ him-Gen see bear$_{Acc'=Gen}$
'Matti will let him see the (a) bear'
b. Matti anta-a häne-n näh-dä sinu-t[24]
Matti will let him see you $_{Acc}$
'Matti will let him see you'

(50)a. chłopec, ktorego Maria lubi Polish (Franks, 1995:69)
boy who $_{Acc=Gen}$ Maria loves
'The boy whom Maria loves'
b. portfel, ktory ukradziono
briefcase which$_{Nom=Acc}$ stolen
'The briefcase which was stolen'

All Slavic languages show some degree of the DOM rule, and cases of co-occurrence of Acc=Gen and Nom=Acc syncretisms are very common (Bulgarian, Slovenian, Serbo-Croatian, Czech, Polish, Slovak among other Slavic languages) (Bossong, 1998:213).The idea of relating Acc=Gen syncretism to Nom=Acc is not new.

Klenin (1983) includes Nom=Acc syncretism in her list of preconditions which play a crucial role in the diachronical development of Gen=Acc syncretism for a given language. According to Klenin, implementation of the Gen=Acc in the East Slavic proceeded in well-defined morphological stages and was subject to a variety of conditions. In this account, morphological conditions favored the generalization of the Gen=Acc syncretism at one or more morphlogical stages. The conditions are listed in (51) (Klenin, 1983:5).

(51) 1. pre-existing Nom=Acc syncretism
2. direct objects status
3. lack of isolation from a Nom subject (Timberlake, 1979:119)[25]
4. personhood/animacy of the referent
5. modification

[24] In Finnish the pronouns do not show Nom=Acc syncretism, thus no Acc=Gen syncretism for DOM is observed.
[25] By 'isolation from a Nom subject' Timberlake (1979) refers to the degree of object embedding (complex NP).

6. singular number
7. focus
8. definiteness
9. properness
10. referential independence
11. masculine gender
12. informal style

The conditions are supported by documented evidence. In particular, Thomson (1908) provides ample evidence for the fact that nominal genitive-accusatives were always restricted to paradigms that already had Nom=Acc syncretism.

Given the evidence of an interaction between the neutralization process and DOM in the course of the historical development of a language, the given account of syncretism, which makes a connection between the Gen=Acc and Nom=Acc syncretisms seems highly plausible. In addition, this account makes a strong prediction that Acc'=Gen syncretism is contingent on the presence of Acc=Nom syncretism in a language. Thus, the presence of condition 1 in (51) is highly expected and gives additional support to the analysis.

However, Nom=Acc syncretism is not a sufficient condition for a synchronic account of DOM. One can conclude this on the basis of Russian declension classes by comparing declension class I (Masc, Sg) to declension classes III (Fem, Sg) and IV (Neut, Sg) (see (52) below). All three declension classes show Nom=Acc syncretism, but crucially only declension class I (Masc, Sg) reveals Acc=Gen (DOM) syncretism for animate nouns.

(52)

Infl class III, Sg: fem

Sgl	$tetrad_f$ 'notebook'	doč 'daughter'
Nom	**Tetrad'-Ø**	**Doč - Ø**
Acc	**Tetrad'- Ø**	**Doč- Ø**
Gen	Tetrad-i	Doč-er-i

Infl class IV, Sg : neut

Sgl	$mest_n$ 'place'	suščestvo 'creature'
Nom	**Mest-o**	**Suščestvo**
Acc	**Mest-o**	**Suščestvo**
Gen	mest-a	Suščestv-a

Inflection class I, Sg: masc

Sgl	$Zavod_m$ 'factory'	Student 'student'
Nom	**Zavod-Ø**	Student- Ø
Acc	**Zavod- Ø**	**Student-a**
Gen	Zavod-a	**Student-a**

Thus, although the connection between Nom=Acc and Acc=Gen syncretisms can be established diachronically as suggested in Thomson (1908) and Klenin (1983), a similar connection can not be made in synchronic terms.

5. Predictions

This analysis makes certain predictions with respect to possible patterns of case syncretism in DOM systems linked to the presence/absence of Nom=Acc syncretism in a language. In particular, given that the Nom=Acc syncretism is a prerequisite for the occurrence of Acc'=Gen and Acc'=Acc syncretism, we should expect the Acc'=Gen and Acc' patterns to be available only in languages/word classes where the neutralization of Acc has taken place. For

DOM languages without neutralization (distinct Acc) the analysis predicts only one possible outcome of case syncretism: Acc'=Dat.

The order of the neutralization rule and the DOM rule is important, since for languages where neutralization is not ordered prior to DOM, the application of the DOM rule will result in a general Acc'=Dat syncretism.

Moreover, we predict a possibility of a language/word class where the neutralization does not apply. The expected outcome of the syncretism pattern is Acc'=Dat. However, the major distinction expected for these word classes is the co-occurrence of Acc'=Dat with a regular Acc within the same word classes. Such pattern is observed in *Leísmo* Spanish. In this dialect, the Acc form of the clitic *lo* is substituted by a Dat form *le* for special (animate/personal) objects of Masc while the clitic *la* is substituted by *le* for special objects of Fem gender. However, the Acc form *lo* continues to be used on typical Masc objects as well as the Neut, while *la* is used for typical objects of Fem gender (Fernández-Ordonéz (2009:29-34), Bossong (1991:155). Compare *Leísmo* Spanish (Basque Romance Paradigm) in (53) with Standard Spanish paradigm in (54)[26].

