Diachrony of differential argument marking

Edited by

Ilja A. Seržant

Alena Witzlack-Makarevich

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Preface

Most of the 18 papers in this volume were presented at the workshop *The Diachronic Typology of Differential Argument Marking*, held at the University of Konstanz, April 5–6, 2014.

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Chapter 1

Differential argument marking: Patterns of variation

Alena Witzlack-Makarevich
University of Kiel

Ilja A. Seržant
Leipzig University

In this introductory article we provide an overview of the range of the phenomena that can be referred to as differential argument marking (DAM). We begin with an overview of the existing terminology and give a broad definition of the DAM to cover the phenomena discussed in the present volume and in the literature under this heading. We then consider various types of the phenomenon which have figured prominently in studies of DAM in various traditions. First, we differentiate between arguments of the same predicate form and arguments of different predicate forms. Within the first type we discuss DAM systems triggered by inherent lexical argument properties and the ones triggered by non-inherent, discourse-based argument properties, as well as some minor types. It is this first type that traditionally constitutes the core of the phenomenon and falls under our narrow definition of DAM. The second type of DAM is conditioned by the larger syntactic environment, such as clause properties (e.g. main vs. embedded) or properties of the predicate (e.g. its TAM characteristics). Then, we also discuss the restrictions that may constrain the occurrence of DAM cross-linguistically, other typical features of DAM systems pertaining to the morphological realization (symmetric vs. asymmetric) or to the degree of optionality of DAM. Finally, we provide a brief overview over functional explanations of DAM.

1 Introduction

In this introductory article we provide an overview of the range of phenomena that can be referred to as *differential argument marking* (DAM).[1] We begin this introduction with a survey of the existing terminology (this section). We then proceed to consider individual aspects of the phenomenon which have figured prominently in studies of DAM in various traditions (§2 and §3).

[1]Both authors contributed equally to the writing of this paper.

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The term *differential marking* – or to be historically precise, *differential object marking* (abbreviated as DOM) – was first used by Bossong (1982; 1985) in his investigations of the phenomenon in Sardinian and New Iranian languages. Somewhat older than this term is the term *split* (as in *split ergativity*) used in the line of research focusing primarily on the differential marking of the agent argument. It has been in use since Silverstein (1976) and was popularized by Dixon (1979; 1994).

Recent years have been marked by a growing interest in differential marking, and as a result numerous related terms have been coined to refer to individual roles marked differentially and particular patterns of differential marking. For example, de Hoop & de Swart (2008b) were the first to systematically discuss *differential subject marking* (DSM). Here, the syntactic term *subject* was understood rather broadly including different kinds of less canonical, subject-like arguments. Later, notions covering more specific argument roles were introduced: Fauconnier (2011) studies *differential agent marking*, whereas Haspelmath (2007) and Kittilä (2008) explore *differential recipient marking* or *differential goal marking*, as well as *differential theme marking*. Another notion that is subsumed under DAM is *optional ergative marking* (cf. among others McGregor 1992; 1998; 2006; 2010; Meakins 2009; Gaby 2010). As these and other authors show, in addition to the semantic function of encoding agents, ergative case is sometimes also employed to mark focal, unexpected or contrastive agent arguments. Finally, Sinnemäki (2014) – observing that the term DOM sometimes implies an assumption as to which factors trigger differential marking – introduced the term *restricted case marking (of the object)* to cover all cases of differential marking no matter what the respective factors are. Finally, in the traditions of the DAM research in individual language families and languages, many more language-, role- or marking-specific labels have been used, for instance, *prepositional accusative* in Romance linguistics (e.g. Torrego Salcedo 1999) or *bi-absolutive construction* in the Nakh-Daghestanian languages (e.g. Forker 2012).

The list of terms provided above makes it clear that research on differential marking has focused primarily on arguments. However, differential argument marking can be viewed as a subtype of a larger phenomenon which manifests itself in a complex interaction between the meaning and function of a particular marking pattern, on the one hand, and some properties of the constituents involved – both arguments and adjuncts –, on the other. For instance, the Persian marker *-rā* is not only used with direct object NPs but can follow nearly all kinds of constituents except for subject NPs: one finds it marking time-adverbial NPs, objects of prepositions, etc. (cf. various examples in Dabir-Moghaddam 1992; for a different example see the discussion of *differential time adverbial marking* in Baltic in Seržant 2016: 141–154). Besides, case marking needs not be fully paradigmatic and different cases/adpositions impose different selectional restrictions on the type of nominals they can mark. These restrictions may potentially create paradigmatic gaps and differential marking with both arguments and adjuncts. The main condition for this is the semantic compatibility between the meaning of a particular case/adposition and the nominal (Comrie 1986; Aristar 1997; Creissels & Mounole 2011). For example, Aristar (1997) shows that locational cases/adpositions are often less or zero marked with place names but require a dedicated suffix with other nouns which are less

expected to occur in expressions denoting location. Similarly, animacy is an important factor that decreases the likelihood of such cases as instrumental, ablative or locative to occur. Hence, highly animate nominals may either not form the locative cases at all or require additional marking. In turn, cases/adpositions such as dative or comitative typically require animate participants. Having said this, in what follows we will focus on differential marking of arguments primarily for reasons of space.

As is obvious from the plethora of terms listed above, differential marking is a very broad notion that covers a wide range of different phenomena. Given that the investigations in the present volume are aimed at diachronic processes we cannot *a priori* focus on a subset of cases for something that we treat here as being in flux, thereby leaving out phenomena that have the potential to develop into DAM in a more accepted sense (or in fact have been attested to undergo this development), as well as those phenomena that arguably originate from DAM but exhibit somewhat deviating properties due to later developments. For this reason, we keep the definition of DAM fairly broad. We will use the term DAM as defined in (1) (drawing on Woolford 2008; Iemmolo & Schikowski 2014):[2]

(1) Broad definition of DAM:
Any kind of situation where an argument of a predicate bearing the same generalized semantic argument role may be coded in different ways, depending on factors other than the argument role itself, and which is not licensed by diathesis alternations.

It follows from this definition that DAM is not restricted to case marking in the broad sense (also called dependent marking or flagging) and subsuming both morphological case and adposition marking (cf. Haspelmath 2005), but also includes differential agreement (or head marking or indexing). For example, Iemmolo (2011) has introduced the term *differential object indexing* (DOI) to refer to cases of differential argument marking on the verb in contrast to differential case marking on the noun phrase. Whereas some linguists think that the two types of differential marking share commonalities (e.g. Dalrymple & Nikolaeva 2011: 1–2), others claim that they are different in terms of their functions and triggers and may emerge from different diachronic processes (de Hoop & de Swart 2008a: 5; Iemmolo & Schikowski 2014). While we agree with this second view, we are open to the possibility that there might nevertheless be considerable overlap in both diachrony and synchrony.

To capture the different kinds of DAM systems, we put forward a coordinate system in which we highlight the aspects that we consider central for the understanding of DAM and give a narrower definition of DAM in (16). Both definitions will be used in the present volume and, in fact, there is often a diachronic relationship between them. In what follows we will first provide an overview of the properties staking out the phenomenon of DAM.

We begin with an overview of the synchronic variation of the phenomenon and first consider the argument-triggered DAM systems (§2.1). In particular, we discuss both in-

[2]Some authors go even further and consider inverse systems and voice alternations as instances of DAM (e.g. de Hoop & de Swart 2008a: 1).

herent lexical argument properties (§2.1.1; §2.1.2) and non-inherent discourse-based argument properties (§2.1.3) and proceed with the properties of the larger syntactic environment (§2.1.5). §2.2 covers DAM cases triggered by various predicate properties. §2.3 provides a brief summary of the various triggers for DAM. in §2.4, we introduce various restrictions that constrain the occurrence of DAM cross-linguistically. §3 is devoted to realization properties of DAM. §3.1 discusses the morphological distinction between symmetric vs. asymmetric DAM types. We then contrast different loci of realization of DAM: head-marking and dependent-marking (§3.2). §3.3 highlights differences in syntactic (behavioral) properties found with DAM. The distinction between obligatory vs. optional is introduced in §3.4. §3.5 provides a brief summary of the factors involved in variation. Finally, we discuss a few functional explanations (§4) and conclusions (§5).

2 Synchronic variation of DAM

As defined above, DAM encompasses a range of phenomena sharing the trait of encoding the same argument role in different ways. However, apart from this shared property DAM systems vary from language to language. To allow for the comparison of DAM systems and their diachronic development paths, we decompose the phenomenon into a number of characteristics which build upon the attested synchronic variation and suggestions made in the literature on the topic.

In what follows we introduce two orthogonal distinctions of DAM systems: *argument-triggered DAM* (§2.1) vs. *predicate-triggered DAM* (§2.2) and *restricted DAM* vs. *unrestricted DAM* (§2.4). We begin by considering those DAM systems where the differential argument marking may be found with one and the same form of the predicate (henceforth: *argument-triggered DAM*). For this type of DAM a number of variables are needed to account for the attested variation. These are various properties of arguments (§2.1.1–§2.1.3) and event semantics (§2.1.5). In §2.2, we will turn to predicate-triggered DAM types, all of which have in common that the differential argument marking depends on the actual form of the predicate involved.

2.1 Argument-triggered DAM

The properties of arguments can determine DAM in two ways. First, the properties of the differentially marked argument alone can be responsible for a particular marking. Second, the properties of more than one argument in a clause, i.e. the whole constellation of arguments, also referred to as scenario, can determine a particular marking. The first type is discussed in §2.1.1–§2.1.3 and summarized in §2.1.4, whereas the second type is considered in §2.1.5. In both cases, the relevant argument properties include a wide range of inherent lexical (semantic and formal), as well as non-inherent, first of all pragmatic characteristics of arguments. These subtypes are considered in individual subsections. We thus follow Bossong (1991: 159) who first made the distinction between inherent and non-inherent properties of the NP in the context of DOM (cf. Sinnemäki 2014: 282, who distinguishes between referential and discourse properties). Inherent properties of

arguments (semantic and formal) are considered in §2.1.1–§2.1.2, non-inherent discourse-based properties are discussed in §2.1.3. Finally, we isolate as a subtype of DAM triggers cases, where argument properties closely linked to the semantics of the respective event determine the type of marking (§2.1.6).

2.1.1 Inherent lexical argument properties

Many of the properties we cover in this and the following section are often represented as integrated into various implicational hierarchies or scales. One of the most cited versions of such hierarchies is given in (2). It was introduced by Dixon (1979) as *potentiality of agency scale* and was based on Silverstein's (1976) *hierarchy of inherent lexical content.* A similar hierarchy was independently introduced by Moravcsik (1978) as *activity scale.*[3] The hierarchy was widely popularized by Croft (2003: 130) as the *extended animacy hierarchy.* Other common versions of the hierarchy include DeLancey's (1981) *empathy hierarchy* in (3), Aissen's (1999) *prominence hierarchy* given in (4), and *indexability hierarchy* in Bickel & Nichols (2007).

(2) first person pronoun > second person pronoun > third person pronoun > proper nouns > human common noun > animate common noun > inanimate common noun (Dixon 1979: 85)

(3) speech-act-participant (SAP) > 3rd person human > 3rd person > non-human animate > inanimate (adapted from DeLancey 1981: 627–628)

(4) local person > pronoun 3rd > proper noun 3rd > human 3rd > animate 3rd > inanimate 3rd (Aissen 1999: 674)

These and similar complex hierarchies involve a range of distinct dimensions, such as e.g. person or animacy (cf. Croft 2003: 130). These dimensions may be more or less relevant in shaping DAM systems in individual languages (see Aissen 1999 for examples). The major reason for the suggestion of extended versions of hierarchies, as in (2) or (3), is the fact that individual dimensions are not entirely orthogonal. Personal pronouns are not only inherently animate (except for the third person, cf. English *it*), they are also inherently definite and highly accessible referents. Therefore, they are highest ranked also on hierarchies based on definiteness (see §2.1.2) and on the accessibility hierarchy (cf. Ariel 1988; 2001) or in terms of topic-worthiness (Wierzbicka 1981). On the other hand, some authors (e.g. Dahl 2008) argue that complex hierarchies are problematic in many respects and should rather be viewed in terms of a combination of different factors operating simultaneously and not as one, unidimensional factor. Thus, though first and second person referents are always animate, whereas the third person referents can be both animate and inanimate, there is no reason to regard animate third person referents as less animate than first and second person referents (cf. Comrie 1989: 195). Analogically, personal pronouns, proper names or definite NPs are not distinct in terms of

[3] For a more extensive overview of the history of research on the effects of referential hierarchies on differential marking, see Filimonova (2005).

definiteness – these NP types are equally definite (cf. von Heusinger & Kaiser 2003: 45). Several researchers have proposed to decompose the single complex hierarchy into several layers or sub-hierarchies (cf. Croft 2003: 130; Siewierska 2004: 149). The advantage of such multi-layered hierarchies is that their sub-hierarchies are logically independent, and each hierarchy may have more or less influence on shaping the grammatical system of an individual language (Haude & Witzlack-Makarevich 2016).

In what follows we first provide an overview of individual dimensions contributing to the complex hierarchies discussed above and relevant for DAM and then present a few examples. We begin this overview with the inherent lexical argument properties which have a semantic component. The relevant dimensions and their levels are listed in Table 1.[4] These are probably the most frequently discussed factors behind DAM and examples of their effects on case marking or agreement can be easily found in the literature (e.g. Silverstein 1976; Aissen 1999; Dixon 1994). Note that these dimensions are still inherently complex in the sense that they can be further decomposed into a range of binary features as in Silverstein's (1976) original proposal (e.g. [±animate], [±human], [±ego]) or in Bossong 1991: 159).

Table 1: Inherent semantic argument properties.

Dimension	Example
Person	First & Second person > Third person > (Obviative / Fourth person) (cf. Dixon 1979: 85; Croft 2003: 130)
Animacy	Humans > Animate non-humans (animals) > Inanimate (cf. Bossong 1991: 159; Silverstein 1976; Aissen 2003)
Uniqueness	Proper nouns > Common nouns (e.g. as part of Croft 2003: 130)
Discreteness	Count nouns > Mass nouns (cf. Bossong 1991: 159)
Number	Singular vs. Plural vs. Dual

The individual levels in Table 1 are ordered – where possible – in an implicational hierarchy. With respect to argument marking these hierarchies are meant to reflect either universal constraints on possible splits in alignment of case and agreement and/or the cross-linguistic frequency of actual language types (cf. Croft 2003: 123). For instance, according to one reading, the types at the top of the hierarchies tend to show accusative alignment, whereas the ones at the bottom of the hierarchy tend to align ergatively (cf. Silverstein 1976, see also Bickel et al. 2015 for the testing of the effects of various hierarchies on alignment against a large sample of over 370 case systems worldwide).

By listing the dimensions individually in Table 1 we do not imply that for each of then there exists a DAM system in which a particular property is the only trigger of DAM. Rather, in the vast majority of languages these and further dimensions to be introduced later interact in an intricate fashion. For instance, we do not know of any language in

[4]Some authors rank the first and the second persons, e.g. Dixon (1979: 85) ranks the first person over the second person.

which number is the only relevant dimension, but there are many synchronic cases in which a combination of person and number provides an exact characterization of the split in marking, which is particularly common within pronouns (see Bickel et al. 2015 for examples). Number is also known to play a role in the diachrony of DAM. For instance, in Old Russian primarily animacy-driven DOM has started out in singulars and spread further to plurals. In this language, DOM (genitive vs. zero accusative) is attested with singular masculine proper names and human nouns from the earliest original Old Russian sources on, i.e. from the 11th c., representing the Common Slavic inheritance. At the same time, animacy-driven DOM spread onto plurals during the 13–15th centuries and to nouns referring to animals in the 16th c. (*inter alia*, Krys'ko 1994: 61). The dual forms developed animacy-driven DOM from the 12–14th c. (Krys'ko 1994: 98). There is evidence that the plural forms acquired DOM approximately during the same time period as the dual in Old Russian.

Not all of the properties listed in Table 1 apply to both DSM and DOM to the same extent. For instance, animacy is sometimes claimed to be a relevant parameter for DOM, while DSM/Differential Agent Marking systems that are organized exclusively along the animacy scale are rare (Fauconnier 2011). Fauconnier (2011) demonstrates that independently acting inanimates may pattern with animates with respect to Differential Agent Marking, while being distinct from inanimates acting non-independently (via human instigation). (See also Sinnemäki 2014 on the frequency of animacy as a factor conditioning DOM.)

Finally, animacy may have an effect on the DAM in a less straightforward way. Thus, von Heusinger & Kaiser (2007; 2011) and von Heusinger (2008) investigate the impact of animacy on the diachronic development of DOM in Spanish. They show that for a particular subset of objects, namely for both definite and indefinite human direct objects, the preference for *a*-marking depends among other things on the verb class. If the respective verb regularly takes human or animate objects, it tends to use the *a*-marking on its human objects more frequently than the verbs which regularly take inanimate objects. This trend is stable across different periods irrespective of the overall preference for the *a*-marking of objects.

2.1.2 Morphological argument properties

Apart from the inherent semantic properties of arguments discussed in §2.1.1, differences in argument marking may often be better captured in terms of inherent morphological properties of the relevant arguments. The latter include the part-of-speech distinction (pronoun vs. noun) and – much less frequently discussed – gender/inflectional-class distinctions. These two types of DAM will be discussed in what follows.

The pronoun vs. noun distinction is one of the most common lines of split in case marking worldwide (cf. Bickel et al. 2015). For instance, in Jingulu all pronominal patient-like arguments are marked with the accusative suffix *-u*, as in (5), whereas all nominal patients are in the unmarked nominative case, no matter whether they are animate, as in (6c) and (6d), human, as in (6d) or definite, as in (6b – 6d):

(5) Jingulu (Mirndi; Pensalfini 1997: 102, 160, 247)

a. *Angkurla* *larrinka-nga-ju* *ngank-u.*
NEG understand-1SG-do 2SG-ACC
'I didn't understand you.'

b. *Ngiji-ngirri-nyu-nu* *kunyaku.*
see-1PL.EXCL-2OBJ-did 2DU.ACC
'We saw you two.'

c. *Ɉaja-mi* *ngarr-u!*
wait-IRR 1SG-ACC
'Wait for me!'

(6) Jingulu (Mirndi; Pensalfini 1997: 100, 198, 249, 275)

a. *Ngangarra* *ngaja-nga-ju.*
wild.rice see-1SG-do
'I can see wild rice.'

b. *Ɉani* *madayi-rni* *ngaja-nya-ju?*
Q cloud.NOM-FOC see-2SG-do
'Can you see the cloud?'

c. *Wiwimi-darra-rni* *warlaku* *ngaja-ju.*
girl-PL-ERG dog.NOM see-do
'The girls see the dog.'

d. *Ngaja-nga-ju* *niyi-rnini* *nayurni.*
see-1SG-do 3SG.GEN-F woman.NOM
'I can see his wife.'