(53) *Leísmo* Spanish (Fernández-Ordonéz (2009:29-32)

	Animate		**Inanimate**			
	Masc	**Fem**	**Masc**		**Fem**	
Acc	Sg	Pl	Sg	Pl	Sg	Pl
	le	*les*	*lo*	*los*	*la*	*las*
Dat	*le*	*les*	*le*	*les*	*le*	*les*

(54) Standard Spanish

	Singular		**Plural**	
	Masc	**Fem**	**Masc**	**Fem**
Acc	*lo*	*la*	*los*	*las*
Dat	*le*	*le*	*les*	*les*

Word/inflection classes that have retained the Nom/Acc distinction should not be expected to use Genitive case for DOM. Research on this issue shows that the prediction is born out: languages' declension classes/word classes which show Acc=Gen syncretism also show Nom=Acc (Slavic languages: Bulgarian, Slovenian, Serbo-Croatian, Polish, High Sorbian, Czech, Slovak, Ukrainian, Belarusian, Russian, Ossetian (Bossong (1997)), Finnish (Kiparsky (2001)) Declension classes/Word classes which distinguish Nom from Acc do not show Acc'=Gen (see Appendix 3).

Another prediction of the analysis is that Acc'=Acc syncretism should be available only in the presence of the neutralization for the same word classes. This prediction is also borne out: all languages with the Acc' pattern lack the regular Acc form (Turkish, Jaghnobi, Mongolian, Tâleši, Hebrew, Tâti, Bashkir among others (see Bossong (1985) for more language examples).

6. Syntax or morphology? Syntactic Accounts of DOM

A number of syntactic accounts of DOM have been suggested in the literature (Aissen (2003), Næss (2004), Carnie (2005) cross-linguistically, Torrego (1998), Rodríguez-Mondoñedo (2007) for Spanish). The common line of the analysis in these accounts is that marked objects

[26] The term *Leísmo* is used to refer to a phenomenon of extension of the dative form of a clitic to personal (animate) objects both masculine and feminine. This tendency is observed in several dialectal groups of Spanish: Western Castilian, Cantabrian and Basque Romance (Fernández-Ordonéz (2009:29-33). I illustrate one of the paradigms in (5).

undergo overt raising to a position structurally higher than unmarked objects based on specificity (Torrego (1998)) or animacy (Rodríguez-Mondoñedo (2007)).

The analysis proposed in this paper does not bear on the issue of whether DOM may have a syntactic component in addition to the rules of morphological exponence (Vocabulary Insertion) The account of the syncretism patterns does not exclude the possibility that DOM effects can be expressed at both a syntactic level and morphological level.

On the assumption that case synretism at the morphology level signals an application of the syntactic DOM rule, a single syntactic DOM rule would not be sufficient to explain the Russian facts. The DOM effects in Russian are restricted to some but not other nominal inflection classes. The contrast can be illustrated on the basis of inflection class I and II (see Appendix 1). Declension class I shows Acc'=Gen syncretism for animate nouns, unlike declension II where animate nouns receive unique Acc and thus are similar to their inanimate counterparts. In addition, the same declension class II does show Acc'=Gen in plural on a par with the rest of the declension classes.

Similarly, consider the following minimal pair in (55). Both of the objects in (55)a,b are animate (proper names), however, one of them receives Gen in a direct object position while the other receives Acc. The distinction has a purely morpho-phonological basis: 'Pavlik' is a Masc, Sg nominal stem ending in -ø (Class I), while 'Nikita' is a Masc, Sg nominal stem ending in –a (Class II). It seems highly implausible to me that a purely syntactic analysis can accommodate such cases.

(55)a. Ja vižu Pavlika
I see Paul$_{Acc=Gen}$
'I see Paul'
b. Ja vižu Nikitu
I see Nikita$_{Acc}$
'I see Nikita'

7. Conclusion

In this paper I have proposed an analysis of case syncretism in DOM systems. I have argued for the existence a universal DOM rule [- peripheral]→ [+peripheral] that allows for the derivation of all three major Case patterns in DOM languages. Moreover, I have proposed that the choice among the three outcomes of the DOM rule are not entirely arbitrary and are in part predicted from other aspects of the case morphology in a given language.

I have made a theoretical contribution in this paper by providing empirical and theoretical arguments in favor of use of a 'feature freezing' operation. I have argued for its theoretical and conceptual advantages over an impoverishment operation.

8. Appendix 1

(1)a. Inflection class I, Sg: masc

Sg	Zavod$_m$ 'factory'	Student 'student'
Nom	**Zavod-Ø**	Student- Ø
Acc	**Zavod- Ø**	**Student-a**
Dat	Zavod-u	Student-u
Gen	Zavod-a	**Student-a**
Instr	Zavod-om	Student-om
Loc	Zavod-e	Student-e

(1)b Inflection class II, Sg: fem, masc

Sg	Komnat$_f$ ‘room’	mužčin$_m$ ‘man’
Nom	**Komnat-a**	**Mužčin-a**
Acc	**Komnat-u**	**Mužčin-u**
Dat	Komnat-e	Mužčin-e
Gen	Komnat-y	Mužčin-y
Instr	Komnat-oj	Mužčin-oj
Loc	Komnat-e	Mužčin-e

(1)c Inflection class III, Sg: fem

Sg	Tetrad$_f$ ‘notebook’	doč ‘daughter’
Nom	**Tetrad’-Ø**	**Doč - Ø**
Acc	**Tetrad’- Ø**	**Doč- Ø**
Dat	Tetrad-i	Doč-er-i
Gen	Tetrad-i	Doč-er-i
Instr	Tetrad-ju	Doč-er-ju
Loc	Tetrad-i	Doč-er-i

(1)d Inflection class IV, Sg : neut

Sg	Mest$_n$ ‘place’	Suščestvo ‘creature’
Nom	**Mest-o**	**Suščestvo**
Acc	**Mest-o**	**Suščestvo**
Dat	mest-u	Suščestv -u
Gen	mest-a	Suščestv-a
Instr	mest-om	Suščestv-om
Loc	mest-e	Suščestv-e

(1) e Plural inanimates nouns

PL	Zavod ‘factory’	Komnat ‘room’	Tetrad’ ‘notebook’	Mest ‘place’
Nom	**Zavod-y**	**Komnat-y**	**Tetrad-i**	**Mest-a**
Acc	**Zavod- y**	**Komnat-y**	**Tetrad-i**	**Mest-a**
Dat	Zavod-am	Komnat-am	Tetrad-jam	mest-am
Gen	Zavod-ov	Komnat-Ø	Tetrad-ej	Mest-Ø
Instr	Zavod-ami	Komnat-ami	Tetrad’-ami	mest-ami
Loc	Zavod-ah	Komnat-ah	Tetrad’-ah	mest-ah

(1) d
Plural animate nouns

PL	Student ‘student’	mužčin$_m$ ‘man’	doč ‘daughter’	Suščestvo ‘creature’
Nom	Student- y	Mužčin-y	Doč – er-i	Suščestva
Acc	**Student-ov**	**Mužčin-Ø**	**Doč- er-ej**	**Suščestv-Ø**
Dat	Student-am	Mužčin-am	Doč-er’-am	Suščestv -am
Gen	**Student-ov**	**Mužčin-Ø**	**Doč-er-ej**	**Suščestv-Ø**

Instr	Student-ami	Mužčin-ami	Doč-er'-mi	Suščestv-ami
Loc	Student-ah	Mužčin-ah	Doč-er'-ah	Suščestv-ah

9. Appendix 2

Differential Object Marking. Case syncretism Patterns Across Languages

Acc'	**Acc'=Dat**	**Acc'=Gen**	**Other**
Bashkir	Ibero-Romance	Finnish	Rumanian Acc'=Loc
Turkish	Upper and Lower Engadinian	Ossetian	
Mandju	Italian	Russian	
	Sardinian	Bulgarian	
Jaghobi	Sora (Munda)	Slovenian	
Tâleši	Late Akkadian	Serbo-Croatian	
Tâti	Classical Ethiopian	Czech	
Awromâni	Classical Arabic	Slovak	
Pitjantjatjara (Pama-Nyungan)	Iraqi Arabic	Ukrainian	
Hebrew	Syro-Lebanese	Belorussian	
Dyirbal	Syriac	Polish	
Uzbek	Hindi		
Persian	Punjabi		
	Eastern Armenian		
	Aymara		
	Catalan		

Acc' pattern

(1) a. hin kitap-**tï** uqïy-hïn Bashkir (Bossong,1998:248)
you the book$_{Acc'}$ read-2sg
'You are reading the book'
b. hin kitap$_{Ø}$ uqïy-hïn
you a/some book read-2sg
'You are reading a book'

(2) a. Ali bir kitab-**i** aldi Turkish (Aissen, 2003:454)
Ali one book$_{Acc'}$ bought
'Ali bought the book'
b.Ali bir kitap aldi
Ali one book$_{Ø}$ bought
'Ali bought some book'

(3) a. bi dengjan-**be** mukiye-bu-he Mandju (Bossong, 1991:161)

I lamp$_{Acc'}$ be extinguished-caus-perf
'I have extinguished the lamp'
b. bi bithe ara-mbi
I letter write-AOR
'I am writing a letter'

(4) a. man Šarif-**i** ni.wen.im Jaghnobi (Bossong, 1985:17)
I Sharif$_{Acc'}$ not seen
'I have not seen Sharif'
b. Satorr.i čoyØ uxta.x či bozor.i
Satorr-Erg tea bring-perf from market

(5) a. mən a šaxs.**e** venna Tâleši (Bossong, 1985:21)
I this person$_{Acc'}$ saw
'I have seen this person'
b.ai vinde do.i bənda nəšt.a i näfär.ø
he saw tree under sat one person
'He saw one man sitting under a tree'