Differential case marking here is the consequence of a larger phenomenon that consists in pronouns patterning differently from nouns when it comes to argument marking. First, pronominal case-markers are often phonologically (and etymologically) distinct from the nominal ones. As Filimonova (2005) points out, pronouns belong to the most archaic parts of the lexicon and might be more stable and resistant to morphological and phonological changes than nouns and, hence, preserve the older case markers longer than nouns. On the other hand, pronouns often are subject to stronger syntactic constraints. This might also be part of the explanation for why pronouns – especially those referring to the speech act participants – represent the most notorious hierarchy offenders (see examples in Bickel et al. 2015).

Finally, inherent properties can only be viewed as triggers of DAM but not as its function or result since these properties (such as pronouns vs. nouns or animate vs. inanimate distinctions) are already coded lexically (Klein & de Swart 2011: 4–5).

The second group of inherent morphological argument properties which can trigger DAM are gender and inflectional classes. For example, in Icelandic, certain noun classes

distinguish between nominative and accusative while others do not (Thráinsson 2002: 153), compare the two examples:

(7) Icelandic (Indo-European; Thráinsson 2002: 153)
   a. *tím-i* 'time-NOM.SG' vs. *tím-a* 'time-ACC.SG' (masculine weak I)
   b. *nál* 'needle-NOM.SG' and 'needle-ACC.SG' (feminine strong I)

In other languages, different inflectional classes have different but always overt allomorphs of a marker, as e.g. in Kuuk Thaayorre (Pama-Nyungan, Australia), in which there are three ergative alomorphs depending on the conjugation class plus minor patterns: the ergative is marked either with the suffix *-(n)thurr*, or with a lexically specified suffixed vowel plus the segment /l/ (Gaby 2006: 158–163).

This type of differences in argument marking is only rarely discussed in the context of DAM, probably due to the fact that inflectional class assignments in many languages are only partly semantically conditioned (e.g. by the sex of their extensions) and are otherwise idiosyncratic and thus do not yield any obvious functional explanations. An exception in the case of typological studies is Bickel et al. (2015) and a few discussions of DAM in individual languages, e.g. Karatsareas (2011) on Cappadocian Greek. Another reason for the neglect of this type of DAM probably results from the fact that many studies on DAM, starting with Silverstein (1976), were interested in different alignment patterns resulting from DAM and not in DAM yielding identical alignment patterns, as is the case in languages which use different overt allomorphs of a marker, such as in Kuuk Thaayorre, where the overall alignment pattern does not change despite the difference in marking.

Sometimes differences between inflectional classes might be viewed as a diachronic effect of "morphologization" of a previously semantically constrained DAM. Russian seems to undergo this process whereby the animacy-driven DOM by the opposition of the former accusative case (zero) (*stol-ø* 'table-ACC/NOM') vs. genitive case (*čelovek-a* 'human-ACC/GEN') is now becoming just one heterogeneous accusative case with two allomorphs depending on the particular noun and, hence, on its inflectional class. The allomorphy can be argued for by applying various syntactic and substitution tests. For example, Corbett (1991: 165–167) treats animacy in Russian as a sub-gender.

2.1.3 Non-inherent, discourse-based argument properties

Apart from the inherent semantic and morphological lexical argument properties discussed in §2.1.1–§2.1.2 above, a range of further characteristics related to how referents are used in discourse are known to interact with DAM. On the one hand, these properties include such semantic dimensions as definiteness and specificity; on the other hand, they include other categories considered under the umbrella term of INFORMATION STRUCTURE.

Definiteness and specificity As the examples of the effect of definiteness and specificity on argument marking, in particular, on DOM, are abundant and easy to find, in

this section we only briefly introduce this type of DAM. Definiteness and specificity are notoriously difficult to define. A common proxy for definiteness is the semantic-pragmatic notion of identifiability. Thus, a definite argument is one for which the hearer can identify the referent (Lyons 1999: 2–5). In a similar way, Lambrecht (1994) defines identifiability as reflecting "a speaker's assessment of whether a discourse representation of a particular referent is already stored in the hearer's mind or not" (Lambrecht 1994: 76). In contrast to definiteness, which depends both on the speaker and the hearer, specificity only depends on the speaker; a nominal is specific whenever the speaker has a "particular referent in mind" (Lyons 1999: 35).[5] As the two phenomena of definiteness and specificity interact closely, they are frequently integrated into one hierarchy, as in (8) (see e.g. Comrie 1986: 94; Croft 2003: 132):

(8) definite > (indefinite) specific > (indefinite) non-specific

A recent study by Sinnemäki (2014) investigates the effect of definiteness and specificity on DOM and finds that in 71 of 178 languages with DOM in his sample (and in 43 out of 83 genealogical units) definiteness and/or specificity play a role, though the respective geographic distribution is somewhat biased: DOM of the languages in the Old World (Africa, Europe, and Asia) are more prone to be affected by this feature than the languages in Australia, New Guinea and the Americas.

Information structure The effects of another type of discourse-based properties of arguments on DAM viz. information structure properties have been noticed already in early studies of DAM (e.g. Laca 1987 on Spanish; Bossong 1985) and has become particularly prominent in some recent studies on DAM, including McGregor (1998; 2006) on differential agent marking, as well as Iemmolo (2010); von Heusinger & Kaiser (2007; 2011); Escandell-Vidal (2009) and Dalrymple & Nikolaeva (2011) on DOM. In what follows we provide an outline of some of the claims.

Dalrymple & Nikolaeva (2011: 14) claim that many seemingly unpredictable cases of variation in DOM can be accounted for by considering information structure, understood as that level of sentence grammar where propositions (i.e. conceptual states of affairs) are structured in accordance with the information-structure role of sentence elements. Specifically, *topicality* plays a critical role in many cases of DOM, such that the distribution of the differential marking depends on whether the object is a SECONDARY TOPIC or (part of) the focus constituent (Nikolaeva 2001; Dalrymple & Nikolaeva 2011). In this line of research, secondary topic is understood as "an element under the scope of the pragmatic presupposition such that the utterance is construed to be about the relation that holds between it and the primary topic" (Nikolaeva 2001: 2). Iemmolo (2010) argues against Dalrymple & Nikolaeva's (2011) suggestion and claims that DOM is primarily related to primary topics and special marking is reserved for pragmatically atypical objects, which are primary (or aboutness) topics.

[5] For an overview of the history of research on specificity and other approaches to specificity, see von Heusinger (2011).

Apart from topicality, focality also figures as a demarcation line for DAM, particularly in cases of a variant of differential agent marking called optional ergativity. For instance, in Central (Lhasa) Tibetan (Sino-Tibetan) unmarked agent arguments are associated with unmarked information distribution, whereas the use of the ergative marker yields a reading with emphasis (focus) on either the identity or the agency of the agent (cf. Tournadre 1991). While it is somewhat difficult to define and operationalize the notion of emphasis or focality, related notions of unexpectedness, surprise or unpredictability of the referent might be better terms in describing individual DAM systems. For instance, Schikowski (2013) uses the term *unexpectedness* in addition to various other inherent (animacy) and context-dependent (specificity) properties to explain DOM in Nepali. In Warrwa (Nyulnyulan, Western Australia), NPs are marked with the focal ergative marker *-nma*, as in (9b), when they are "unexpected, unpredictable, or surprising in terms of their identity and agentivity" (McGregor 2006: 399), otherwise they are marked with a different ergative exponent, viz. *-na*, as in in (9a). To account for the distribution of the two markers in continuous stretches of discourse, McGregor (1998: 516) postulates the Expected Actor Principle: "The episode protagonist is — once it has been established — the expected (and unmarked) Actor of each foregrounded narrative clause of the episode; any other Actor is unexpected".

(9) Warrwa (Nyulnyulan, Western Australia; McGregor 2006: 402)

a. *nyinka* *jurrb* *ø-ji-na-yina* *kinya* *wanyji* *kwiina*
this jump 3minNOM-say-PST-3minOBL this later big
iri *ka-na-ngka-ndi-ø* *ø-ji-na,* *kinya-**na***
woman 1minNOM-TR-FUT-get-3minACC 3minNOM-say-PST this-**ERG**
wuba,
small

'The little one jumped at her then, at the big woman, and tried to get her.'

b. *kinya* *kwiina-**nma*** *iri* *marlu* *laj* *ø-ji-na-ø*
this big-**fERG** woman not throw 3minNOM-say-PST-3minACC
kinya *wuba,* *laj,* *marlu* *laj* *ø-ji-na-ø,*
this little throw not throw 3minNOM-say-PST-3minACC

'But no, the big woman threw the little man away.'

To summarize, the information-structure roles that are typically coded by DAM are foci with S and A arguments and topics with P arguments. Rarely also the status of P arguments as focal or non-focal triggers DOM (e.g. in Yukaghir, isolate; Maslova 2003; 2008), while topicality-triggered differential A marking seems unattested. This asymmetry may be explained by the findings of Maslova (2003) and Dalrymple & Nikolaeva (2011), who show that in the languages they considered P is common both as focus and topic, while A's predominantly occur as topics. For instance, P's are 65% topics in Tundra Yukaghir and 60% topics in Ostyak while they are respectively 35% foci in Tundra Yukaghir and 40% foci in Ostyak (Maslova 2003: 182; Dalrymple & Nikolaeva 2011: 167).

In turn, of all nominal foci of Maslova's Yukaghir corpus 97% are P foci and less than 1% are A foci (Maslova 2003: 182; 2008: 796).

2.1.4 Argument-triggered DAM: a summary

The clean typology of argument effects on DAM presented above is an idealization: In many languages argument-triggered DAM systems are conditioned by an intricate combination of both inherent and non-inherent properties. For example, the DOM in Spanish is primarily conditioned by animacy (an inherent property) but inanimates allow for variation depending on factors such as definiteness and specificity. Moreover, while definites are always marked, indefinites again allow for variation of marking where topicality, semantic verb class, preverbal position may favor the marking (von Heusinger & Kaiser 2007; 2011). According to Escandell-Vidal (2009), pronominal objects in Balearic Catalan are always case-marked by accusative, i.e. an inherent part-of-speech characteristic of the argument is at work, whereas with non-pronominal objects case marking is partly determined by topicality. The DOM of Biblical Hebrew is conditioned by a highly complex set of factors from different domains of grammar, including alongside animacy and definiteness, modality (volitionals) and polarity (under negation) of the verb, preverbal position of the object NP, presence of the reflexive possessor, etc. (Bekins 2012: 173).

2.1.5 Properties of scenario and global vs. local DAM systems

In §2.1.1–§2.1.4 we discussed how various inherent and discourse-based properties of arguments affect argument marking. This type of DAM conditioned by argument-internal properties is sometimes referred to as LOCAL (Silverstein 1976: 178; Malchukov 2008: 213, *passim*). However, not only the properties of differentially marked arguments themselves might be relevant: In some languages, argument marking is sensitive to the properties of other arguments of the same clause, i.e. to the nature of the co-arguments. In other words, not only one argument on its own, but the whole configuration of who is acting on whom can shape DAM systems. This type of DAM is labeled GLOBAL by Silverstein (1976: 178), because the assignment of case-marking is regulated on the global level of the event involving all arguments. Following Bickel (1995; 2011) and Zúñiga (2006), such argument configurations will be referred to as *scenarios* in what follows. Within flagging the effects of scenarios are not common, but they are well known in the domain of indexing under the notion of HIERARCHICAL AGREEMENT (cf. Siewierska 2003; 2004: 51–56).

Effects of scenarios on case marking can be illustrated with object marking in Aguaruna. In this language, the object argument is marked in one of two ways. First, it can be in the unmarked nominative, such as the nominal argument *yawaã* 'dog.NOM' in (10a) and the pronominal arguments *nĩ* '3SNOM' in (10b) or *hutii* '1PNOM' in (10c):

(10) Aguaruna (Jivaroan, Peru; Overall 2007: 155, 443, 444)

a. *Yawaã* *ii-nau* *maa-tʃa-ma-ka-umɨ?*
dog.NOM 1PL-POSS kill.HIAF-NEG-REC.PST-INT-2SGPST
'Have you killed our dog?'

b. *Nĩ* *ɨɨma-ta.*
3SG.NOM carry.PFV-IMP
'You(sg.) carry him!'

c. *Hutii* *ainau-ti* *atumɨ* *wai-hatu-ina-humɨ-i.*
1PL.NOM PL-SAP 2PL.NOM see-1PL.OBJ-PL.IPFV-2PL-DECL
'You(pl.) see us.'

Second, objects can be marked with the accusative case suffix *-na*, such as *biika-na* 'beans-ACC' in (11a), *ii-na* '1PL-ACC' in (11b) or *ami-na* '2SG-ACC' in (11c):

(11) Aguaruna (Jivaroan, Peru; Overall 2007: 146, 326, 444)

a. *Ima* *biika-na-kɨ* *yu-a-ma-ha-i.*
INTENS bean-ACC-RESTR eat-HIAF-REC.PST-1SG-DECL
'I only ate beans.'

b. *Nĩ* *ii-na* *antu-hu-tama-ka-aha-tata-wa-i.*
3SG.NOM 1PL-ACC listen-APPL-1PL.OBJ-INTENS-PL-FUT-3-DECL
'He will listen to us.'

c. *Hutii* *a-ina-u-ti* *daka-sa-tata-hamɨ-i* *ami-na.*
1PL.NOM COP-PL.IPPFV-REL-SAP wait-ATT-FUT-1SG>2SG.OBJ-DECL 2SG-ACC
'We will wait for you.'

As (10c) and (11b) demonstrate, an object with identical referential properties (first person plural pronoun) can be either in the nominative or in the accusative case. Thus, the internal properties of arguments cannot be the trigger of DOM in Aguaruna. The information-structural properties are not relevant either. Instead, the distribution of the two types of object marking is determined by the configuration of the referential properties of both transitive arguments – the A and the P – and is summarized as follows:

> Object NPs are marked with the accusative suffix *-na*, with some exceptions, that are conditioned by the relative positions of subject and object on the following person hierarchy:
>
> 1sg > 2sg > 1pl/2pl > 3
>
> First person singular and third person subjects trigger accusative case marking on any object NP, but second person singular, second person plural, and first person plural only trigger marking on higher-ranked object NPs. (Overall 2007: 168–169)

Similar cases have been reported from other languages. Thus, Malchukov (2008: 213) states that differently from Hindi, where DOM is purely locally constrained, the related language Kashmiri has globally conditioned DOM: "P takes an object (ACC/DAT) case if A

is lower than P on the Animacy/Person Hierarchy" (Malchukov 2008: 213 relying on Wali & Koul 1997: 155). Thus, as Malchukov (2008) points out, the global vs. local distinction may be observed even with DAM systems that have the same origin. Not only inherent argument properties of more than one argument involved in a scenario can trigger DAM, as in the examples above, but also non-inherent discourse-related argument properties of the whole scenario are known to trigger DAM. The well-known examples include proximate vs. obviative case marking in the Algonquian languages (see, for instance, Dahlstrom 1986 on Plains Cree).

2.1.6 Properties dependent on event semantics

In some languages DAM is not directly triggered by the inherent or discourse-related properties of arguments or a constellation of several arguments, as discussed in §2.1.1–§2.1.5, but rather by the way these arguments are involved in an event. The relevant aspects include – among others – volitionality/control or agentivity and affectedness (for discussions, see Næss 2004; McGregor 2006; Fauconnier 2012: 4). DAM is used in this context to differentiate between various degrees of transitivity in several ways. While manipulating the degrees of agentivity/control/volitionality is typically done by means of differential agent (or subject) marking, various degrees of affectedness (pertaining to P arguments) and resultativity (pertaining to the verbal domain) may be expressed via DOM. This division of labor is, of course, expected, because such semantic entailments as volitionality/agentivity or affectedness are associated with the A and the P arguments, respectively. In what follows, we provide an overview of these two subtypes.

Tsova-Tush provides an example of differential S marking triggered by volitionality: according to Holisky (1987), when the argument is volitionally involved and/or in control of the event the S argument appears in the ergative, as in (12a), whereas when the involvement of the argument lacks volition or control, it appears in the nominative case, as in (12b):

(12) Tsova-Tush (Nakh-Daghestanian; Georgia; Holisky 1987: 105)

a. *(As)* *vuiž-n-as.*
1SERG fall-AOR-1SERG
'I fell. (It was my own fault that I fell down.)'

b. *(So)* *vož-en-sO.*
1SNOM fall-AOR-1SNOM
'I fell down, by accident.'

The difference between (12a) and (12b) may also be approached in slightly different terms. Discussing the data from Latvian and Lithuanian, illustrated in (13), Seržant (2013) suggests that some cases of DAM might be better explained by operating with the property of the *control over the pre-stage* of an event. This account is somewhat different from *volitionality* and *control*, because the subject referent does not have control over the very event of falling in (12) or getting cold in (13) below. At the same time, the more agentive

marking implies that the subject referent had the opportunity to prevent the situation from coming about, but failed to exercise control at the stage before the event took place. Thus, in Lithuanian, both (13a) and (13b) are grammatical in isolation, but given the context provided by the sentence with the doctor, only (13a) is allowed:

(13) Lithuanian (Baltic, Indo-European; Seržant 2013: 289)

Gydytojas	*ant*	*skaudančio*	*piršto*	*uždėjo*	*ledų,*	*ir*	*po*	*dešimties*
doctor	on	aching	finger	put	ice	and	after	ten
minučių								
minute								

a. *man* *piršt-as* *visai* *atšal-o*
I.DAT finger-NOM fully get.cold-3PST

b. **aš* *piršt-ą* *visai* *atšal-a-u*
I.NOM finger-ACC fully get.cold-PST-1SG

'The doctor put ice on [my] aching finger and after 10 minutes my finger got cold (lit. to me the finger got cold).' [Elicited]

In both examples (13a) and (13b), there is no direct control over the event itself on the part of the experiencer (to denote full control, the respective causative form of the verb 'to get cold' has to be used in Lithuanian).

The other subtype of DAM conditioned by event semantics, viz. affectedness and resultativity-related DAM, has often been discussed in relation to particular areas and families, most prominently with respect to the *total* vs. *partitive* alternation in the Finnic and some neighboring Indo-European languages. Languages of the eastern Circum-Baltic area (Dahl & Koptjevskaja-Tamm 2001) show a remarkable degree of productivity of this type of DAM (Seržant 2015):

(14) Lithuanian (Baltic, Indo-European; own knowledge)

a. *Jis* *iš-gėrė* *vanden-į.*
he TELIC-drink.3PST water-ACC.SG

'He drank (up) (the/some) water.'

b. *Jis* *iš-gėrė* *vanden-s.*
he TELIC-drink.3PST water-GEN.SG

'He drank (*the/some) water.'