(6) a. in sib.ä bä dÿ juga baxš san Tâti (Bossong, 1985:56-7)
this apple$_{Acc'}$ in two parts split do
b. ou. ø xord.ÿm
water drank-1sgl

(7) a. kām kįteb.**i** mį.wān.i.ɔ Awromâni (Bossong, 1985: 26)
which book$_{Acc'}$ pres-read 2sg
'Which book are you reading now?'
b.či žan.ewa.ø nį. mār.i
what woman-indef not marry.2sg
'Why don't you marry a woman'

(8) a. Tjitji-ngku Billy-nya/ngayu-nya nyangu Pitjantjara (Pama-Nyungan)
child-Erg Billy$_{Acc'}$/1sg$_{Acc'}$ see-past (Aissen, 2003:452)
'The child saw Billy/me'
b. Billu-lu tjitjiø nya-ngu
Billy-Erg child see-past
'Billy saw the child'

(9) a. nad^{y}a ŋinu-na balgan Dyirbal (Pama-Nyungan)
I-Nom you $_{Acc'}$ hit
'I hit you'
b. nad^{y}a balagara ø balgan
I they $_{Acc}$ hit
'I hit them'

(10) a. Ha-seret her'a 'et-ha'milxama Hebrew (Aissen, 2003:453)
the movie showed $_{Acc'}$- the- war
'The movie showed the war'
b. Ha-seret her'a (*'et) milxama
the movie showed war

‘The movie showed a war’

(11) a. sut**ni** ičildi
the milk$_{Acc'}$ was drunk
b. čɔy ičtik Uzbek (Sjoberg, 1963:144)
tea-ø we drank

(12) a. ketâb.**râ** mi.xân.ad Persian (Bossong, 1985:63)
Book$_{Acc'}$ reading-3sg
‘He is reading the book’
b. ketâb-Ø mi.xân.ad
Book reading-3sg
‘He is reading a book’

Acc’=Dat pattern

(1) a. a mibi non kereš Spanish/Mozarabic
Acc’=Dat 1sgl $_{Acc'=Dat}$ not love-2sg (Bossong, 1991:147)
‘You do not love me’
b. beiğa mia bokella
kiss my mouth-ø
‘Kiss my mouth’

(2) a. Barnard vaiva marida a la figlia
Bernard was+going marry $_{Acc'=Dat}$ the daughter
d’ un fuorner rich Engardian (Bossong, 1991:149)
of a baker rich
‘Bernard was going to marry the daughter of a rich baker’
b. eu nu vogl cha meis figl marida una bastarda
I Neg want that my daughter marries a bastard
‘I do not want my daughter to marry a bastard’

(3) a. ddascio da Necoscia Italian/Gallosiculian
leave-1sgl Nicosia $_{Acc'=Dat}$ (Bossong, 1991:148)
‘I leave (the city of) Nicosia’
b. ddascio sta bedda criesgia-ø
leave-1sgl this beautiful church
‘I leave this beautiful church’

(4) a. a mortu a Serbadore Sardinian/Nuorese
Has killed Salvatore $_{Acc'=Dat}$ (Bossong, 1991:148)
‘He killed Salvatore’
b. a mortu su lupu-ø
has killed the wolf
‘He killed the wolf’

(5) a. anin pəsij-ən ad’ɔŋ gij-lɛ Sora (Munda)
he child body $_{Acc'=Dat}$ saw (Bossong, 1991:160)
‘He saw the child’
b. anin kənsim ad’ɔŋ tib-lɛ

he chicken body$_{Acc'=Dat}$ cut

(6) a. ana sarr-i bel-ija l-i-krub-u
$_{Acc'=Dat}$ king-Gen lord-1sg OPT-3ag-bless-pl
'May they bless the king my lord!' Akkadian
(Bossong, 1991:149)

(7) Classical Ethiopian (prep la Acc'=Dat Bossong, 1991:153)

(8) a. dayyafa 'ahū-kum li-'ahī-nā Arabic/Classical (Bossong, 1991:151)
he-invited brotherNom $_{Acc'=Dat}$ brother Gen 1pl Poss
'Your brother invited ours'

(9) a. 'alla yə-str-o ha-l-mudīr Syro-Lebanese
god 3sgl protect this def art-director (Bossong, 1991:151)
'May God protect this director'
b. la'ā la-l- mudīr rākeb bəl-brīmo
find-3sg def art director$_{Acc'=Dat}$ drive in first class

(10) a. man d-qātel had men hālen Syriac (Bossong, 1991: 157)
who kill one from these
'whoever kill one of these'
b. kad hzā l-had men bnay ^{c}am-eh
when see-3sg $_{Acc'=Dat}$ one from sons-of people-3sg
'When he saw his compatriots'

(11) a. No m'havien vist a mi Catalan (Comrie, 1979:15)
Neg they have seen $_{Acc'=Dat}$ 1sg
b. No havien vist l'alcalde ø
Neg they have seen the mayor

(12) a. Adneen-ne Naadyaa-ko bazaar-mẽ dek^{h} aa
Adnaan-$_{Erg}$ Nadyaa-$_{Acc'=Dat}$ market in saw-perf
'Adnaan saw Naadyaa in the market place'
Hindi (Aissen, 2003:466)
b. Ravii-ne kaccaa kelaa-ø kaataa
Ravi-$_{Erg}$ unripe banana cut
'Ravi cut an unripe banana'

Acc'=Gen pattern

(1) a. Matti anta-a häne-n näh-dä karhu-n
Matti-$_{Nom}$ let-3sg him-Gen see bear $_{Acc'=Gen}$
'Matti will let him see the (a) bear' Finnish (Kiparsky, 2001:317)
b. Matti anta-a häne-n näh-dä sinu-t
Matti will let him see you $_{Acc}$
'Matti will let him see you'

(2) a. Azaw Tajmuraz.**ə** awədt.a Ossetian (Bossong, 1985:16)

Azaw Taimuraz $_{Acc=Gen}$ saw-3sg
'Azau saw Taimuraz'
b. jä fos.Ø nə.wwag't.a
his herd $_{Acc}$ abandoned-3sg
'He abandoned his herd'

(3) a. Ja vstrečaju dorog**ih** gost**ej** Russian (Bossong, 1991:160)
I meet dear$_{Acc=Gen}$ guests$_{Gen=Acc}$
'I meet dear guests'
b. Ja pokupaju dorog**ie** veščі.
I buy expensive$_{Nom=Acc}$ things$_{Nom=Acc}$
'I buy expensive things'

(4) Martuthunira (Pama-Nyungan) Acc'=Gen in all but vocalic stem nominal and in 1sgl and 2sgl pronouns (Dench 1995)

(5) a. chłopec, ktorego Maria lubi Polish (Franks, 1995:69)
boy who $_{Acc=Gen}$ Maria loves
'The boy whom Maria loves'
b. portfel, ktory ukradziono
briefcase which$_{Nom=Acc}$ stolen
'The briefcase which was stolen'

Other Patterns

(1) a. l- a adus nenea pe copil Rumanian (Bossong, 1991:157)
him has brought uncle **$_{Acc'=Loc}$** child
'The uncle has brought the child'
b. a născut o femeie un copil negru
has born woman a child black
'A woman has given birth to a black child'

(2) a. yəmin-xa YHWH ti-r^{c} ac **ø**'oyev Biblical Hebrew (Bossong,1991:149)
right2sg Yahve 2ag-shatter enemy**$_{Acc}$**
'The right hand, O Lord, shatters the enemy'

b. wa-yi-rac-u 'et-bəne Yisra'el
and 3-sg shatterpl **$_{Acc}$**,sons of Israel
'They crushed the children of Israel'

c. ahav-ta lə-re a-xa kamo-xa
love 2sg **$_{Acc'=Dat}$** comrade 2sg poss like 2sg
'You shall love your neighbor as yourself'

(3) a. šilh-et l-ax təre həmār-in Armaic/Imperial (Bossong, 1991:150)
send-1sg dat-2sg two ass-pl**$_{Acc}$**
'I have sent you two asses'

b. ti-šləh-un li yat ' el^{c}azar bar HTH
ag-send-pl dat sgl **$_{Acc}$**, Eleazer son of
'You are to send to me Eleazar, son of HTH'

c. haškah-at lə-‘ahiqar
find-1sg $_{\textbf{Acc'=Dat}}$ Ahiqar
‘I found Ahiqar’

(4) Bonan (Mongolic): nouns Acc’=Gen, pronouns Acc’=Dat (Baerman et al, 2005:51)

	Noun ‘foliage’	Pronoun ‘he’
Nom	labčoŋ	ndžaŋ
Gen	**labčoŋ-ne**	ndžaŋ-ne
Acc	**labčoŋ-ne**	**ndžaŋ-de**
Dat-Loc	labčoŋ-de	**ndžaŋ-de**
Abl	labčoŋ-se	ndžaŋ-se
Ins-Com	labčoŋ-Gale	ndžaŋ-Gale

10. Appendix 3
Table of the language types predicted by the analysis

Case syncretism in DOM	**Presence/absence of Neutralization (Acc=Nom)**	**Acc’ is defined**	**Examples of languages/word classes**
1.Acc→Dat for DOM, no distinct Acc for typical objects	no Neut for DOM Neutr for typical objects	no Acc’	Spanish, Persian, Catalan, Arabic, Syriac, Hindi
2.Acc→Dat and distinct Acc for typical objects	Neutr does not apply to DOM objects and no Neutr for typical objects	no Acc’	*Leismo* Spanish, Imperial Armaic
3.Acc→Dat and no distinct Acc for typical objects	Neutr does not apply to DOM objects and Neutr for typical objects	no Acc’	See 1
4.Acc→Acc’ no distinct Acc for typical objects	Neut for DOM Neutr for typical objects	Acc’	Turkish, Bashkir, Uzbec, Hebrew, Madju
5. Acc→Acc’ distinct Acc for typical objects	Neutr for DOM No Neutr for typical objects	Acc’	?
6.Acc→Gen distinct Acc for typical objects	Neut for DOM no Neutr for typical objects	no Acc’	?
7.Acc→Gen no distinct Acc for typical objects	Neutr for DOM and for typical objects	no Acc’	Ossetian, Russian plurals, Russian class I, Polish, Czech, Slovak, Ukranian, Slovenian, Martuthunira (Pama-Nyungan)