The verb 'to drink' subcategorizes for an accusative object in Lithuanian, as in (14a), which is the default option in this language and may have both definite and indefinite (weak/'some') interpretation, since this language does not have grammaticalized articles and bare NPs are generally ambiguous regarding definiteness. However, the regular accusative marking may be overridden by the genitive case, as in (14b), where the exhaustive or definite reading is no longer available (Seržant 2014). The genitive option induces the indefinite-quantification reading in (14b) which, in turn, is related to non-specificity. Furthermore, the indefinite-quantity reading renders the verbal phrase

in (14b) atelic (non-resultative in the Finnish tradition, cf. Huumo 2010), the whole event of 'drinking water' becomes an activity predicate in contrast to the accomplishment interpretation in (14a). While this effect is found mostly with verbs taking the incremental theme (Dowty 1991) in Lithuanian (Seržant 2014), Finnic languages allow basically any accomplishment verb to acquire an activity interpretation by means of this type of DOM, cf. the verb 'to open' in (15) taking a non-incremental theme (cf. Kiparsky 1998; Huumo 2010):

(15) Finnish (Finnic, Finno-Ugric; Kiparsky 1998: 273)

a. *Hän* *avasi* *ikkunan.*
he open.3SG.PST window.ACC.SG
'He opened the window.'

b. *Hän* *avasi* *ikkunaa.*
he open.3SG.PST window.PART.SG
(i) 'He was opening the window.'
(ii) 'He opened the window (partly).'
(iii) 'He opened the window for a while.'
(iv) 'He opened the window again and again.'

Crucially, all four readings in (15b) imply a construal of an event in the past that is not committal as to the achievement of an inherent end point (the door is closed). In turn, only (15a) with accusative marking[6] of the object indicates that the inherent end point of the process of 'window opening' has been achieved. At the same time, in contrast to (14b), there is no weak quantification of the object referent – only the verbal action is quantified while the object is affected holistically. Note that there is no relation to viewpoint (or even progressive) aspect here, as is sometimes assumed in the literature (see the discussion in Seržant 2015). The non-resultativity (or only partial result) of the event in (15b), of course, entails that the object referent has not been affected to the extent that it has been in (15a).

2.1.7 Argument-triggered DAM: a summary

§2.1 considers only those cases of DAM where argument properties function as trigger, while the form of the predicate remains the same. This type has been in the focus of the study of DAM since its very beginning and arguably represents the consensus examples of DAM (cf. Bossong 1985; 1991). We follow this tradition and consider this type of DAM as a more central one. The following is thus our narrow definition of DAM:

[6]The Finnish accusative case is highly syncretic: it is homonymous with the genitive in the singular and with the nominative in the plural and has dedicated morphology only with personal pronouns (Karlsson 1999: 100–101). This is why it is sometimes (somewhat misleadingly) referred to as the genitive in the traditional linguistic literature on Finnish.

(16) Narrow definition of DAM:
Any kind of situation where an argument of a predicate bearing the same generalized semantic role may be coded in different ways, depending on factors other than the argument role itself and/or the clausal properties of the predicate such as polarity, TAM, embeddedness, etc.

2.2 Predicate-triggered DAM

We now turn to the discussion of the other major type of DAM, namely, PREDICATE-TRIGGERED DAM. The cases of DAM to be discussed in this section involve a broader understanding of the phenomenon according to the definition in (1) but not according to the definition in (16), which requires one and the same form of the predicate. In this type of DAM, different – though paradigmatically related – forms of the predicate require differential marking of its argument and neither inherent nor discourse-related properties of arguments play any role. Nevertheless, we think that such DAM systems are of no lesser interest than the systems discussed in §2.1 and may be related to them diachronically.

2.2.1 Clause-type-based differential marking

A very common, but not very frequently discussed kind of DAM is the one in which a particular kind of argument marking is found in one type of clause, whereas in some other type of clause the relevant argument is marked differently (cf. "main" versus "subordinate" clause split in Dixon 1994: 101 or "split according to construction" in McGregor 2009: 492). This type of DAM can be illustrated by the comparison of the main clause with different types of dependent clauses in Maithili. In the main clause, the sole argument of one-argument clauses and the more agent-like arguments of two-argument clauses are in the nominative, as in (17a) and (17b) respectively:

(17) Maithili (Indo-European; India, Nepal; Bickel & Yādava 2000: 346, 347)

a. *O* *hãs-l-aith.*
3hREM.NOM laugh-PST-3hNOM
'He(hREM) laughed.'

b. *O* *okra* *cāh-ait* *ch-aith.*
3hREM 3nhREM.DAT like-IPFV.PTCP AUX-3hNOM
'S/he(hREM) likes him/her(nh.REM).'

However, in various types of dependent clauses, for instance in converbial clauses, as in (18a), and infinitival clauses as in (18b), these arguments are in the dative case:

(18) Maithili (Indo-European; India, Nepal; Bickel & Yādava 2000: 353, 358)

a. *[Hamrā* *(*ham)* *ghar* *āib-kẽ]* *pitā-jī* *khuśī*
1DAT 1NOM home come-CVB father-HNOM happy
he-t-āh.
be(come)-FUT-3HNOM
'When I come home, father will be happy.'

b. *[Rām-kẽ* *(*Rām)* *sut-b-āk* *lel]* *ham* *yahĩ* *ṭhām-sã*
Ram-DAT Ram.NOM sleep-INF:OBL-GEN for 1NOM here place-ABL
uṭhī-ge-l-aũh.
rise-TEL-PST-1NOM
'I got up from this place in order for Ram to (be able to) sleep.'

Note that differential marking is never possible with one and the same form of the predicate. Instead, the two types of marking are in complementary distribution as determined by the matrix vs. embedded status of the predicate.

2.2.2 TAM-based differential marking

Tense, aspect, and mood of the clause present an often discussed trigger of DAM, in particular in case of differential agent marking, when discussing so-called split ergativity (cf. Comrie 1978; Dixon 1994: 97–101; de Hoop & Malchukov 2007). The distribution of case markers in Georgian illustrates this type of DAM. In the present, the agent argument appears in the nominative case, e.g. *deda* 'mother.NOM' in (19a). In the aorist, the agent argument appears in the narrative case (sometimes also called ergative), e.g. *deda-m* 'mother-NARR' in (19b):

(19) Georgian (Kartvelian; Georgia; Harris 1981: 42)

a. *Deda* *bans* *tavis* *švil-s.*
mother.NOM she.bathes.him.PRS self.GEN child-DAT
'The mother is bathing her child.'

b. *Deda-m* *dabana* *tavis-i* *švil-i.*
mother-NARR she.bathed.him.AOR self.GEN-NOM child-NOM
'The mother bathed her child.'

A number of functional explanations and predictions about possible systems of marking have been proposed with respect to the effects of tense and aspect properties of the clause (see Dixon 1994: 97–101; DeLancey 1981; 1982). For instance, Dixon (1994: 99) predicts that if a language shows differential agent marking conditioned by tense or aspect, the ergative marking pattern is always found either in the past tense or in the perfective aspect. Such functional explanations of alleged correlations of marking and TAM are sometimes presented as textbook knowledge (cf. Song 2001: 174). However, they are not unproblematic, as discussed in Creissels (2008) and Witzlack-Makarevich (2011:

143–144). One of the problems lies in the following: The languages frequently used to illustrate effects of the tense-aspect properties of the clause on DAM include a number of Indo-Aryan and Iranian languages (e.g. Dixon 1994: 100; de Hoop & Malchukov 2007). However, although tense-aspect values of the clause might superficially seem to condition a particular argument marking in these languages, the distribution of case markers is actually determined by certain morphological verb forms (for instance, a special participle or a converb) – and not by TAM as such – and this distribution has an etymological motivation (for examples, see Witzlack-Makarevich 2011: 144).

2.2.3 Polarity-based differential marking

Polarity of the clause is another predicate-related feature that has long been known to interact with argument marking (cf. Dixon 1994: 101). Its effects can be illustrated with the Finnish examples in (20). Whereas in affirmative clauses the P argument can appear either in the accusative or partitive case, as in (20a), in negative clauses only the partitive case marking of the P argument is grammatical, as in (20b):

(20) Finnish (Uralic; Finland; Sulkala & Karjalainen 1992: 115)

a. *Söin* *omena-n* / *omena-a.*
eat.1SIPFV apple-ACC / apple-PART
'I ate/was eating an apple.'

b. *En* *syönyt* *omena-a.*
NEG-1S eat-2PTCP apple-PART
'I didn't eat/was not eating an apple.'

2.2.4 Differential marking and marking of information structure with verbal morphology

While information-structure-driven DAM systems mostly represent cases of DAM in the narrow sense, as defined in (16), individual information-structural configurations may also require different forms of the predicate, e.g. in Somali (Saeed 1987). Similarly, in Arbor, the form of the predicate in (21a) is different from the one in (21b): the topical, nominative subject (21a) takes the predicate with the auxiliary *ʔíy* while the focal subject (21b) does not allow the auxiliary:

(21) Arbore (Cushitic, Ethiopia; Hayward 1984: 113)

a. *Farawé* *ʔí-y* *zaɦate*
horse.F.NOM PVS-3SG die.3SG.F
'(A) horse died.'

b. *Farawa* *zéɦe*
horse.F.PRED died.3SG.M
'(A) HORSE died.' (Capitals signify the narrow focus)

2.3 Summary of DAM triggers

Sections §2.1–§2.2 cover the entire range of DAM triggers. We identify two major types of DAM systems. On the one hand, we distinguish argument-triggered DAM systems with no direct dependency on the predicate form. Such systems can be triggered by various argument properties and event semantics and are in accordance with both our narrow definition in (16) and broad definition in (1). On the other hand, there are a whole range of DAM systems where the same argument role is marked differently in different subparadigms of the predicate. Table 2 summarizes this typology and provides references to the respective examples.

Table 2: DAM systems according to the trigger

	DAM trigger type		DAM trigger	Examples
same predicate form	properties of the argument (local DAM)	inherent properties	animacy, person, discreteness, part of speech, inflection class	Jingulu (5), (6)
		non-inherent properties	definiteness, specificity, topicality, focality	Warrwa (9)
	properties of the whole scenario (global DAM)	inherent properties	animacy, person, discreteness, part of speech, inflection class	Aguaruna (10), (11)
		non-inherent properties	definiteness, specificity, topicality, focality	3PROX > 3OBV (not in the text)
	event semantics		affectedness, control over the event	Tsova-Tush (12)
different predicate forms			TAM, polarity, clause type, etc.	Maithili (17), (18); Georgian (19); Finnish (20)

2.4 The scope of DAM: restricted and unrestricted DAM systems

Whereas in some languages DAM seems to apply throughout the whole language system, in many languages its range is restricted in various ways, e.g. to particular predicates or individual clause types or to particular inflectional classes. Thus, one can distinguish between restricted DAM systems (to be illustrated in this section) and apparently unrestricted systems (the examples given in §2.1–§2.2, though admittedly we are not always certain whether DAM indeed applies without any restrictions in these languages).

In Latvian, the nominative-accusative split in patient marking is restricted to a very limited domain, namely, to the debitive construction denoting necessity. The construction is marked by an auxiliary (optional in the present tense) and the prefix *jā-* on the verb, as in (22):

(22) Latvian (Baltic, Indo-European; personal knowledge)

a.	*Tev*	*(ir)*	*jā-ciena*	*mani/*es.*
	you.DAT	(AUX.PRS.3)	DEB-respect	I.ACC/*I.NOM
b.	*Tev*	*(ir)*	*jā-ciena*	*viņš/māte/valsts.*
	you.DAT	(AUX.PRS.3)	DEB-respect	he.NOM/mother.NOM/state.NOM

a. 'You have to be respectful towards me (ACC).'
b. 'You have to be respectful towards him (NOM) / [your] mother (NOM) / [the] country (NOM).' [Constructed example]

In this construction, the patient argument realized with speech-act-participant personal and reflexive pronouns is obligatorily marked with the accusative case, while other NP types are marked with the nominative case in the standard language. Elsewhere, Latvian does not show any DAM. The debitive construction in (22) is thus the only domain in Latvian within which one finds DAM.

Another type of a cross-linguistically recurrent domain for DAM is subordinate clauses. For instance, in Turkish, the domain for the differential subject marking is the nominalized subordinate clause in which the subject must either bear the nominative case – which is a morphological zero – or be marked overtly by the genitive case. In the former case the subject has a generic, non-specific interpretation, as in (23b), in the latter case, it has a specific indefinite interpretation, as in (23a) (Comrie 1986: 95; Kornfilt 2008: 83–84):

(23) Turkish (Turkic; Kornfilt 2008: 83–84)

a.	*[Köy-ü*	*bir*	*haydut-un*	*bas-tığ-ın]-ı*	*duy-du-m.*
	village-ACC	a	robber-GEN	raid-FN-3SG-ACC	hear-PST-1SG

'I heard that a (certain) robber raided the village.' (specific)

b.	*[Köy-ü*	*haydut*	*bas-tığ-ın]-ı*	*duy-du-m.*	
	village-ACC	robber	raid-FN-3SG-ACC	hear-PST-1SG	

'I heard that robbers raided the village.' (non-specific, generic)

Crucially, the nominative vs. genitive differential subject marking is found only in the subordinate clauses, while the main clauses in Turkish do not allow this type of DAM. Note that the distinction between the subordinated vs. main clause is not the trigger for the DAM here, in contrast to the cases discussed in §2.1.1. In this case, the DAM is triggered by the properties of the respective argument – specific vs. non-specific, as discussed in §2.1.3.The only difference to the other similar examples is that the distribution of DAM is restricted to subordinate clauses.

In addition to syntactically restricted domains, as in (22) and (23), DAM systems may also be restricted lexically. Thus, the range of DAM may be limited by a particular class of verbs – motivated semantically or otherwise. For instance, a small number of one-argument predicates in Hindi/Urdu allow for differential marking of its sole argument conditioned by volitionality, e.g. *bhõk-* 'bark', *khãs-* 'cough', *chĩk-* 'sneeze', *hãs-* 'laugh', etc. (see Davison 1999 for an exhaustive list). This is illustrated in (24): whereas in (24a) the sole argument is in the unmarked nominative case and the event of coughing is understood as being unintentional, in (24b) the sole argument is in the ergative case to reflect the intentional nature of the coughing event:

(24) Hindi-Urdu (Indo-Aryan; India, Pakistan; Tuite et al. 1985: 264)

a. *Ram* *khãs-a.*
Ram.NOM cough-PRF.M
'Ram coughed.'

b. *Ram=ne* *khãs-a.*
Ram=ERG cough-PRF.M
'Ram coughed (purposefully).'

We discussed similar cases in §2.1.6 under properties dependent on event semantics. The major difference between these examples and the examples in §2.1.6 lies in the fact that the intentionality-based DAM in Hindi/Urdu does not apply to every sole argument, but, its domain is limited to a very small set of verbs.

To summarize, the range of DAM can be restricted in various ways by the properties of the predicate: by various verbal grammatical categories (such as tense, aspect or mood), by the syntactic position (e.g. embedded vs. matrix) or by lexical restrictions (particular verb classes only). The categories which restrict the range of DAM are often similar to those discussed in §2.2, but their effect on DAM is different: whereas in restricted systems discussed in this section we find DAM triggered mostly by the familiar inherent or discourse-based properties of arguments but *limited* to particular contexts, e.g. to particular types of clauses, the predicate-based DAM systems in §2.2 are directly triggered by a particular form of the predicate. Note that the restricted argument-triggered DAM systems still adhere to the narrow definition of DAM in (16) alongside the unrestricted argument-triggered ones. Another way to put it is as follows: if one knows that the DAM system is restricted, one can identify the domain where one finds alternating argument marking. However, to predict what kind of marking an argument takes, one still has to consider the triggers of DAM. The cross-tabulation of the scope variable of DAM system

and the familiar trigger variable yields the four subtypes of DAM systems summarized in Table 3:

Table 3: Typological variation of DAM systems

		Trigger	
		argument properties	predicate properties
Scope	unrestricted	unrestricted argument-triggered DAM	unrestricted predicate-/clause-triggered DAM
	restricted	restricted argument-triggered DAM	restricted predicate-/clause-triggered DAM

3 Morphological and syntactic properties of DAM

In this section we provide a survey of the variation in DAM related to its morphological and syntactic properties. We first discuss the morphological dichotomy between symmetric and asymmetric DAM systems (§3.1) and then proceed to the locus of marking and give a short overview of the research on differential flagging in contrast to differential indexing (§3.2). In §3.3 we briefly consider the syntactic properties of DAM. Finally, §3.4 touches upon the issues of obligatoriness of DAM.

3.1 Symmetric vs. asymmetric DAM

From the beginning of the research on DOM it has generally been assumed that DOM yields a binary opposition based on markedness: certain NP types are marked in terms of both prominence (animacy, definiteness, etc.) and morphological encoding while others are unmarked, i.e., are non-prominent and morphologically unmarked (*inter alia*, Bossong 1985; 1991; but also Aissen 2003). In other words, semantic markedness is mirrored by the morphological markedness or ASYMMETRIC encoding: X vs. zero. Many DOM systems are of this type, e.g. the DOM of Spanish or Persian. For example, Spanish contrasts animate specific objects to all others by marking the former but not the latter with the preposition *a*.

Recently, however, also SYMMETRIC DAM systems – i.e. systems where both alternatives receive overt morphological marking – have become the focus of attention in several studies (e.g. de Hoop & Malchukov 2008; Iemmolo 2013b). Some researchers have ar-

gued that symmetric and asymmetric DAM systems are regulated by different principles (Dalrymple & Nikolaeva 2011: 19; Abraham & Leiss 2012; Iemmolo 2013b). For instance, Iemmolo's (2013b) study shows that symmetric DOM systems respond to parameters related to the overall semantics of the event, e.g. polarity and quantification, affectedness or boundedness (aspectuality), whereas asymmetric systems reflect various participant properties, most prominently its information-structure role, animacy, referentiality, etc. (similarly Abraham & Leiss 2012: 320).