11. Appendix 4
Acc'=Acc pattern without the DOM rule

There exists another logical possibility for deriving the Acc'=Acc case pattern. Since we find no examples of DOM languages that would retain distinct Acc for typical objects while marking special objects by Acc' (see Appendix 3), it is plausible that what Bossong (1985) (1991) defined as Acc' in a language like Turkish is in fact a regular Acc. The special marking of objects observed in this type of language then is a result of a differential Neutralization rule which applies to 'typical' objects only (i.e, objects *low* on the animacy/individuation hierarchy), leaving atypical objects marked by Acc.

This possibility of the analysis has the following assets: (i) there is no need for postulating a special marked Acc (Acc') in addition to a regular Acc and (ii) no issue arises with placing Acc' with respect to other cases on the Case Hierarchy.

The formulation of a parameterized Neutralization rule at work in Acc' DOM languages is given in (1) below.

(1) **Neutralization rule 2 (Differential)**

$$[+\,\text{mot}] \rightarrow [\langle+\rangle\,\text{mot}] \,/\, \begin{bmatrix} \_\_ \\ [\text{-per}] \end{bmatrix}$$

NP objects low on animacy/individuation scale (language specific)

The rule applies in a context of a 'typical' object (i.e, an object *low* on the animacy/individuation hierarchy)

The rule in (1) applies to the terminal node, the terminal node after application of the Neutralization rule 2 is shown in (2) below.

(2) $\begin{bmatrix} p\text{-} \\ s\text{-} \\ l\text{-} \\ m\langle+\rangle \end{bmatrix}$

I illustrate the process of VI by means of Turkish. The vocabulary items competing for insertion in Turkish are listed in (55). In this analysis, in contrast to the analysis presented in section 4, Acc' is not on the list of vocabulary items since, by hypothesis, it does not exist. Regular Acc case is ordered after Gen in line with Blake's (1994) case hierarchy.

(3) dan ↔ $\begin{bmatrix} p & + \\ s & + \\ l & + \\ m & + \end{bmatrix}$ (Abl)

da ↔ $\begin{bmatrix} p & + \\ s & - \\ l & + \end{bmatrix}$ (Loc)

a ↔ $\begin{bmatrix} p & + \\ m & + \end{bmatrix}$ (Dat)

in ↔ $\begin{bmatrix} p & + \\ s & + \end{bmatrix}$ (Gen)

ɨ ↔ [p -, m +] (Acc)

ø ↔ [ ] (Nom)

From the list of vocabulary items in (3), only the Nom case exponent does not have a conflict with the features of the terminal node in (2). The Acc case exponent can not be inserted since it has a feature [+motion] conflicting with a feature [<+> motion] at the terminal node. Due to feature freezing, the feature <+> motion on the terminal node is invisible for vocabulary insertion.

Given that the Neutralization rule 2 applies only in the context of a typical object, the Acc case exponent will be chosen for insertion in an instance of atypical (marked) object. Consider the terminal node of Acc in the absence of the Neutralization 2 rule in (4) below. The value of feature [+motion] at the terminal node remains unchanged and thus, the most specific candidate of the list of vocabulary items in (3) chosen for vocabulary insertion is /ɨ/ but not /ø/.

(4) [p -, s -, l -, m +]

However, there are several drawbacks of deriving the Acc' pattern by means of a differential Neutralization rule. The first disadvantage of such an analysis is that the claim of a uniform DOM rule is considerably weakened. Under this view, DOM languages get divided into two groups: Group 1 (Acc=Dat, Acc=Gen) which appeal to the DOM rule to accommodate the DOM effects and Group 2 (Acc'=Acc) which make use of a differential Neutralization rule to derive the same effect. One has to wonder why languages that show the phenomenon have to appeal to two opposite strategies to derive the effect of DOM at the morphology level. Bossong (1985), (1991), Aissen (2003) highlight the uniformity of the conditions on differential marking of objects across DOM languages: high individuation, animacy, definiteness etc. Given the uniformity of distribution, one would expect a single type of rule that applies in all DOM languages.

The second disadvantage is that such an analysis would go against the general intuition in the literature about the special status of the DOM effects in terms of markedness: DOM is characterized by an increase of a contrast under special conditions, as opposed to a more commonly found reduction of the contrast under special conditions (i.e. final devoicing in phonology).

The third weak point of this analysis is the existence of languages where a non-ø Acc is distinct from Acc'=Dat. Given the availability of such a pattern, we can conclude that the DOM rule and the Neutralization rule co-exist and are needed independently. Therefore, viewing Acc' languages as a unique type of DOM pattern seems less plausible. The above mentioned pattern is found in *Leísmo* Spanish (see (53), (54) main text).