While functional correlations between prominence and morphological realization of DOM like those put forward by Iemmolo (2013b) do indeed find some cross-linguistic support, there are a number of counterexamples. For instance, the DOM found in Kolyma Yukaghir (Yukaghir, isolate) is symmetric: it requires accusative marking *-gele*/*-kele* for definite nouns and the instrumental case ending *-le* for indefinite nouns with third person A arguments (Maslova 2003: 93). Functionally, this type of DOM is very much reminiscent of the asymmetric DOM in Biblical (and modern) Hebrew. The latter is also conditioned by definiteness but, in contrast to Kolyma Yukaghir, is morphologically asymmetric as it requires the preposition *'et* with definite NPs and disallows it with indefinite NPs. Counterexamples are found with differential agent marking as well: for instance, Warrwa (Kimberley, Western Australia; McGregor 2006) has alternations between two different ergatives and is thus an instance of symmetric DAM by definition. However, in contrast to the claims e.g. in Iemmolo (2013b), this system is solely conditioned by the properties of the A argument itself (such as expectedness) and is not related to verbal semantics.

The aforementioned claim about the correlations of symmetrically realized DAMs with event interpretation, on the one hand, and asymmetrically realized DAMs correlating with participant interpretation, on the other, is too strong also for the following reason. The opposition between an overt vs. zero marker is only possible if there is no general ban on zeros in the particular domain of a language. For example, the opposition between accusative and nominative object marking in the Latvian debitive construction is functionally dependent – somewhat similarly to the Spanish DOM – on factors such as animacy and accessibility but the morphological realization here is the one between one overt marking (nominative, e.g. *-s*) vs. another overt marking (accusative, e.g. *-u*) simply because Latvian disallows zero markers for any case. For this Latvian system it is difficult to determine which option is morphologically (more) marked and which one is unmarked or less marked[7] and, crucially, whether more prominent participants (animates and more accessible referents) or the less prominent participants (inanimates and less accessible) are more coded.

While Latvian disallows zeros in all its declensional paradigms, other languages preclude zeros only in a particular (sub)paradigm: typically, the plural and pronominal paradigms in fusional declensions do not contain zeros. For example, in Russian, all DOM types are symmetric in the plural (but not in the singular) because there is a dedicated plural marker *-y*/*-i* for the nominative. Even the textbook example of Spanish does not

[7]But see, for instance, Keine & Müller (2008) for using not only the length of markers, but also their phonological properties, such as sonority, to determine phonological markedness.

fully fit the pattern X vs. zero when it comes to pronouns, cf. *a mí* 'ACC 1SG.ACC' vs. *me* '1SG.ACC'. Pronouns are often morphologically (suppletive) portmanteau words combining both the referential and case-marking morphemes. It is therefore often difficult to distinguish between symmetric vs. asymmetric DAM in these cases.

Rarely are there DOM systems which are asymmetric but where their asymmetry is reverse to what is expected because it is the morphologically marked member that is less prominent while the zero-marked one is more prominent. For example, the DOM based on the opposition between the partitive use of the genitive in Russian is a case in point. Here, the less prominent NP is always marked by the partitive genitive with dedicated morphological coding. In turn, the accusative case has no dedicated marking for a large number of inanimate (and some animate) NPs:

(25) Russian (Slavic, Indo-European; personal knowledge)

a. *Ja* *vypil* *konjak-ø.*
I.NOM drink.SG.PST cognac-SG.ACC
'I drank up the cognac.'

b. *Ja* *vypil* *konjak-a.*
I.NOM drink.SG.PST cognac-SG.GEN
'I drank some/*the cognac.'

The DOM found in (25a)–(25b) is asymmetric by definition. However, it is the semantically more prominent NP in (25a) that is unmarked as opposed to (25b).

To conclude, there are three ways of how prominence correlates with morphological markedness: (i) the prominent meaning is coded with more material than the non-prominent (e.g. the Spanish DOM), (ii) both the prominent and the non-prominent meanings are similarly coded (e.g. the Latvian debitive's DOM, Seržant & Taperte 2016), and (iii) the less prominent meaning is coded with more material than the more prominent (cf. 25 above). However, these types are not distributed equally cross-linguistically. Type (iii) is rarer than type (i). According to Sinnemäki (2014: 304), in the asymmetric DOM systems conditioned by topicality, it is the topical object that receives overt marking in all cases. In turn, when it comes to the symmetric type (ii), the correlations mentioned in Iemmolo (2013b) do not seem to represent a strong bias.

3.2 Differential flagging vs. differential indexing

Differential marking of arguments may be realized as head- or as dependent-marking – a difference that is largely constrained by the strategy the language uses to mark core arguments (i.e. indexing only, indexing and flagging or flagging only, Nichols 1986). Thus, among others, Dalrymple & Nikolaeva (2011) treat both as different aspects of the same phenomenon. At the same time, indexing and flagging are often claimed to have different functions not only synchronically but also at earlier historical stages (cf. Croft 1988: 167–168). While agreement or indexing is "a topic related phenomenon" as Givón (1976: 185) puts it (cf. also Kibrik 2011), flagging is not related to topichood or information-structure

in general, but rather to semantic argument roles and various dependency relations between a head and its dependent (cf. Iemmolo 2013a). Semantic roles and various dependency relations constitute the most frequent function of cases (cf. Blake 1994). At the same time, dependent marking can and does sometimes end up being employed for pragmatic rather than semantic purposes, as with the optional ergative marking illustrated in §2.1.3, where one of the ergative markers is associated with continuous topichood, as in (9a), while the other occurs with a certain degree of contrast, as in (9b).

Iemmolo (forthcoming) is an important attempt to delineate the distinction between differential object marking (DOM) or rather differential case marking, on the one hand, and differential object indexing (DOI), on the other. Iemmolo claims that the main distinction between the two is that DOI is related to topic continuity whereas DOM is employed to encode topic discontinuity. This also naturally follows from the fact that independent argument expressions (such as full NPs) are more related to topic discontinuities while verb affixes or bound pronouns are typically employed for expected referents such as continuous topics. It might thus be the case that the effects found in Iemmolo (forthcoming) are due to the distinction between different referential expressions, namely, independent versus bound expressions.

3.3 Syntactic properties of DAM

In the previous sections we have discussed morphological properties of DAM systems. Yet, the syntactic or behavioral properties (to use the term from Keenan 1976) of arguments in general may be heavily constrained by the morphological marking involved – an issue that has been notoriously neglected in the discussion of various DAM systems, as emphasized by Dalrymple & Nikolaeva (2011: 17, 140–141). It is tacitly assumed – and perhaps correctly for many but not all instances of DAM – that concomitant to a shift in marking of an argument, the syntactic properties of that argument do not change. However, there are many instances in which this is not the case and differential function leads not only to differential marking but also to different syntactic properties, as Dalrymple & Nikolaeva (2011: 140–168) extensively argue for languages such as Ostyak, Mongolian, Chatino and Hindi. For example, marked and unmarked objects in the DOI of Ostyak exhibit asymmetries in syntactic behavioral properties related to reference control in nominalized dependent clauses, ability to topicalize the possessor, etc. where the marked object is more of a direct object than the unmarked (Dalrymple & Nikolaeva 2011: 17). To account for the differences in the syntactic properties Dalrymple & Nikolaeva (2011: 141) suggest two cross-linguistic categories (within the LFG framework, drawing on Butt & King 1996, but see already Bossong 1991: 158): the grammatically marked, topical object OBJ and the non-topical, unmarked object OBJ_θ – a distinction that was originally introduced for objects of ditransitive verbs but was extended to monotransitive objects in Butt & King (1996).[8] Consider Table 4 from Dalrymple & Nikolaeva (2011: 141):
While OBJ represents the morphologically marked, discursively salient, topical objects,

[8]Note that Butt & King (1996) use the labels OBJ and OBJ_θ in exactly reverse functions than adopted by Dalrymple & Nikolaeva (2011).

Table 4: Marked and unmarked patient/theme objects (according to Dalrymple & Nikolaeva 2011: 141)

	OBJ	OBJ_θ
Marking	Yes	No
Information-structure role	Topic	Non-topic
Properties of core grammatical functions	Yes	No

the extreme of the opposite case of OBJ_θ would be incorporated objects, e.g. in some Eastern Cushitic languages (as discussed in Sasse 1984). For example, the accusative-marked objects but not the unmarked objects in Khalkha Mongolian (all definite NPs and some indefinite NPs) may be combined with the topical particle *ni* (whose distribution is syntactically governed) and be fronted (Dalrymple & Nikolaeva 2011: 153–154). Another example of differences in the syntactic properties is the Russian partitive-accusative DOM: while (26a) can easily be passivized, as in (26c), there is no passive counterpart in Standard Russian like (26d) that would match the meaning in (26b) inducing weak quantification of the object referent:

(26) Russian (Slavic, Indo-European; personal knowledge)

a. *Ja* *vy-pil* *sok.*
I.NOM drink.PST.M.SG juice.ACC.SG/NOM.SG
'I drank (up) the/some juice.' [Elicited]

b. *Ja* *vypil* *sok-a.*
I.NOM drink.PST.M.SG juice.GEN.SG
'I drank some juice.' [Elicited]

c. *Sok* *byl* *vypit.*
juice.NOM.SG.M AUX.PST.SG.M drink.PST.PASS.M.SG
'The juice was drunk.' [Elicited]

d. **Sok-a* *byl-o* *vypito.*
juice-GEN.SG.M AUX.PST.SG.N drink.PST.PASS.N.SG
[Intended meaning] 'Some juice was drunk.'

Ideally, according to the definition of DAM in (1) and (16), there should be no change in the syntactic behavior for an alternation to qualify as DAM. In case of a former dislocation, there should be no resumptive pronoun and, more generally, no other factors that would rather suggest extra-clausal status of the marked option.

3.4 Obligatory vs. optional DAM

de Hoop & Malchukov (2007) distinguish between fluid DAM and split DAM. The former refers to constellations in which an argument in one and the same proposition may

take both marking options depending on pragmatics and context. In turn, the latter is found when the differential marking is conditioned by inherent properties of an NP. Indeed, systems of DAM vary in terms of the degree of obligatoriness of a particular marking. Whereas in some DAM systems a particular marking applies in predictable and consistent fashion with certain types of NPs or in certain grammatical contexts, other systems seem to be more flexible (cf. McGregor's (2009) "split" case marking on the one hand, and "optional" case marking on the other). Thus, de Swart (2006) reports that definiteness may but need not be marked on objects in Hindi. It is only if the speaker commits himself to the definite interpretation that it is marked by case. Obligatoriness also implies that the alternative option is equally committal. To summarize, the principles conditioning DAM may be fully (i) obligatory (splits), (ii) obligatory-optional (split-fluid) (similar to Type 3/mixed type in Dalrymple & Nikolaeva's 2011 typology) and fully (iii) optional (fluid). Note that – in contrast to de Hoop & Malchukov (2007) and Klein & de Swart (2011) – we do not attribute particular semantic domains such as definiteness or specificity to the fluid type since there are DAM systems in which the distinction between definite and everything else or specific and everything else is rigid. For example, the definite NPs must be marked in Modern Hebrew in terms of a fairly rigid rule, thus yielding a split. The three types are summarized and illustrated below.

i *Splits* (obligatory complementary distribution) are common both with argument-triggered DAM, e.g. in the case of differential marking of nouns vs. pronouns, as in Jingulu in (5), and with predicate-triggered DAM, such as cases of split ergativity where the form of the predicate determines the marking of the argument, as in the Georgian examples in (19).

ii *Fluid* DAM works solely according to probabilistic rules, as e.g. the DSM restricted to negated predicates in Russian (see e.g. Timberlake 2004: 300–311 and the references therein).

iii Finally, *split-fluid* is a DAM system which has a combination of both splitting and fluid contexts, i.e. contexts that obligatorily require a particular marking (splits) and contexts that allow for some optionality. In most of the cases, optionality is subordinate to splits. For example, the DOM in Persian has rigid rule for definite NPs which must be marked, hence, a definite-indefinite split. In turn, the realm of indefinites is conditioned by various degrees of individuation (Lazard 1992: 183–185), not exclusively by topicality (pace Dalrymple & Nikolaeva 2011: 107–113). Finally, Kannada (Dravidian) has an animate vs. inanimate split where animates must be marked while inanimates are either marked or unmarked depending on various additional factors (Lidz 2006).

While splits are defined in terms of rigid and simple rules, optionality is highly complex and involves a number of often competing motivations. For example, in an argument-triggered DAM such as Spanish DOM, different lexical verbs may considerably alter the preferences for DOM (von Heusinger & Kaiser 2007). In the argument-triggered DOM of the Latvian debitive, the preferences for ACC vs. NOM marking of non-pronominal NPs

are also dependent on the lexical verb but not exclusively so and other factors such as the linear position (preverbal vs. postverbal) also play an important role. In the argument-driven DOM of Khalkha Mongolian, definite NPs (nouns, pronouns, proper names) are obligatorily marked, while weak indefinite (semantically incorporated) bare NPs are obligatorily unmarked (yielding a split). In turn, the indefinite NPs modified by the indefinite article *neg* are optional and tendentiously constrained by factors such as discourse persistence (whether or not the referent will be talked about in the following discourse), animacy, affectedness, incremental relation with the verb, specificity, etc. (Guntsetseg 2008: 67).

While splits typically revolve around inherent properties, this need not always be the case. Non-inherent properties may also – albeit more rarely – yield splits. For example, Modern Hebrew requires all definite objects to carry the DOM marker *'et* (Danon 2001), thus splitting all NP types of Hebrew into definite and indefinite ones.[9]

3.5 Summary

So far we have outlined various DAM systems and their properties. In Section §1, we gave a broad definition of DAM (1) which we recapitulate here for convenience: the term DAM broadly refers to any kind of the situation where an argument of a predicate bearing the same generalized semantic role may be coded in different ways, depending on factors other than the argument role itself, and which is not licensed by diathesis alternations (similarly to the way it is defined in Woolford 2008, Iemmolo & Schikowski 2014). This definition encompasses both argument-triggered and predicate-triggered DAM systems.

However, it has to be acknowledged that the consensus examples are all argument-triggered DAM, e.g. the DOM in Spanish, for which we have provided the narrower definition. In turn, predicate-triggered DAM systems are quite different in many respects, as is summarized in Table 3. Here, DAM alternations are complementarily licensed by two distinct forms of the predicate (e.g. past vs. present) and/or by two distinct syntactic positions of the predicate (embedded vs. main) – both situations do not immediately concern NP-internal properties, scenario or event semantics. The latter are crucial for the argument-triggered DAM. To capture these differences, we have provided also the narrow definition of DAM in (16) above, recapitulated here for convenience:

(16) Narrow definition of DAM:
Any kind of situation where an argument of a predicate bearing the same generalized semantic role may be coded in different ways, depending on factors other than the argument role itself and/or the clausal properties of the predicate such as polarity, TAM, embeddedness, etc.

Having said this, different predicate forms expressing, for example, different aspectual properties (such as perfective vs. imperfective) are indeed interrelated with such factors

[9] Klein & de Swart (2011: 5) assume that fluid vs. split is "always" correlated with function ("result") vs. triggers.

as event semantics, but, crucially, only indirectly (e.g. in terms of Hopper & Thompson 1980). In diachronic terms, predicate-triggered DAM systems may develop into argument-triggered ones, which suggests that these two types are not totally distinct. To capture potential diachronic and synchronic relations, we have introduced the distinction between the broad definition of DAM and the narrow definition.

4 Functional explanations for DAM

In this section we will briefly survey a few common explanations of DAM. These explanations are directly linked to the understanding of what functions morphological marking generally serves, in particular, to the functions of case marking. Note, however, that these explanations primarily concern the NP-triggered and not for the predicate-triggered DAM type, i.e. only the DAM systems that satisfy the narrow definition in (16). The two most frequently mentioned functions of case marking here are the distinguishing (also called discriminatory or disambiguating) function and the identifying (also called highlighting, indexing or coding) function (cf. Dixon 1979; 1994; Mallinson & Blake 1981; Comrie 1989; Song 2001; de Hoop & Malchukov 2008; Siewierska & Bakker 2009; Dalrymple & Nikolaeva 2011: 3–8). The distinguishing function of case marking serves the purposes of disambiguation of the argument roles in clauses with two or more arguments. Case marking fulfills the identifying function in that it codes the semantic relationship that the argument bears to its verb. In what follows, these two functions are presented in further details and linked to particular configurations of argument marking.

In the identifying approach to the function of DAM, the presence of a marker on an argument is independent of the relationship between the arguments of a clause. Instead, a particular marker is viewed as a device to highlight more fine-grained distinctions of the same semantic role (volitional vs. non-volitional agents, affected vs. non-affected patients, controlling vs. non-controlling experiencers, etc.) or various properties of the argument itself (e.g. in Hopper & Thompson 1980; Dalrymple & Nikolaeva 2011). For instance, for Næss 2004: 1206, the relevant property triggering overt object marking is affectedness of the argument. Affectedness is, in turn, defined by employing two other concepts: the concept of part-whole relations and of salience. In terms of part-whole relations, an entity of which only a subpart is affected is generally less affected than one affected as a whole. The concept of salience relies on the assumption that some types of effects are more easily perceptible and of greater interest to humans than others (Næss 2004: 1202).

Recently, Sinnemäki (2014) has claimed that neither animacy nor definiteness are the universal factors conditioning DOM. Thus, Sinnemäki (2014: 295) argues that "there is a crosslinguistic dispreference for object case marking to be driven by animacy." His study shows that only 47 (= 39%) of genealogical units in his sample had an animacy-effect as opposed to 61% of genealogical units in which animacy was not the conditioning factor. Analogically, there were 34% (43 genealogical units) affected by definiteness (with an areal bias for the Old World) as opposed to 66% (83 genealogical units) which were not. Both factors are found to condition DOM in 58% (70 genealogical units) as opposed to

42% (51 genealogical units) which are conditioned by some other factors (Sinnemäki 2014: 296). However, problematic in Sinnemäki's (2014) account is that he did not only consider argument-triggered DOM systems for which the predictions mentioned above were designed but also predicate-triggered DOM systems such as those conditioned by split ergativity. Moreover, crucially, the DOM systems in 42% of genealogical units are not conditioned by one single factor but instead by a variety of factors, including tense/aspect, singular vs. plural, gender, etc. (cf. the ones listed in Sinnemäki 2014: 284–285). Notably, the strengths of each of these are not even remotely similar to either animacy (39%) or definiteness (34%), let alone animacy and definiteness together.

In turn, Dalrymple & Nikolaeva (2011) claim that DOM is primarily motivated by the information structure. According to them, DOM is used to highlight "similarities between subjects and topical objects" (Dalrymple & Nikolaeva 2011: 3–8) and to delineate topical objects and (generally topical) subjects as primary arguments from other, less canonical arguments. Dalrymple & Nikolaeva (2011) make an important claim based on corpus frequencies that objects are as likely to be topics as foci or parts of foci and that focus, therefore, is not the most typical information-structural role of an object, as in previous accounts.

The distinguishing function of case marking always operates together with the two more general principles responsible for coding asymmetries: economy and markedness (cf. de Swart 2006; 2007; de Hoop & Malchukov 2008). In particular, the principle of economy requires arguments to be unmarked to reduce the speaker's efforts. In turn, the distinguishing function forces the speaker to mark at least one of the arguments to achieve their distinguishability from each other, although the choice of the argument to be marked is not arbitrary and is predicted by markedness: the most marked combination of the filler and the syntactic slot of the verb's arguments will have a longer morphological marking. Markedness here is based on the intuition of what represents the most natural monotransitive clause (e.g. the most frequent clause type in actual discourse) in terms of its arguments. Comrie (1989) summarizes this intuition as follows:

> "[…], the most natural kind of transitive construction is one where the A is high in animacy and definiteness, and the P is lower in animacy and definiteness; and any deviation from this pattern leads to a more marked construction." (Comrie 1989: 128)

This account thus predicts that animate and/or definite objects, which represent a less natural (i.e. more marked) combination of role and semantic features, should be marked formally, e.g. with an overt case marker (or by some other means, e.g. a passive or inverse construction), while inanimate and/or indefinite objects, which manifest a natural combination, need not be marked overtly (cf. Comrie 1989: 128; Bossong 1991: 162–163; Malchukov 2008).

There are several operational definitions for functional markedness. Bickel et al. (2015: 10), for example, adopt the interpretation of markedness in the context of DSM following Silverstein's (1976) lead. They speak of markedness relations and operationalize them in terms of the alignment of argument roles: the sets that also include the S argument role

(i.e. {S, P}, {S, A} and {S, A, P}) are all less specific and thus less marked in comparison to the sets {A} and {P}. They test the often claimed effects of various referential hierarchies, such as the ones in Table 1. High-ranking A and low-ranking P arguments are then expected to be associated with the more general sets, i.e. {S, A, P} or {S, A} for high-ranking A arguments, and {S, A, P} or {S, P} for low-ranking P arguments.

A more radical view is Haspelmath (2006) who discards markedness altogether, replacing it with frequency-based expectations. This approach can be straightforwardly related to DAM because it provides a falsifiable account of asymmetries mentioned above. For example, animate direct objects are much less frequent and, hence, less expected to occur, while objects are typically inanimate. For example, Dahl & Fraurud (1996: 51) and Dahl (2000) demonstrate that the proportion of animate vs. inanimate direct objects in corpus of written Swedish is 87% inanimate while in spoken Swedish 89% inanimate vs. 13% and 11% animate NPs, respectively (analogical proportions are found in English and Portuguese, cf. Everett 2009: 6, 12). This means that animate objects are less expected to occur. This is claimed to be the reason why they require more marking than inanimate objects which are expected anyway. In turn, the A position seems to be less biased. There are 56% human A's vs. 44% non-humans in the same corpus (Dahl & Fraurud 1996: 51).

Systems of case marking fulfilling a purely distinguishing function are infrequent synchronically (de Hoop & Narasimhan 2005; de Hoop & Malchukov 2008: 569). These are the systems of the kind described in §2.1.5 under scenario; apart from Aguaruna, other known examples are Awtuw (Feldman 1986) or Hua (Haiman 1979). Contrary to what one would expect from the perspective of the distinguishing function, in the majority of DAM systems a particular argument marking applies mechanically across the board and is not restricted to marking arguments only in contexts of actual ambiguity (cf. Malchukov 2008: 213). However, even in these cases, the distinguishing function does seem to be operative in the background because DAM rarely leads to syntactic ambiguities here.

More generally, DAM provides a means for speakers to differentiate between various additional factors that are themselves secondary to the event and do not considerably alter the state of affairs. The exact semantic and/or pragmatic component that a particular DAM system contributes is sometimes difficult to discern precisely because differential marking does not significantly change the interpretation of the event. In turn, the versatility of DAM systems is smoothened by the simple, mostly binary opposition between two case-marking strategies which may be either complementarily distributed or one marking may be the semantic default that may be used in all contexts.

5 Conclusions

Differential marking is a pervasive phenomenon cross-linguistically. Thus, Sinnemäki (2014: 297) shows that, independently of genealogical and areal factors, the asymmetric DOM ("restricted marking" in Sinnemäki 2014) is found in the overwhelming majority of languages that employ flagging of objects: 74% of all genealogical units in his large-scale study on DOM involving 744 languages attest splits in the object marking where only a subset of objects is overtly marked.

Moreover, this phenomenon is highly versatile. We have suggested that the two main types of DAM systems are the ARGUMENT-TRIGGERED DAM and the PREDICATE-TRIGGERED DAM with various subtypes: while the former is primarily sensitive to the interpretation of the respective participant (its semantic and pragmatic properties), the latter responds to the properties of the event: e.g. whether the event is seen as perfective or imperfective, whether it takes place in the past or in the present, whether it is referential or modal, construed as independent (and hence coded by the main predicate) or as in some way dependent on another event (and hence coded by an embedded predication), etc. It is only the argument-triggered type that falls under the NARROW DEFINITION of DAM (in (16) above) and has been at heart of research on DAM.

Orthogonally to this distinction we made the distinction between RESTRICTED VS. UNRESTRICTED DAM systems. The former ones are found if the DAM system does not apply across the board but is limited to specific contexts such as particular constructions or particular verbs; the latter, in turn, have no such restrictions. Crucially, most of the functional explanations of DAM revolved around the argument-triggered DAM systems and are not applicable to the predicate-driven type.

Furthermore, DAM systems may be classified into SPLIT, FLUID AND SPLIT-FLUID systems, depending on the degree of obligatoriness and complementarity of the markers.

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Abbreviations

AOR aorist
ATT attenuative *Aktionsart*
DEB debitive (necessity) mood
h honorific
HIAF high affectedness *Aktionsart*
INT interrogative
INTENS intensifier
FERG focal ergative (as opposed to the non-focal ergative)
min minimal number
NARR narrative case
nh non-honorific
REL subject relativizer
REM remote
RESTR restrictive
SAP speech act participant
TR transitivizing conjugation marker

References

Abraham, Werner & Elisabeth Leiss. 2012. The case differential: Syntagmatic versus paradigmatic case – its status in synchrony and diachrony. *Transactions of the Philological Society* 110(3). 316–341.

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(3). 435–483.

Ariel, Mira. 1988. Referring and accessibility. *Journal of Linguistics* 24(1). 65–87.

Ariel, Mira. 2001. Accessibility theory: An overview. In Ted Sanders, Joost Schilperoord & Wilbert Spooren (eds.), *Text representation: Linguistic and psycholinguistic aspects*, 29–88. Amsterdam: John Benjamins.

Aristar, Anthony R. 1997. Marking and hierarchy types and the grammaticalization of case-markers. *Studies in Language* 21. 313–368.

Bekins, Peter Joseph. 2012. *Information structure and object marking: A study of the object preposition* 'et *in Biblical Hebrew*. Hebrew Union College, Jewish Institute of Religion dissertation.

Bickel, Balthasar. 1995. In the vestibule of meaning: Transitivity inversion as a morphological phenomenon. *Studies in Language* 19(1). 73–127.

Bickel, Balthasar. 2011. Grammatical relations typology. In Jae Jung Song (ed.), *The Oxford handbook of language typology*, 399–444. Oxford: Oxford University Press.

Bickel, Balthasar & Johanna Nichols. 2007. Inflectional morphology. In Timothy Shopen (ed.), *Language typology and syntactic description: Grammatical categories and the lexicon*, vol. III: Grammatical Categories and the Lexicon, 169–240. Cambridge: Cambridge University Press.

Bickel, Balthasar, Alena Witzlack-Makarevich & Taras Zakharko. 2015. Typological evidence against universal effects of referential scales on case alignment. In Ina Bornkessel-Schlesewsky, Andrej L. Malchukov & Marc Richards (eds.), *Scales*, 7–43. Berlin: de Gruyter Mouton.

Bickel, Balthasar & Yogendra P. Yādava. 2000. A fresh look at grammatical relations in Indo-Aryan. *Lingua* 110. 343–373.

Blake, Barry J. 1994. *Case*. 2nd edn. Cambridge: Cambridge University Press.

Bossong, Georg. 1982. Der präpositionale Akkusativ im Sardischen. In Otto Winkelmann & Maria Braisch (eds.), *Festschrift für Johannes Hubschmid zum 65. Geburtstag*, 579–599. Bern: Francke.

Bossong, Georg. 1985. *Differentielle Objektmarkierung in den neuiranischen Sprachen*. Tübingen: Narr.

Bossong, Georg. 1991. Differential object marking in Romance and beyond. In Dieter Wanner & Douglas A. Kibbee (eds.), *New analyses in Romance linguistics. Selected papers from the XVIII Linguistic Symposium on Romance Languages, Urbana-Champaign, April 7–9, 1988*, 143–170. Amsterdam: John Benjamins.

Butt, Miriam & Tracy Holloway King. 1996. Structural topic and focus without movement. In Miriam Butt & Tracy Holloway King (eds.), *The Proceedings of the LFG'96 Conference, Rank Xerox, Grenoble*. Stanford, CA: CSLI Publications.

Comrie, Bernard. 1978. Ergativity. In Winfred Philipp Lehmann (ed.), *Syntactic typology: Studies in the phenomenology of language*, 329–394. Austin: University of Texas Press.

Comrie, Bernard. 1986. Markedness, grammar, people and the world. In Fred R. Eckman, Edith A. Moravcsik & Jessica R. Wirth (eds.), *Markedness*, 85–106. New York: Plenum Press.

Comrie, Bernard. 1989. *Language universals and linguistic typology*. 2nd edn. Chicago: University of Chicago Press.
Corbett, Greville G. 1991. *Gender*. Cambridge: Cambridge University Press.
Creissels, Denis. 2008. Direct and indirect explanations of typological regularities: The case of alignment variations. *Folia Linguistica* 42. 1–38.
Creissels, Denis & Céline Mounole. 2011. Animacy and spatial cases. Typological tendencies, and the case of Basque. In Seppo Kittilä, Katja Västi & Jussi Ylikoski (eds.), *Case, animacy and semantic roles*, 157–182. Amsterdam: John Benjamins.
Croft, William. 1988. Agreement vs. Case marking and direct objects. In Michael Barlow & Charles Ferguson (eds.), *Agreement in natural language: Approaches, theories, descriptions*, 159–179. Stanford: CSLI Publications.
Croft, William. 2003. *Typology and universals*. 2nd edn. Cambridge: Cambridge University Press.
Dabir-Moghaddam, Mohammad. 1992. On the (in)dependence of syntax and pragmatics: Evidence from the postposition *-rā* in Persian. In Dieter Stein (ed.), *Cooperating with written texts: The pragmatics and comprehension of written texts*, 549–573. Berlin: Mouton de Gruyter.
Dahl, Östen. 2000. Egophoricity in discourse and syntax. *Functions of Language* 7(1). 37–77.
Dahl, Östen. 2008. Animacy and egophoricity: Grammar, ontology and phylogeny. *Lingua* 118(2). 141–150.
Dahl, Östen & Kari Fraurud. 1996. Animacy in grammar and discourse. In Thorstein Fretheim & Jeannette Gundel (eds.), *Reference and referent accessibility*, 47–64. Amsterdam: John Benjamins.
Dahl, Östen & Maria Koptjevskaja-Tamm (eds.). 2001. *The Circum-Baltic languages: Typology and contact*. Vol. 1. Amsterdam: John Benjamins.
Dahlstrom, Amy L. 1986. *Plains Cree morphosyntax*. Berkeley: University of California at Berkeley dissertation.
Dalrymple, Mary & Irina Nikolaeva. 2011. *Objects and information structure*. Cambridge: Cambridge University Press.
Danon, Gabi. 2001. Syntactic definiteness in the grammar of Modern Hebrew. *Linguistics* 39(6). 1071–1116.
Davison, Alice. 1999. Functionalism and formalism in linguistics. In Michael Darnell, Edith Moravcsik, Frederick Newmeyer, Michael Noonan & Kathleen Wheatley (eds.), *Ergativity: Functional and formal issues*, 177–208. Amsterdam: John Benjamins.
de Hoop, Helen & Peter de Swart. 2008a. Cross-linguistic variation in Differential Subject Marking. In Helen de Hoop & Peter de Swart (eds.), *Differential subject marking*, 1–16. Dordrecht: Springer.
de Hoop, Helen & Peter de Swart (eds.). 2008b. *Differential subject marking*. Dordrecht: Springer.
de Hoop, Helen & Andrej L. Malchukov. 2007. On fluid differential case marking: A bidirectional OT approach. *Lingua* 117(9). 1636–1656.

de Hoop, Helen & Andrej L. Malchukov. 2008. Case-marking strategies. *Linguistic Inquiry* 39(4). 565–587.
de Hoop, Helen & Bhuvana Narasimhan. 2005. Differential case-marking in Hindi. In Mengistu Amberber & Helen de Hoop (eds.), *Competition and variation in natural languages. The case for case*, 321–346. Amsterdam: Elsevier.
de Swart, Peter. 2006. Case markedness. In Leonid Kulikov, Andrej L. Malchukov & Peter de Swart (eds.), *Case, valency and transitivity*, 249–267. Amsterdam: John Benjamins.
de Swart, Peter. 2007. *Cross-linguistic variation in object marking*. Nijmegen: Radboud University Nijmegen dissertation.
DeLancey, Scott. 1981. An interpretation of split ergativity and related patterns. *Language* 57(3). 626–657.
DeLancey, Scott. 1982. Aspect, transitivity, and viewpoint. In Paul J. Hopper (ed.), *Tense-aspect. Between semantics and pragmatics*, 167–183. Amsterdam: John Benjamins.
Dixon, R. M. W. 1979. Ergativity. *Language* 55(1). 59–138.
Dixon, R. M. W. 1994. *Ergativity*. Cambridge: Cambridge University Press.
Dowty, David R. 1991. Thematic proto-roles and argument selection. *Language* 61(3). 547–619.
Escandell-Vidal, M. Victoria. 2009. Differential object marking and topicality: The case of Balearic Catalan. *Studies in Language* 33(4). 832–884.
Everett, Caleb. 2009. A reconsideration of the motivations for preferred argument structure. *Studies in Language* 33(1). 1–24.
Fauconnier, Stefanie. 2011. Differential agent marking and animacy. *Lingua* 121(3). 533–547.
Fauconnier, Stefanie. 2012. *Constructional effects of involuntary and inanimate agents: A cross-linguistic study*. Leuven: Katholiek Universiteit Leuven dissertation.
Feldman, Harry. 1986. *A grammar of Awtuw*. Canberra: Australian National University.
Filimonova, Elena. 2005. The noun phrase hierarchy and relational marking: Problems and counterevidence. *Linguistic Typology* 9(1). 77–113.
Forker, Diana. 2012. The bi-absolutive construction in Nakh-Daghestanian. *Folia Linguistica* 46(1). 75–108.
Gaby, Alice. 2006. *A grammar of Kuuk Thaayorre*. Melbourne: University of Melbourne dissertation.
Gaby, Alice. 2010. From discourse to syntax and back: The lifecycle of Kuuk Thaayorre ergative morphology. *Lingua* 120(7). 1677–1692.
Givón, Talmy. 1976. Topic, pronoun, and grammatical agreement. In Charles N. Li (ed.), *Subject and topic*, 149–188. New York: Academic Press.
Guntsetseg, Dolgor. 2008. Differential object marking in Mongolian. In Florian Schäfer (ed.), *SinSpec: Working Papers of the FSB732 'Incremental Specification in Context'*, vol. 1, 53–69. Stuttgart: Online Publikationsverbund der Universität Stuttgart.
Haiman, John. 1979. Hua: A Papuan language of New Guinea. In Timothy Shopen (ed.), *Languages and their status*, 34–89. Cambridge: Winthrop Publishers.
Harris, Alice C. 1981. *Georgian syntax: A study in Relational Grammar*. Cambridge: Cambridge University Press.

Haspelmath, Martin. 2005. Argument marking in ditransitive alignment types. *Linguistic Discovery* 3. 1–21.
Haspelmath, Martin. 2006. Against markedness (and what to replace it with). *Journal of Linguistics* 42(1). 25–70.
Haspelmath, Martin. 2007. Ditransitive alignment splits and inverse alignment. *Functions of language* 14(1). 79–102.
Haude, Katharina & Alena Witzlack-Makarevich. 2016. Referential hierarchies and alignment: An overview. *Linguistics* 54(4). 433–441.
Hayward, Dick. 1984. *The Arbore language: A first investigation (including a vocabulary)*. Hamburg: Helmut Buske Verlag.
Holisky, Dee Ann. 1987. The case of the intransitive subject in Tsova-Tush (Batsbi). *Lingua* 71. 103–113.
Hopper, Paul J. & Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56(2). 251–299.
Huumo, Tuomas. 2010. Nominal aspect, quantity, and time: The case of the Finnish object. *Journal of Linguistics* 46(1). 1–43.
Iemmolo, Giorgio. 2010. Topicality and differential object marking. Evidence from Romance and beyond. *Studies in Language* 34(2). 239–272.
Iemmolo, Giorgio. 2011. *Towards a typological study of differential object marking and differential object indexation*. Pavia: University of Pavia dissertation.
Iemmolo, Giorgio. 2013a. On the polysemy of object markers and topic markers: A study in diachronic typology. Ms. University Zurich.
Iemmolo, Giorgio. 2013b. Symmetric and asymmetric alternations in direct object encoding. *STUF – Language Typology and Universals* 66. 378–403.
Iemmolo, Giorgio. Forthcoming. Differential object marking: An overview.
Iemmolo, Giorgio & Robert Schikowski. 2014. Differential object coding. Ms. University Zurich.
Karatsareas, Petros. 2011. *A study of Cappadocian Greek nominal morphology from a diachronic and dialectological perspective*. Cambridge: University of Cambridge dissertation.
Karlsson, Fred. 1999. *Finnish: An essential grammar*. London: Routledge.
Keenan, Edward. 1976. Towards a universal definition of subject. In Charles N. Li (ed.), *Subject and Topic*, 305–334. New York: Academic Press.
Keine, Stefan & Gereon Müller. 2008. Differential argument encoding by impoverishment. In Andrej L. Malchukov & Marc Richards (eds.), *Scales*, 83–136. Leipzig: Institut für Linguistik.
Kibrik, Andrej A. 2011. *Reference in discourse*. Oxford: Oxford University Press.
Kiparsky, Paul. 1998. Partitive case and aspect. In Wilhelm Geuder & Miriam Butt (eds.), *The projection of arguments: Lexical and compositional factors*, 265–307. Standford: CSLI Publications.
Kittilä, Seppo. 2008. Animacy effects on differential Goal marking. *Linguistic Typology* 12(2). 245–268.
Klein, Udo & Peter de Swart. 2011. Case and referential properties. *Lingua* 121(1). 3–19.