I have explored another logical possibility of analysis for the Acc' pattern. In particular, I have executed an idea that the Acc' pattern of syncretism, in contrast to other patterns of syncretism in DOM, is a result of a differential Neutralization rule. However, as pointed out above, this analysis reveals a number of problems. While acknowledging that the arguments in favor of the analysis in the main text, as opposed to the alternative in this appendix, are not entirely conclusive, I pursue the stronger option of a unified account of DOM with a single rule made available by UG in the absence of conclusive arguments against this approach.

12. 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.

Baerman, Matthew, Dunstan Brown and Greville G. Corbett. (2005). The Syntax-Morphology Interface. A Study of Syncretism. Cambridge: Cambridge University Press.

Bailyn, John and Andrew Nevins. (2008). Russian genitive plurals are impostors. In *The basis o inflectional identity,* A. Nevins and A. Bachrach (eds.), Oxford: Oxford University Press.

Bhatt, R. and E. Anagnostopoulou. (1996). Object Shift and Specificity: Evidence from ko-phrases in Hindi. In *Papers from the 32nd Regional Meeting of the Chicago Linguistic Society 1996.* University of Chicago. 11-22.

Blake, Barry J. (1994). *Case*. Cambridge: Cambridge University Press.

Bobaljik, Jonathan. (2002). Syncretism without paradigms: Remarks on Williams 1981, 1994. In *Yearbook of Morphology 2001*, G. Booij and J. van Marle (eds), pp.53-86. Kluwer, Dordrecht.

Bossong, Georg. (1979). Proglegomena zu einer syntaktischen Typologie der romanischen Sprachen . *Fetschrift Kurt Baldinger zum 60. Geburtstag*, pp. 54-68. Tübingen: Max Niemeyer.

Bossong, Georg. (1980). Aktantenfunktionen in romanischen Verbalsystem. *Zeitschrift für romanische Philologie 96*: 1-22.

Bossong, Georg. (1985). Empirische Universalienforschung, Differentielle Objektmarkirung in der neuiranischen Sprachen. Tübingen: Narr.

Bossong, Georg. (1991). Differential Object Marking in Romance and Beyond. In D. Wanner and D. Kibbee, eds., *New Analyses in Romance Linguistics, Selected papers from the XVIII Linguistic Symposium on Romance Languages 1988*, Amsterdam: Benjamins. 143-170.

Bosssong, Georg. (1997). Le Marquage Différentiel de L'Object dans les Langues d'Europe. In *Actance et Valence dans les Langues d'Europe*, J. Feuillet (ed.), pp.193-258. Berlin: Mouton de Gruyte.

Calabrese, Andrea. (1988). Towards a theory of phonological Alphabets. PhD. Dissertation, Cambridge, Mass.: MIT.

Calabrese, Andrea. (1995). A constraint-based theory of phonological markedness and simplification procedures. *Linguistic Inquiry* 26: 373-463.

Calabrese, Andrea. (1998). Some remarks on the Latin case system and its development in Romance. In *Theoretical Advances on Romance Languages,* J.Lema and E.Trevino (eds.), pp. 71-126, Amsterdam: John Benjamins.

Calabrese, Andrea. (2002). On Impoverishment and fission in the verbal morphology of the dialect of Livinallongo. In *Studies on Italian Dialects*, C. Tortora (ed.), pp.3-33. Oxford: Oxford University Press.

Calabrese, Andrea.(2005). *Markedness and Economy in a Derivational Model of Phonology*. Berlin: Mouton de Gruyter.

Calabrese, Andrea. (2008). On Absolute and Contextual Syncretism. In A. Bachrach and A. Nevins, eds., *Inflectional Identity*. Oxford: Oxford University Press.

Caha, Pavel. (2009). Classical Armenian Declension. In: P. Svenonius, G. Ramchand, M. Starke, and T. Taraldsen, eds., *Nordlyd* 36, special issue on Nanosyntax, pp.77-112. CASTL, Tromsø,

Caha, Pavel. (2009)b. The Nano-syntax of Case. Ph.D. Dissertation, CASTL, University of Tromsø.

Carnie, Andrew. (2005). A Phase-geometric approach to multiple marking systems. In *Perspectives on Phases*, Martha McGinnis and Norvin Richards (eds.), pp. 87-102. Cambridge, Ms.: MIT Working Papers in Linguistics 49.

Clements,G. (2001). Representational economy in constraint-based phonology. In T. Alan Hall (ed.), *Distinctive Feature Theory,* 71-146. Berlin: Mouton de Gruyter.