Kornfilt, Jaklin. 2008. DOM and two types of DSM in Turkish. In Helen de Hoop & Peter de Swart (eds.), *Differential subject marking*, 79–112. Kluwer: Springer.
Krys'ko, Vadim B. 1994. *Razvitie kategorii oduševlennosti v istorii russkogo jazyka*. Moscow: Lyceum.
Laca, Brenda. 1987. Sobre el uso del acusativo preposicional en español. In Carmen Pensado (ed.), *El complemento directo preposicional*, 61–91. Madrid: Visor.
Lambrecht, Knud. 1994. *Information structure and sentence form*. Cambridge: Cambridge University Press.
Lazard, Gilbert. 1992. *A grammar of contemporary Persian*. Costa Mesa, California: Mazda.
Lidz, Jeffrey. 2006. The grammar of accusative case in Kannada. *Language* 82(1). 10–32.
Lyons, Christopher. 1999. *Definiteness*. Cambridge: Cambridge University Press.
Malchukov, Andrej L. 2008. Animacy and asymmetries in differential case marking. *Lingua* 118(2). 203–221.
Mallinson, Graham & Barry J. Blake. 1981. *Language typology: Cross-linguistic studies in syntax*. Amsterdam: North-Holland.
Maslova, Elena. 2003. Information focus in relational clause structure. In Tasaku Tsunoda & Taro Kageyama (eds.), *Voice and grammatical relations: Festschrift for Masayoshi Shibatani*, 175–194. Amsterdam: John Benjamins.
Maslova, Elena. 2008. Case in Yukaghir languages. In Andrej L. Malchukov & Andrew Spencer (eds.), *The Oxford handbook of case*, 789–796. Oxford: Oxford University Press.
McGregor, William B. 1992. The semantics of ergative marking in Gooniyandi. *Linguistics* 30. 275–318.
McGregor, William B. 1998. Optional ergative marking in Gooniyandi revisited: Implications to the theory of marking. *Leuvens contributions in linguistics and philology* 87(3–4). 491–571.
McGregor, William B. 2006. Focal and optional ergative marking in Warrwa (Kimberley, Western Australia). *Lingua* 116(4). 393–423.
McGregor, William B. 2009. Typology of ergativity. *Language and Linguistics Compass* 3(1). 480–508.
McGregor, William B. 2010. Optional ergative case marking systems in a typological-semiotic perspective. *Lingua* 120(7). 1610–1636.
Meakins, Felicity. 2009. The case of the shifty ergative marker: A pragmatic shift in the ergative marker of one Australian mixed language. In Jóhanna Barðdal & Shobhana Lakshmi Chelliah (eds.), *The role of semantic, pragmatic, and discourse factors in the development of case*, 59–92. Amsterdam: John Benjamins.
Moravcsik, Edith. 1978. On the distribution of ergative and accusative patterns. *Lingua* 45. 233–279.
Næss, Åshild. 2004. What markedness marks: The markedness problem with direct objects. *Lingua* 114(9–10). 1186–1212.
Nichols, Johanna. 1986. Head-marking and dependent-marking grammar. *Language* 62. 56–119.

Nikolaeva, Irina. 2001. Secondary topic as a relation in information structure. *Linguistics* 39(1). 1–49.
Overall, Simon E. 2007. *A grammar of Aguaruna*. Melbourne: La Trobe University dissertation.
Pensalfini, Robert. 1997. *Jingulu grammar, dictionary, and texts*. Cambridge, MA: Massachusetts Institute of Technology dissertation.
Saeed, John I. 1987. *Somali reference grammar*. Wheaton, Maryland: Dunwoody Press.
Sasse, Hans-Jürgen. 1984. Case in Cushitic, Semitic and Berber. In James Bynon (ed.), *Current progress in Afro-Asiatic linguistics*, 111–126. Amsterdam: John Benjamins.
Schikowski, Robert. 2013. *Object-conditioned differential marking in Chintang and Nepali*. Zurich: University of Zurich dissertation.
Seržant, Ilja A. 2013. Rise of canonical subjecthood. In Ilja A. Seržant & Leonid Kulikov (eds.), *The diachronic typology of non-prototypical subjects*, 283–310. Amsterdam: John Benjamins.
Seržant, Ilja A. 2014. Denotational properties of the independent partitive genitive in Lithuanian. In Axel Holvoet & Nicole Nau (eds.), *Grammatical relations and their non-canonical encoding in Baltic*, 257–299. Amsterdam: John Benjamins.
Seržant, Ilja A. 2015. The Independent Partitive as an Eastern Circum-Baltic isogloss. *Journal of Language Contact* 8(1). 341–418.
Seržant, Ilja A. 2016. Nominative case in Baltic in the typological perspective. In Axel Holvoet & Nicole Nau (eds.), *Valency, argument realization and grammatical relations in Baltic*, 137–198. Amsterdam: John Benjamins.
Seržant, Ilja A. & Jana Taperte. 2016. Differential argument marking with the Latvian debitive: A multifactorial analysis. In Axel Holvoet & Nicole Nau (eds.), *Argument structure in Baltic*, 199–258. Amsterdam: John Benjamins.
Siewierska, Anna. 2003. Person agreement and the determination of alignment. *Transactions of the Philological Society* 101. 339–370.
Siewierska, Anna. 2004. *Person*. Cambridge: Cambridge University Press.
Siewierska, Anna & Dik Bakker. 2009. Case and alternative strategies. In Andrej L. Malchukov & Andrew Spencer (eds.), *The Oxford handbook of case*, 290–303. Oxford: Oxford University Press.
Silverstein, Michael. 1976. Hierarchy of features and ergativity. In R. M. W. Dixon (ed.), *Grammatical categories in Australian languages*, 112–171. Atlantic Highlands, NJ: Humanities Press.
Sinnemäki, Kaius. 2014. A typological perspective on Differential Object Marking. *Linguistics* 52(2). 281–313.
Song, Jae Jung. 2001. *Linguistic typology: Morphology and syntax*. Harlow: Longman.
Sulkala, Helena & Merja Karjalainen. 1992. *Finnish*. London: Routledge.
Thráinsson, Höskuldur. 2002. Icelandic. In Ekkehard König & Johan Van der Auwera (eds.), *The Germanic languages*, 142–189. London: Routledge.
Timberlake, Alan. 2004. *A reference grammar of Russian*. Cambridge: Cambridge University Press.

Torrego Salcedo, Esther. 1999. El complemento directo preposicional. In Ignacio Bosque & Violeta Demonte (eds.), *Gramática descriptiva de la lengua española. Las construcciones sintácticas fundamentales. Relaciones temporales, aceptuales y modales*, vol. 2, 1779–1805. Madrid: Espasa Calpe.

Tournadre, Nicolas. 1991. The rhetorical use of the Tibetan ergative. *Linguistics of the Tibeto-Burma Area* 14(1). 93–108.

Tuite, Kevin, Asif Agha & Randolph Graczyk. 1985. Agentivity, transitivity, and the question of active typology. In *CLS 21, Part 2: Papers from the parasession on causatives and agentivity*, 252–270. Chicago Linguistic Society.

von Heusinger, Klaus. 2008. Verbal semantics and the diachronic development of DOM in Spanish. *Probus* 20. 1–31.

von Heusinger, Klaus. 2011. Specificity. In Klaus von Heusinger, Claudia Maienborn & Paul Portner (eds.), *Semantics. An international handbook of natural language meaning*, vol. 2, 1025–1058. Berlin: de Gruyter Mouton.

von Heusinger, Klaus & Georg A. Kaiser. 2003. The interaction of animacy, definiteness and specificity in Spanish. In Klaus von Heusinger & Georg A. Kaiser (eds.), *Proceedings of the Workshop "Semantic and Syntactic Aspects of Specificity in Romance Languages"*, 41–65. Universität Konstanz: Fachbereich Sprachwissenschaft (Arbeitspapier 113).

von Heusinger, Klaus & Georg A. Kaiser. 2007. Differential object marking and the lexical semantics of verbs in Spanish. In Georg A. Kaiser & Manuel Leonetti (eds.), *Proceedings of the Workshop "Definiteness, Specificity and Animacy in Ibero-Romance Languages"*, 83–109. Universität Konstanz: Fachbereich Sprachwissenschaft.

von Heusinger, Klaus & Georg A. Kaiser. 2011. Affectedness and differential object marking in Spanish. *Morphology* 21. 593–617.

Wali, Kashi & Omkar N. Koul. 1997. *Kashmiri: A cognitive-descriptive grammar*. London: Routledge.

Wierzbicka, Anna. 1981. Case marking and human nature. *Australian Journal of Linguistics* 1(2). 245–247.

Witzlack-Makarevich, Alena. 2011. *Typological variation in grammatical relations*. Leipzig: Unversity of Leipzig dissertation.

Woolford, Ellen. 2008. Differential Subject Marking at argument structure, syntax and PF. In Helen de Hoop & Peter de Swart (eds.), *Differential Subject Marking*, 17–40. Dordrecht: Springer.

Zúñiga, Fernando. 2006. *Deixis and alignment: Inverse systems in indigenous languages of the Americas*. Amsterdam: John Benjamins.

Chapter 2

Differential object marking in Chichewa

Laura J. Downing
Göteborgs universitet

In most Bantu languages, an object prefix can occur on the verb. In some Bantu languages, this object prefix has a purely anaphoric function, while in others it has an additional agreement function. Since Bresnan & Mchombo, Chichewa (Bantu N.31 Malawi) has been considered a textbook example of a language where the object marker is "always an incorporated pronoun and never a non-referential marker of grammatical agreement" (Bresnan & Mchombo 1987: 755). That is, in order for an overt nominal phrase (DP) to co-occur in the same sentence with an object prefix, the DP must be a dislocated Topic. Conversely, a dislocated object DP (a Topic) must be anaphorically bound to an object prefix. In this paper I present new Chichewa data showing that in modern colloquial Chichewa there is a human/non-human asymmetry in object marking. Human object DPs commonly co-occur with an object prefix, whether the object is a dislocated Topic or not, whereas non-human ones commonly do not co-occur with an object prefix, even when they are dislocated Topics. I conclude that Chichewa shows differential object marking (or object indexation), as humanness is a more important condition on the occurrence of object prefixes than word order. The implications of the Chichewa (and other Bantu) data for recent proposals like Creissels (2006), Dalrymple & Nikolaeva (2011) and Iemmolo (2013; 2014) about the diachronic development of DOM agreement systems from anaphoric Topic marking systems are discussed, and an alternative constraints-based account is proposed.

1 Introduction

Object markers, commonly found in Bantu languages, are part of a complex string of pre-stem verbal inflectional prefixes, which include an obligatory subject prefix and tense-aspect-mood (TAM) prefixes. Object markers, when they occur, are positioned immediately before the verb stem, as illustrated in the Swahili example below.[1] (The object marker is bolded):

[1]There are 500+ Bantu languages spoken over a huge geographic area, so, not surprisingly, this generalization about the position of object markers does not hold for all Bantu languages. Rather, it holds for the languages spoken in the eastern and southern parts of the Bantu region. This paper concentrates on languages from this area. See Marten & Kula (2012) and Beaudoin-Lietz et al. (2004) for more discussion of the variation in the position of object markers.

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(1) a. *Structure of the Bantu verb* (Meeussen 1967; Nurse 2003)
Subject - TenseAspectMood - **(Object)** - [$_{Stem}$Root (-Extensions)-Final Vowel

b. Swahili (Bantu; Riedel 2009: 4)
*A-li-**wa**-[$_{Stem}$on-a.*
CL1SBJ-PST-CL2OBJ-see-FV
'S/he (class 1) saw them (class 2).'

The form of both subject and object markers is determined by the concord class of the noun they refer to. Each noun concord class is traditionally assigned a number. In the interlinear glosses in (1b), for example, CL1SBJ labels a subject marker from class 1; CL2OBJ labels an object marker from class 2.

As we can see in (1b), object markers can function like incorporated pronouns, performing the function of independent pronominal words in languages like English. Work like Givón (1976), Bresnan & Mchombo (1987), and Creissels (2006) indeed agrees that Bantu object markers have most plausibly developed historically from the grammaticalization of independent pronouns. Creissels (2006: 44–45) proposes that there are three stages in the further evolution of the function of object markers cross-linguistically:

(2) **Stage II:** the object marker has a *purely anaphoric* function, as it cannot occur within the limits of the clause [TP/IP] containing an overt co-referential object DP.

Stage II: the object marker acquires an additional *agreement* function, as it obligatorily occurs, even if the clause contains a co-referential object DP. It retains an anaphoric function as it can also represent, on its own, a co-referential DP that is not contained within the limits of the clause.

Stage III: at this stage, the pronominal marker has a *purely agreement* function, as it cannot represent on its own a co-referential DP not contained within the limits of the clause.

Since Bresnan & Mchombo (1987), Chichewa (Bantu N31 Malawi) has been considered a textbook example of a Stage I language. The object marker is "always an incorporated pronoun [anaphor] and never a non-referential marker of grammatical agreement" (Bresnan & Mchombo 1987: 755). In order for an overt DP to co-occur in the same sentence with an object marker, the DP must be a dislocated Topic in their analysis. Conversely, a dislocated object DP (a Topic) must be anaphorically bound to an object marker (Bresnan & Mchombo 1987: 749).

In this paper I present new Chichewa data showing that, in fact, modern colloquial Chichewa is a Stage II language, with a human/non-human asymmetry in object marking: human object DPs commonly co-occur with object marking, whereas non-human ones commonly do not. I conclude that Chichewa shows differential object marking (or object indexation), as humanness is a more important condition on the occurrence of object markers than word order.

The paper is organized as follows. First, in §2, I review Bresnan & Mchombo's (1987) diagnostics for purely anaphoric status of object markers. In §3, I show that Chichewa fails all of these diagnostics. Finally, in §4, I discuss the implications of the Chichewa (and other Bantu) data for recent proposals like Creissels (2006), Dalrymple & Nikolaeva (2011) and Iemmolo (2013; 2014) about the diachronic development of DOM agreement systems and develop a constraints-based account.

2 Diagnostics for the anaphoric vs. grammatical agreement function of object markers

2.1 Object marker is purely anaphoric

Bresnan & Mchombo (1987) propose the following diagnostics that determine whether object markers are purely anaphors, referring to Topics and other DPs (nominal phrases) outside the clause in a particular language. (This corresponds to Creissels's 2006 Stage I):

(3) Diagnostics for anaphoric use of object markers:
   a. Word order: the occurrence of the object marker correlates with non-canonical word order; more precisely, only dislocated DPs are resumed with object markers and dislocated DPs must be resumed with object markers.
   b. Focused elements: cannot be referred to with an object marker.
   c. Prosody: an object DP resumed by an object marker is considered anaphoric if the object is phrased separately from a preceding object-marked verb.

If the object marker meets these tests, then the object marker is anaphoric. Any overt object DP which co-occurs with an object marker must be dislocated. Any dislocated object DP must be licensed with (anaphorically bound to) an object marker. Object markers have been argued to have a primarily anaphoric function, using these sorts of criteria, in Bantu languages like: Haya (Duranti & Byarushengo 1977), Northern Sotho (Zerbian 2006), Tswana (Creissels 2006), Zulu (Buell 2005; Cheng & Downing 2009; Schadeberg 1995; van der Spuy 1993; Zeller 2012) and Swati (Marten & Kula 2012). Indeed, Creissels's (2006) claims that Stage I object markers are very common in African languages generally.[2]

The diagnostics for purely anaphoric use of the object marker are illustrated with data from Zulu (Cheng & Downing 2009). Canonical word order in Zulu is: S V IO DO Oblique. As shown by the Zulu data in (4) and (5), both left and right dislocations of object DPs are easily elicited by asking content questions on a verb complement. Both the content question word or particle and the answer to the content question (which have inherent focus) must occur immediately after the verb. A non-focused verb complement must be displaced from its canonical postverbal position either to preverbal position or to a position following the element in immediately after the verb position. Note that we

[2]See also Riedel's (2009), Marten & Kula's (2012) and van der Wal's (2015) recent cross-Bantu surveys.

find an obligatory object marker referring to an object or direct object which has been displaced from its canonical position.[3]

(4) Zulu left dislocations (Bantu; author's elicitation notes)
Wh-questions

Q	*(Ámá-bhayisékíl'*	*u-**wá**-níkée*	*ó-baani)?*
	CL6-bicycle	2SGSBJ-CL6OBJ-give.PRF	CL2-who
	'Whom did you give bicycles to?'		
A	*(Ámá-bhayisékiili)*	*(si-**wá**-níkée*	*ábá-ntwaana).*
	CL6-bicycle	1PLSBJ-CL6OBJ-give.PRF	CL2-child
	'We gave bicycles to the children.'		

(5) Zulu right dislocations (Bantu; author's elicitation notes)
Wh-questions

Q	*((Ízí-vakáashi)*	*(zí-**yí**-thengelée-ni)*	*ímí-ndeni*	*yáazo)* ?
	CL8-visitors	CL8SBJ-**CL4OBJ**-buy.for.PRF-what	CL4-families	CL4.their
	'What did the visitors buy for their families?'			
A	*((Ízí-vakáshí*	*zí-**yí**-thengelé*	*ízí-nguubo)*	*ímí-ndeni*
	CL8-visitors	CL8SBJ-**CL4OBJ**-buy.for.PRF	CL10-clothes	CL4-families
	yáazo).			
	CL4.their			
	'The visitors bought clothing for their families.'			

Evidence that the objects resumed with an object marker (underlined) in (5) are dislocated is that, first, they are set off prosodically from the rest of the sentence. As Cheng & Downing (2009) show, the main evidence for the prosodic phrasing (indicated by parentheses) is lengthening of the phrase penult vowel. (Vowel length is not contrastive in Zulu.) Furthermore, IO DO word order is strictly respected in broad focus sentences. The DO IO order in (5) is only felicitous if the DO is in focus and IO is out of focus. As Cheng & Downing (2009) and Cheng & Downing (2012) argue, non-focused material cannot occur within the *v*P in Durban Zulu. While dislocated objects must be resumed with an object marker, objects in focus (and therefore in IAV position) cannot be resumed with an object marker. This is shown by the infelicitous sentence in (6a), where the object marker *zi-* refers to 'visitors', the word in focus, rather than to 'chicken', old information repeated from the question (and dislocated out of the vP):

[3]The accent marks on vowels in the data indicate high tone; long vowels are indicated by doubling the vowel. In the morpheme glosses, numbers indicate noun concord class, following the standard Bantu system adopted in work like Mchombo (2004). Dislocated elements are underlined, and object markers are bolded.

(6) Zulu (Bantu; author's elicitation notes)

a. Q *((Ú-siipho)* *(ú-**yí**-phékéla* *BAANI)* *ín-kuukhu)* *?*
cl1-Sipho cl1sbj-**cl9obj**-cook.for cl1.who cl9-chicken
'Who is Sipho cooking the chicken for?'

b. A *((Ú-síph'* *ú-**yí**-phékél'* *ÍZÍ-VAKÁASH')* *ín-kuukhu)* .
cl1-Sipho cl1sbj-**cl9obj**-cook.for cl8-visitor cl9-chicken
'Sipho is cooking the chicken for the visitors.'

a. *#Ú-síph'* *ú-**zí**-phékél'* *ÍZÍ-VAKÁASH'* *ín-kuukhu.*
cl1-Sipho cl1sbj-**cl8obj**-cook.for cl8-visitor cl9-chicken

(Object marking would only be acceptable with the word order in (6a) as the answer to a question like, "What did Sipho do with the chicken for the visitors?" where 'visitors' is topical, given information.) The data set in (6) demonstrates especially clearly that in Zulu we find the correlation between object marker and topical (or dislocated, out of focus) status of the co-referential object that Bresnan & Mchombo (1987) and Creissels (2006) have proposed characterize the object marker in languages where it has a purely anaphoric function. (This corresponds to Creissels 2006's Stage I.)[4]

2.2 Object marker is also a grammatical agreement marker

As far as I know, in all Bantu languages, the object marker can have an anaphoric (pronominal) function, resuming objects that occur earlier in the discourse as well as (at least some) topical, dislocated objects. The object marker also has a grammatical agreement-like function in some Bantu languages: it can co-occur with a co-referential object within the same TP/IP (i.e., roughly, a clause).[5] Languages where this has been demonstrated include Bemba (Marten & Kula 2012), Swahili, Sambaa, Chaga (Riedel 2009: 59), Chimwiini (Kisseberth & Abasheikh 1977) and Manyika Shona (Bax & Diercks 2012). For example, in Swahili, as we saw in (1b) object markers can serve an anaphoric function, resuming objects mentioned earlier in the discourse. They also serve a grammatical agreement function: object marking is obligatory with overt human objects – (7a) – and common with definite non-human objects – (7c):[6]

[4] Though Zeller (2012) provides some problematic examples, showing humanness plays a role in object marking in Zulu for some speakers in some grammatical contexts, the consensus in the Zulu literature is that object marking correlates with dislocation of the object DP. See van der Spuy (1993); Cheng & Downing (2009); Schadeberg (1995), and Buell (2005) for discussion.

[5] See Morimoto's (2002), Riedel's (2009), Marten & Kula's (2012) and van der Wal's (2015) recent surveys of the variation in the function and distribution of pre-verb stem object markers, illustrating a range of possibilities from Creissels (2006) Stage I to Stage II. (As Creissels 2006 notes, Stage III is not common in the languages of the world.)

[6] Object marking might not be as obligatory in colloquial Swahili as traditionally described, see Seidl & Dimitriadis (1997) for discussion.

(7) Swahili (Bantu; Riedel 2009: 42, 46)

a. *Ni-li-**mw**-ona* *mwanawe.*
1SGSBJ-PST-CL1OBJ-see CL1.child.POSS.3SG
'I saw his child.'

b. **Ni-li-ona mwanawe*

c. *Ni-li-**zi**-ona* *picha* *hizo.*
1SGSBJ-PST-CL10OBJ-see CL10.picture CL10.those
'I saw those pictures.'

Riedel (2009) affirms that the object marker in these examples occurs even though the overt object is in its base position, and no prosodic break separates the object-marked verb from the overt object. Bantu languages with grammatical agreement-like object marking show a great deal of variation as to whether the markers are obligatory or optional. The unifying generalization is that agreement-like object markers co-occur with human or animate objects or with definite objects. (See, e.g. Duranti 1979; Bentley 1994; Morimoto 2002; Riedel 2009; Marten & Kula 2012; van der Wal 2015). That is, agreement-like marking of objects in Bantu languages is conditioned by the topicality hierarchies in (8):[7]

(8) Topicality hierarchies (Hyman & Duranti 1982: 224)
a. Benefactive > Recipient > Patient > Instrument
b. 1^{st} > 2^{nd} > 3^{rd} human > 3^{rd} animal > 3^{rd} inanimate
c. definite > indefinite

These hierarchies have also been shown to play a central role in defining other object properties in Bantu languages (Duranti 1979; Hyman & Hawkinson 1974; Hyman & Duranti 1982), and in conditioning differential object marking in a number of typologically diverse languages. (See e.g. Comrie 1981; 1989; Aissen 2003; Iemmolo 2013; 2014). Creissels (2006: 48–49) qualifies Bantu languages like Swahili as in transition from Stage I to Stage II because agreement object markers are not entirely obligatory. This is because only some types of objects – human and definite – show agreement-like object marking in Swahili. He notes that pure Stage II object marking systems are not common in African languages, but provides no explanation for why this might be so. I take up the discussion of how languages might change from anaphoric object marking to a system of differential grammatical agreement object marking in §4. First, I review the distribution of object marking in modern colloquial Chichewa.

[7] See Witzlack-Makarevich & Seržant (2018 [this volume]) for a detailed overview of the role of different versions of the hierarchies in (8) in accounting for DOM. While the term *topicality hierarchy* is well-established in the literature, a number of other terms are also in current use, as Witzlack-Makarevich & Seržant (2018 [this volume]) make clear.

3 The function of object markers in Chichewa: anaphoric or grammatical agreement?

As noted above, since Bresnan & Mchombo (1987), Chichewa is considered to be a prototypical Stage I language: the object marker is always an anaphor and signals that the cooccurring object does not occur within the same VP as the object marker. Furthermore, dislocated objects must be resumed by an object marker. Recall that these claims about the pronominal status of the object marker are based on the diagnostics in (3). In this section, I present new Chichewa data, recently elicited in Malawi.[8] As we will see, object marking in modern colloquial Chichewa fails all three of Bresnan & Mchombo's (1987) diagnostics for anaphoric status. Instead, it shows differential object marking properties. I take up Bresnan & Mchombo's (1987) diagnostics one by one below.

3.1 Changes in word order and object marking

In Chichewa, as in most Bantu languages, the basic word order is: (Subject) Verb (Object1) (Object2) (Oblique). (See, e.g. Heine 1976; Bearth 2003; Downing & Hyman 2016). Chichewa allows multiple objects, with a non-theme (e.g. benefactive) object generally preceding the theme object. Adverbials and other oblique arguments are found at the periphery of the main clause. According to Mchombo (2004), nothing can separate an object nominal from the preceding verb, unless the verb is object-marked.

In my corpus one frequently finds examples where a co-referential object marker on the verb resumes a dislocated object DP. (Parentheses continue to indicate prosodic phrasing.)[9] This data is consistent with Bresnan & Mchombo's (1987) diagnostics for the purely anaphoric status of object marking given in (3):

(9) Left dislocations
Chichewa (Bantu; author's elicitation notes)

a. *((Chi-máangá)* *(á-**chí**-lima* *nyengo*
CL7-maize CL1SBJ.PST-CL7OBJ-cultivate CL9.season
í-kú-bwélaa-yi) *((ndipó* *fóodya)*
CL9-PROG-come-CL9.REL and CL3.tobacco
*(a-dzá-**mú**-lima* *nyengo* *ínáayo).*
CL1SBJ-FUT-CL3OBJ-cultivate CL9.season CL9.next
'Maize she cultivated this season, and tobacco she will cultivate next season.'

[8] The data was collected using an elicitation questionnaire for an investigation that had as its original aim to describe the prosody of dislocated nominals. However, once I noticed that the use of object markers did not match Bresnan & Mchombo's (1987) description, I re-elicited data from Bresnan & Mchombo (1987) to test their diagnostics for the distribution of object markers on this set of speakers. The elicitation interviews were conducted in Malawi in 2011 and 2013, primarily with four native speakers of Chichewa aged between 22 and 40 years old. The resulting corpus investigating the distribution of object markers consists of some 50–75 sentences per speaker. Pascal Kishindo, Professor of Chichewa syntax at Chancellor College and a native speaker of Chichewa, kindly checked the corpus and has confirmed that all the examples cited in this section are grammatical.

[9] See Cheng & Downing (2016) for justification of the prosodic phrasing indicated in these examples.

b. *(Mwaná wódwálaa-yo) (á-kú-**mu**-téngéla ku chipataalá) (ndi ndaání).*
CL1.girl CL1.sick-CL1DEM CL1SBJ-**PROG**-CL1OBJ-take.to LOC CL7.hospital COP who
'That sick child, (the one) taking her to the hospital is who?'

(10) Right dislocations
Chichewa (Bantu; author's elicitation notes)

a. *(((Pa tébuuló) (wa-**zí**-ika) mtsíkaana) mbaale).*
LOC CL5.table CL1SBJ.PST-CL10OBJ-put CL1.girl CL10.plate
'On the table, [she] put them, the girl, plates.'

b. Chichewa (Bantu; author's elicitation notes)
*((((Udzuúdzú) (u-na-**wá**-lúmá kwámbíili) pa nyaánjá) dzuuló) a-soodzi).*
CL14.mosquito CL14SBJ-PST-CL2OBJ-bite much LOC CL9.lake yesterday CL2-fisherman
'The mosquitoes bit them a lot on the lake yesterday, fishermen.'

We find many examples, though, where the occurrence of the object marker does not correlate with dislocation of the co-referential DP. Human objects are often resumed by an object marker, even when they are in their base position, immediately following the verb. In (11), the same sentence is given with four different word orders. Note that no prosodic break separates the overt object from the verb in these examples, and there is no other evidence that the overt object is dislocated in any of the sentences:[10]

(11) Chichewa (Bantu; data re-elicited from Bresnan & Mchombo 1987)

a. *(Njúuchí) (zi-na-lúmá a-leenje).*
CL10.bee CL10SBJ-PST-bite CL2-hunter

b. *(Njúuchí) (zi-na-**wá**-lúma a-leenje).*
CL10.bee CL10SBJ-PST-CL2OBJ-bite CL2-hunter

c. *((Zi-na-lúmá a-leenje) njúuchi).*
CL10SBJ-PST-bite CL2-hunter CL10.bee

d. *((Zi-na-**wá**-lúma a-leenje) njúuchi).*
CL10SBJ-PST-CL2OBJ-bite CL2-hunter CL10.bee
'The bees bit the hunters.'

[10] I am not the first to observe that object markers can co-occur with in situ (human) objects in Chichewa. Indeed, Bresnan & Mchombo (1987) mention this possibility in a footnote. Bentley (1994) and Henderson (2006) also provide a few examples. As far I know, this paper is, though, the first attempt to systematically document the role of humanness in conditioning object marking in Chichewa.

The point they illustrate is that it is acceptable for the object marker *wa-* to co-occur with the object it refers to, 'hunters'. Both the sentences containing *wa-* – (11b) and (11d) – and the ones omitting it – (11a) and (11c) – are judged grammatical by all the speakers I have asked, even though, according to Bresnan & Mchombo (1987), the versions with the object marker should not be acceptable. More examples of the use of object markers with in situ objects are given below. (Note that in Chichewa, unlike in Zulu, objects in focus are not required to occur in immediately after the verb position):

(12) Chichewa (Bantu; author's elicitation notes)
(M-zákee-yó) *(a-na-**mú**-pátsá* *Málíya* *chóóváala).*
CL1-friend-CL1DEM CL1SBJ-PST-CL1OBJ-give CL1.Mary CL7.dress
'Her friend gave Mary a dress.'

(13) Chichewa (Bantu; Downing & Mtenje 2011: 84, 91)
a. *(Ndi* *zóóváala)* *(zi-méné* *a-lendó* *á-ná-**mu**-gulílá*
COP CL8.clothes CL8-REL CL2-visitor CL2SBJ-PST-CL1OBJ-buy.for
m-phunzitsii-zo).
CL1-teacher-CL8.REL
'It is clothes that the visitors bought for the teacher.'
b. *((Ti-na-kúmána* *nd'* *áá-méné* *á-ná-**mu**-óná* *Báanda)*
we-PST1-meet with CL2-REL CL2SBJ-PST-CL1OBJ-see CL1.Banda
dzuulo).
yesterday
'We met the ones who saw Banda yesterday.'

Human objects are commonly resumed with an object marker whether they precede or follow a content question word like *chiyáani* 'what'; word order has no effect on the occurrence of object marking:

(14) Chichewa (Bantu; author's elicitation notes)
a. *((Mu-ku-**wá**-phíkila* *chiyáani)* *aáná)?*
you-PROG-CL2OBJ-cook.for what CL2.children
b. *((Mu-ku-**wá**-phíkila* *aáná)* *chiyáani)?*
you-PROG-CL2OBJ-cook.for CL2.children what
'What are you cooking for the children?'

Another problem for the anaphoric status of object markers posed by this data is that non-human objects are not systematically resumed with an object marker. This is true even in contexts where they meet diagnostics for dislocation, such as preverbal position:

(15) *Preverbal objects*
Chichewa (Bantu; author's elicitation notes)

a. *((U-nga-kumbukila kútí búkuu-li) a-ná-gulá-di ku*
you-can-remember that CL5.book-CL5.this CL1SBJ-PST-buy-EMPH LOC
Blántaayá)?
Blantyre
'Can you remember whether she bought this book in Blantyre?'

b. *(Chí-mánga á-líma ch-aka ch-iinó) (ndipó*
CL7-maize CL1SBJ.PST-cultivate CL7-season CL7.this and
fódya a-dzá-líma ch-aka chá máawa).
CL5.tobacco CL1SBJ-FUT-cultivate CL7-season CL7.of next
'Maize, she will cultivate this season, and tobacco she will cultivate next season.' (cf. (9a))

c. *(Kodí makáala) (u-náa-gula kuuti)?*
Q CL6.charcoal you-PST-buy where
'Where did you buy charcoal?'

Non-human objects are also not necessarily resumed with an object marker when they follow a postverbal temporal adjunct. This is another position where they are clearly dislocated, since objects otherwise cannot be separated from the verb by an adjunct in Chichewa (Mchombo 2004):[11]

(16) *Postverbal, post adjunct object*
Chichewa (Bantu; author's elicitation notes)

a. *Context: 'When will s/he write a to the school?*
((A-dzá-lémba máawá) káláta yópítá ku sukúulu).
CL1SBJ-FUT-write tomorrow CL9.letter CL9.of.INF.go LOC CL5.school
'S/he will write a letter to the school tomorrow.'

b. *Context: Can you also play the drums?*
(Íinde) (ndí-ma-yímba BWINO ng'ooma).
yes I-HAB-play well CL10.drum
'Yes, indeed, I play the drums well.'

In some cases, a consultant would even pronounce the verb with and without the object marker in successive repetitions of the same sentence:

(17) Chichewa (Bantu; author's elicitation notes)

a. *Context: Where did you buy the charcoal?*
((Ta-gula KU MSIIKÁ) makáala).
we.PST-buy LOC CL3.market CL6.charcoal

[11]The attentive reader will have noticed that there are a number of different past tenses, all labeled PST. I have not labeled them more specifically, as choice of tense does not condition object marking.

b. *((Ta-wá-gula* *KU* *MSIIKÁ)* *makáala).*
we.PST-CL6OBJ-buy LOC CL3.market CL6.charcoal
'We bought the charcoal at the market.'

Following a content question word (or other word) in immediately after the verb position (indicated with capital letters), an object marker is again not obligatory for a non-human object:

(18) Chichewa (Bantu; author's elicitation notes)

a. *(((Kodí* *azi-bambo* *a-na-nyámúla* *BWÁANJI)* *makáala)* *ku*
Q CL2-man CL2.SBJ.PST-carry how CL6.charcoal LOC
msiika)?
CL3.market
'How did the men carry the charcoal to market?'

b. *(((Kodí* *m-tsíkana* *a-naká-chápá* *KUUTI)* *zóováló* *zá*
Q CL1-girl CL1SBJ-PST-wash where CL8.clothes CL8.of
á-máy' *aáké)?*
CL2-mother CL2.her
'Where did the girl wash her mother's clothes on Sunday?'

According to my language consultants, there is no difference in interpretation, whether the object marker is present or not. This overabundance of human object marking compared to non-human is also found in relative clauses. As studies of Chichewa relative clauses like Downing & Mtenje (2011), Henderson (2006), and Mchombo (2004) show, human indirect object heads are obligatorily resumed with object marking on the relative verb (19a); human direct object heads are commonly resumed (19b); while non-human direct object heads are not resumed (19c). (The facts regarding non-human indirect object heads need further study.)

(19) Chichewa (Bantu; Downing 2010, Downing & Mtenje 2011: 76, 78. The RC is underlined.)

Human head of RC – object marking

a. *((A-lendó* *a-méné* *á-ná-wa-bweretsérá* *m-pháatso)*
CL2-visitor CL2-REL CL2SBJ-PST-CL2OBJ-bring.for CL10-gift
a-koondwa).
CL2SBJ-be.happy
'The visitors who they brought the gifts for are happy.'

b. *((A-lendó* *a-méné* *Bándá* *á-ná-wá-óná* *ku* *sukúulu)*
CL2-visitor CL2-REL CL1.Banda CL1SBJ-PST-CL2OBJ-see LOC CL5.school
a-pìítá).
CL2SBJ-go
'The visitors who Banda saw at the school have gone.'

Non-human head of RC – no object marking

c. *((M-waná wá súkúlú a-ná-lémba káláta i-méné*
CL1-child CL1.of school CL1SBJ-PST-write CL9.letter CL9-REL
m-phunzitsi á-ná-weléenga) kwá a-nyúuzi).
CL1-teacher CL1SBJ-PST-read for CL2-newspaper
'A student wrote the letter which the teacher read for the newspaper.'