Corbett, Greville G. (1982). Gender in Russian: an account of gender specification and its relationship to declension. *Russian Linguistics* 6: 197-232.
Corbett, Greville G. (1991). *Gender*. Cambridge: Cambridge University Press.
Corbett, Greville G. and Norman M. Fraser. (1993). Network morphology: a DATR account of Russian nominal declension. *Journal of Linguistics* 29: 113-142.
Fernández-Ordonéz, I. (2009). Dialect grammar of Spanish from the perspective of the audible corpus of spoken rural Spanish. *Dialectologia* 3:23-51.
Franks, S. (1995). *Parameters of Slavic Morphosyntax*. New York NY: Oxford University Press.
Greenberg, Joseph. H. (1963). Some universals of grammar with particular reference to the order of meaningful elements. In Greenberg, J. (ed.), *Universals of language*. Cambridge, Mass: MIT Press. 73-113.
Halle, Morris and Alec Marantz. (1993). Distributed Morphology and the pieces of inflection. In K. Hale and S.J. Keyser, eds., *The View from Building 20: Essays in Linguistics in Honour of Sylvain Bromberger*. Cambridge, Mass.: MIT Press.111-176.
Halle, Morris and Alec Marantz. (1994). Some key features of Distributed Morphology. *MIT Working Papers in Linguistics 21*, 275-288.
Halle, Morris. (1994).The Russian Declension: An Illustration of the Theory of Distributed Morphology. In J. Cole & C. Kisseberth, eds., *Perspectives in Phonology*. CSLI Publications, Stanford. 29–60.
Halle, Morris. (1995). Feature geometry and feature spreading. *Linguistic Inquiry* 26:1-46.
Halle, Morris. (1997). Distributed Morphology: Impoverishment and Fission. In: *Papers at the Interface*, B. Bruening, Y. Kang & McGinnis (eds.),pp. 425-449, MITWPL 30.
Halle, Morris and Bert Vaux. (1998). Theoretical aspects of Indo-European nominal morphology: the nominal declensions of Latin and Armenian. In J. Jasanoff, H. Melchert, and L. Olivier, eds., *Mir Curad: Studies in Honor of Calvert Watkins*, Innsbruker Beiträge zur Sprachwissenshaft. Institut für Sprachwissenschaft der Universität Innsbruck, Innsbruck. 223-240.
Halle Morris, Bert Vaux and Andrew Wolfe. (2000). On feature spreading and the representation of place of articulation. *Linguistic Inquiry* 31: 387-444.
Isaak, A. (2000). Split case marking and prominence relations. UMass: PhD Dissertation.
Jakobson, Roman. (1948). Russian conjugation. *Word 4*:155-167.
Jakobson, Roman. (1962). Beitrag zur allgemeinen Kasuslehre. Gesamtbedeutung der russischen Kasus. In *Selected Writings 2*, Mouton, The Hague and Paris. 23-71.
Keine, Stefan and Gereon Müller. (2008). Differential Argument Encoding by Impoverishment. In *Linguistische Arbeit Berichte* 86, M. Richards and A. Malchukov (eds.), pp.83-136. Universität Leipzig.
Kiparsky, Paul. (1998). Partitive Case and Aspect. In M.Butt & W. Geuder, eds., The Projection of Arguments. CSLI Publications, Stanford University. 265-307.
Kiparsky, Paul. (2001). Structural Case in Finnish. *Lingua 111*: 315-376.
Klenin, Emily. (1983). Animacy in Russian. A New Interpretation. *UCLA Slavic Studies*, 6. Columbus, Ohio: Slavica,139.
Ninassian, Martiros. (1980). Grammaire d'Armenien oriental. Delmar : Caravan Books.
Müller, Gereon. (2004). A Distributed Morphology Approach to Syncretism in Russian Noun Inflection. In O. Arnaudova, W. Browne, M.L. Rivero & D. Stojanovic, eds., Proceedings of FASL 12. University of Ottawa.
Næss, Åshild. (2004). What markedness marks: the markedness problem with direct objects. *Lingua* 114:186-212.
Neidle, Carol. (1988). *The role of Case in Russian Syntax*. Kluwer, Dordrecht.
Noyer, Rolf. (1998). Impoverishment theory and morphosyntactic markedness. In *Morphology and its relation to phonology and syntax*, Steve Lapointe, Diane K. Brentari, and Patrick Farrell (eds.), pp.264-285. CSLI, Stanford,
Radkevich, N. (2008). Local Cases. Ms. University of Connecticut, Storrs.

Rodríguez-Mondoñedo, Miguel. (2007). The syntax of objects: agree and differential object marking. UConn: PhD Dissertation.
Silverstein, M. (1976). Hierarchy of features and ergativity. In *Grammatical Category in Australian Languages*. Robert M.W. Dixon (ed.), pp. 112-171. Camberra: Australian Institute of Aboriginal Studies.
Stankiewicz, Edward. (1968). Declension and gradation of Russian substantives in contemporary standard Russian. The Hague: Mouton.
Thomson,A.I. (1908). Roditel'nyj-Vinitel'nyj padež pri nazvanijax živyx suščestv v slavjanskix jazykax. Izvestija otd. Russkogo jazyka i slovestnosti, 13.2 : 232-264.
Timberlake, Alan. (1979). Reflexivization and the cycle in Russian. *Linguistic Inquiry* 10:109-141.
Torrego, E. (1998). The Dependencies of Objects. Cambridge, Mass.: MIT Press
Vinogradov, V. V., Istrina, E. S. & Barxudarov, S. G. (eds.) (1952). Grammatika russkogo jazyka, vol. I: Fonetika i morfologija. Moscow: AN SSSR.