3.2 Object markers and focus

As Bresnan & Mchombo (1987) argue, if the object marker in Chichewa were a Stage I, purely anaphoric agreement marker, it should never be co-referential with an element in focus. However, we find object marking for human words in focus: e.g. content question words and the answers to content questions, as shown by the data below:

(20) Chichewa (Bantu; author's elicitation notes)

a. *(Kodí) ((u-na-**mú**-óná NDAÁNI) ku tchálítchi m'máawá)?*
Q 2SGSBJ-PST-CL1OBJ-see CL1.who LOC CL5.church LOC.morning
'Who did you see at church in the morning?'

b. *Q (Kodí ámáyi a-ná-**m**-pátsá NDANÍ ma-lalaanje)?*
Q CL2.mother CL2SBJ.PST-CL1OBJ-give CL1.who CL6-orange?
'Who did mother give the oranges to?'

c. *A ((Amáayi) (a-ná-**m**-pátsá NZÁAWO) ma-lalaanje).*
CL2.mother CL2SBJ.PST-CL1OBJ-give CL1.POSS.friend CL6-orange
'Mother gave her friend the oranges.'

Note in the following example that the dislocated non-human object *kalata-yo* is not resumed with an object marker, while the in situ, focused human object *Prisca* is:

(21) Chichewa (Bantu; author's elicitation notes)
Context: 'Who did the teacher write the letter to?'
*(Kálátaa-yó) (a-ná-**mú**-lémbera PRÍSCA).*
CL9.letter-DEM CL1SBJ-PST-CL1OBJ-write.to CL1.Prisca
'That letter, the teacher wrote to Prisca.'

The by now familiar human vs. non-human asymmetry in object marking also holds in this focus context. It is considered ungrammatical to use an object marker with a non-human content question word:

(22) Chichewa (Bantu; author's elicitation notes)

a. *(Kodí mu-ku-fúná chiyáani)?*
Q 2SGSBJ-PROG-want CL7.what
'What do you want?'

b. **Kodi mu-ku-**chi**-funa chiyani?*
Q 2SGSBJ-PROG-CL7OBJ-want CL7.what

As we see, it is humanness, not a topic-focus distinction, which conditions the occurrence of the object marker.

3.3 Prosodic phrasing and the occurrence of the object marker

In Bresnan & Mchombo's (1987) analysis, prosody provides additional evidence that an object nominal that co-occurs with a co-referential object marker is dislocated. A prosodic break signals the syntactic constituent edge preceding a right-dislocated DP, which, in their account, is always resumed by an object marker. Work like Bresnan & Mchombo (1987) and Kanerva (1990) demonstrate that there are two kinds of systematic evidence for prosodic phrase breaks in Chichewa: significant lengthening of the phrase penult vowel and tonal alternations, such as final high tone retraction, high tone spread blocked, related to penult lengthening. Recall that the Zulu data in (4)–(6) illustrate the expected prosodic break preceding a (right-)dislocated object DP (underlined), which is obligatorily resumed by object marking on the verb. An example is repeated here for convenience; notice the phrase penult lengthening on the word preceding the right-dislocated object:

(23) Prosody and right dislocation in Zulu (Bantu; author's elicitation notes)

Q	*((Ízí-vakáashi)*	*(zí-yí-thengelée-ni)*	*ímí-ndeni*	*yáazo)?*
	CL8-visitors	CL8SBJ-CL4OBJ-buy.for.PRF-what	CL4-families	CL4.their

'What did the visitors buy for their families?'

A	*((Ízí-vakáshí*	*zí-yí-thengelé*	*ízí-nguubo)*	*ímí-ndeni*
	CL8-visitors	CL8SBJ-CL4OBJ-buy.for.PRF	CL10-clothes	CL4-families

yáazo)
CL4.their

'The visitors bought clothing for their families.'

However, the attentive reader will have noticed in the Chichewa data presented in the preceding sections that we do not always find a prosodic break before an object resumed by an object marker. We also do not always find an object marker resuming objects that are set off by a prosodic break. In (24a), for example, there is a break, but no object marker. Note the penult vowel lengthening and the continuation high tone on *ku msiiká*, the word before the dislocated object, confirming the prosodic phrase break in both (24a) and (24b)):

(24) Prosody and right dislocation in Chichewa (Bantu; author's elicitation notes)

a. [Context: Where did you buy the charcoal?]

((Ta-gula	*KU*	*MSIIKÁ)*	*ma-káala).*
we.PST-buy	LOC	CL3.market	CL6-charcoal

b.

((Ta-wá-gula	*KU*	*MSIIKÁ)*	*ma-káala).*
we.PST-CL6OBJ-buy	LOC	CL3.market	CL6-charcoal

'We bought the charcoal at the market.'

To support these claims about the lack of correlation between prosody and object marking, three representative pitch tracks are given below. Figures 1 and 2 illustrate the prosody for the two sentences in (25). Note that there is no obvious prosodic break following the verb and human object DP, in its base position, whether the verb is object-marked (as in (25b) or not (as in (25a)). Compare the length of the penult vowel in *njúuchí*, which does precede a break with the penult vowel in the verb in the two examples:

(25) a. without object marker
(Njúuchí) *(zi-na-lúmá* *a-leenje).*
CL10.bee CL10SBJ-PST-bite CL2-hunter

b. with object marker
(Njúuchí) *(zi-na-wá-lúma* *a-leenje).*
CL10.bee CL10SBJ-PST-CL2OBJ-bite CL2-hunter

'The bees bit the hunters.'

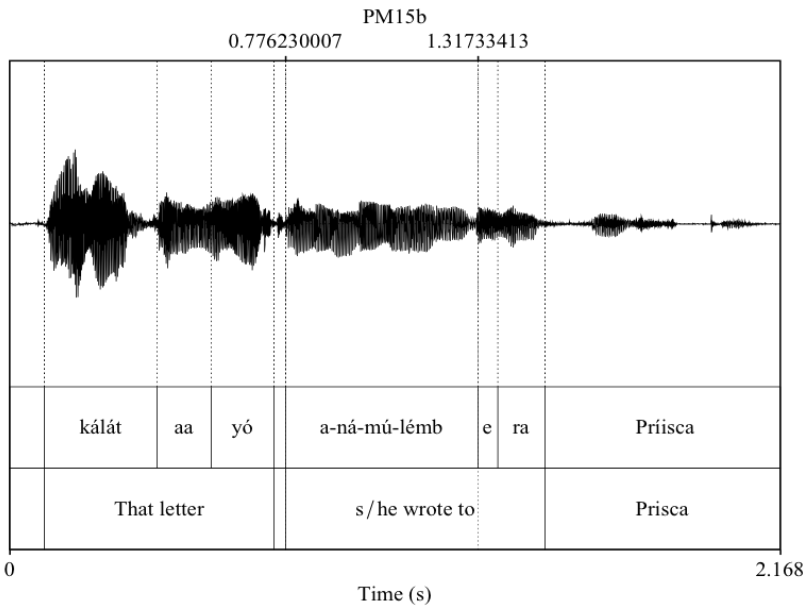


Figure 1: Example (25a), without object marker

And as shown by the pitch track in Figure 3, in the sentence in (26), there is a break setting off the overt object in preverbal position – it is clearly in a non-canonical position – yet we find no co-referential object marker on the verb. Instead, the in situ, focused object is resumed with an object marker. However, as we can see, the penult vowel of the verb is quite short, and there is no other evidence for a prosodic break following the verb. The postverbal object must be in its canonical, verb phrase-internal position. This

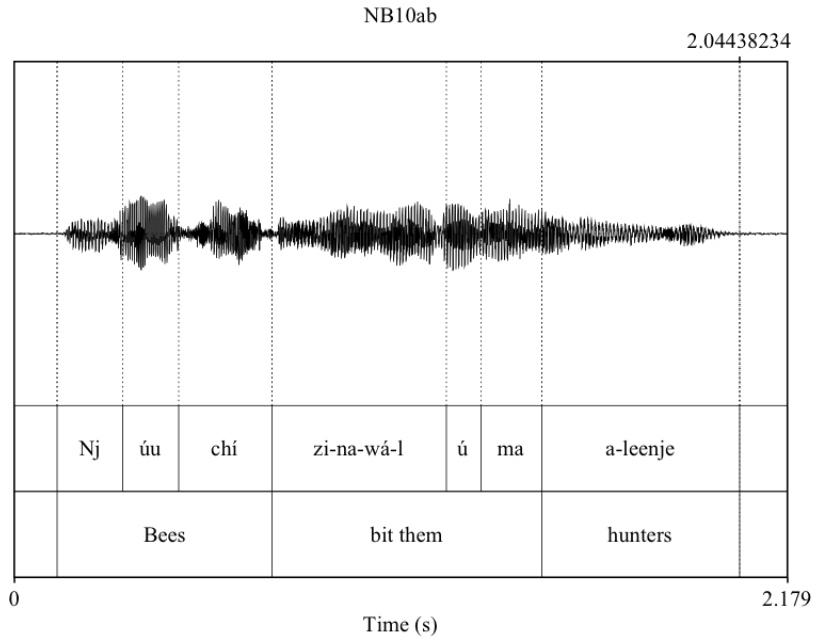


Figure 2: Example (25b), with object marker

is an especially striking piece of data confirming that humanness trumps other factors in conditioning object marking.

(26) [Context: 'Who did the teacher write the letter to?']
(Kálátaa-yó) *(a-ná-mú-lémbera* *PRÍISCA).*
CL9.letter-DEM CL1SBJ-PST-CL1OBJ-write.to CL1.Prisca
'That letter, s/he wrote to Prisca.'

To sum up this section, object marking in modern colloquial Chichewa fails all three of Bresnan & Mchombo's (1987) tests for purely anaphoric status. There is a striking tendency for object markers to co-occur with human objects, whatever their position. Object markers do not obligatorily occur, however, with non-human objects, whatever their position. Prosodic breaks do not systematically set off objects that are co-referential with object markers. Chichewa object marking is therefore not purely anaphoric. Rather, it is at Stage II in Creissels (2006)' terms (see (2)), and, moreover, shows differential object marking properties.

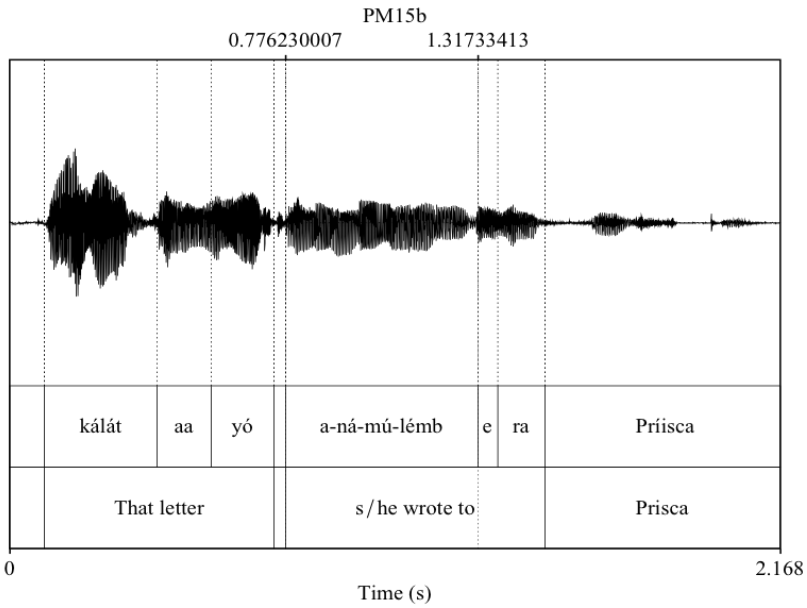


Figure 3: Example (26)

4 Implications for diachronic development

Although object marking in Chichewa no longer has a purely anaphoric function, the literature on the diachronic development of DOM systems from Givón (1976) onwards agrees that the agreement-like object marking shown in the modern colloquial Chichewa data most likely develops from the grammaticalization of anaphoric marking of topical objects. This section takes up two recent approaches to grammaticalization of object marking, Creissels (2006) and Dalrymple & Nikolaeva (2011). I show that neither straightforwardly accounts for the Chichewa data, and I propose an alternative, constraints-based approach.

4.1 Creissels (2006)

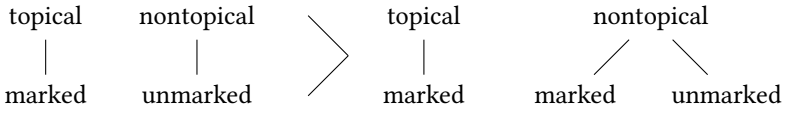
Creissels's (2006)' typology of the diachronic development of object marking given in (2) recognizes two end points – anaphor and agreement – in the diachronic development of object marking systems. These are his Stage I and Stage III, respectively. In Stage II, the intermediary stage, object marking retains anaphoric properties and also extends its functions to mark grammatical agreement. As the data shows, Chichewa does not fit into any of Creissels's (2006) three stages. The reason Chichewa poses a problem for this approach is the same one mentioned in discussing Swahili in §2.1, above. Pure Stage II Bantu languages are not found because this stage does not take into account the role of the topicality hierarchies (8) in conditioning the occurrence of the object marking with

a co-referential overt object. The stages are defined purely in terms of the morphosyntactic distribution of the object markers. This oversight in Creissels's (2006) typology is surprising. Work on Bantu and other languages – like Duranti (1979); Bentley (1994); Morimoto (2002); Aissen (2003), Riedel (2009), Marten & Kula (2012) and van der Wal (2015) – clearly establishes the role of the hierarchies in (8) in conditioning object marking. Indeed, much of the original work on the hierarchies in (8) from the early 80's investigated object properties in Bantu languages (e.g. Hyman & Hawkinson 1974; Duranti 1979; Hyman & Duranti 1982). And recent surveys of Bantu object marking (Morimoto 2002; Riedel 2009; Marten & Kula 2012; van der Wal 2015) confirm that one can classify object marking in different Bantu languages according to different cut off points along the topicality hierarchies. None of these authors report a Bantu language where object marking obligatorily indexes all indefinite non-animate entities (along with objects with features high in the hierarchies in (8)).[12] What is missing in Creissels's (2006) grammaticalization stages is an explicit formalization of the role of topicality features in triggering a transition from Stage I languages, where objects marking indexes topicalized objects, to Stage II languages, where objects with features high in the hierarchies in (8) (as well as topicalized objects) are marked.

4.2 Dalrymple & Nikolaeva (2011)

Chichewa is equally problematic for Dalrymple & Nikolaeva's (2011: 214–216) proposed grammaticalization paths for DOM.[13] In their approach, as in Creissels's (2006), the original situation is for only topical (i.e., clause-external) objects to be resumed with an object marker, while non-topical (clause-internal) ones are unmarked. (This is roughly equivalent to Creissels's (2006) Stage I.) DOM arises via two paths. Object marking can *spread* to nontopical objects with features that place them high on the hierarchies in (8): i.e., topic-worthy objects. This path, shown in (27), resembles Creissels's (2006) transition from Stage I to Stage II.

(27) Spreading of DOM Dalrymple & Nikolaeva (2011: 215)

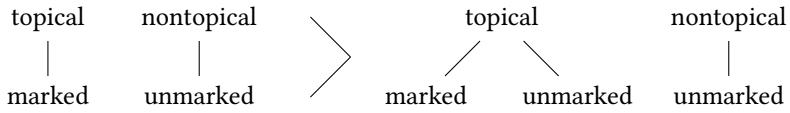


[12] As Marten & Kula (2012), following Stucky (1981) and van der Wal (2009) observe, Makhua represents an interesting case where further grammaticalization has occurred. Objects in class 1 and 2 (which is mainly occupied by human nouns) are marked whether they are human/animate or not. That is, the agreement class trumps semantic features like humanness in conditioning object marking.

[13] Most of Dalrymple & Nikolaeva (2011) thoughtful work demonstrates the role of information structure in conditioning object marking: objects are marked in many languages if they are secondary topics. I know of only one Bantu language where information structure has been claimed to directly condition marking of non-dislocated objects. As Bax & Diercks (2012) demonstrate, in situ objects in Manyika Shona are marked if they are [-Focus]. Since Chichewa and most other Bantu languages mark objects with particular semantic features, I discuss here only Dalrymple & Nikolaeva's (2011) approach to grammaticalization, not their general approach to object marking. See Iemmolo (2013; 2014) for a thoughtful critique of Dalrymple & Nikolaeva's (2011).

Dalrymple & Nikolaeva (2011: 215) suggest that spreading accounts for Bresnan & Mchombo's (1987) distinction between anaphoric and agreement function of object markers in Bantu languages: spreading leads to the development of agreement-like properties. However, their approach improves on both Bresnan & Mchombo (1987) and on Creissels (2006) by making explicit the role of the hierarchies in (8) in motivating the marking of only certain nontopicalized objects, leading to a DOM system. The other scenario, schematized in (28), is for object marking to narrow. In this scenario, only a subset of topical objects (those with features high on the topicality hierarchies in (8) come to be marked, while other objects – whether topical or nontopical – are unmarked:

(28) Narrowing of DOM Dalrymple & Nikolaeva (2011: 218)



Chichewa does not straightforwardly fit either of these scenarios, as object marking both spreads and narrows in Chichewa. Object marking spreads to nontopical objects, if they are human and therefore high on the topicality hierarchies in (8). Object marking also retracts from less topic-worthy objects, even if they are topical (i.e., in a position outside of the clause). A more general problem is that the second path – simple narrowing – is not consistent with the proposal that object marking in Bantu languages arises in stages along an anaphor-agreement continuum (Bresnan & Mchombo 1987; Creissels 2006; Givón 1976). Creissels's (2006) Stages II and III preclude the possibility of narrowing the object marking of anaphoric nominals without also spreading object marking to indicate grammatical agreement. And, indeed, I have not found any examples of simple narrowing in the literature on Bantu object marking. The assumption is that object marking by default tracks topicalized (dislocated) objects, while agreement-like marking is the more restricted innovation. (See e.g. Riedel 2009; Bax & Diercks 2012; Marten & Kula 2012.) However, narrowing of object marking subsequent to spread can be seen as a logical progression in the development of a grammatical agreement system from an anaphoric one. What is missing from Dalrymple & Nikolaeva's (2011) approach, then, is a way of placing their grammaticalization paths on an anaphor-agreement continuum.

4.3 An alternative

In this section, I propose an alternative account of the grammaticalization of object marking in Chichewa which combines aspects of both Creissels's (2006) and Dalrymple & Nikolaeva's (2011) approaches. Following Iemmolo (2013; 2014), I propose that in Chichewa (and other Bantu languages where object marking is conditioned by the topicality hierarchies) the object marker is reinterpreted as marking topic-worthiness rather than topic-hood. (Topic-worthy objects are ones with semantic features that are high in the topicality hierarchies.) Topic-worthy objects come to be marked, whether they

are topical or nontopical in information structure or syntactic terms. Less topic-worthy objects are not obligatorily marked, even if they are topical. That is, topic-worthiness trumps both information structure and syntax in triggering the development of Bantu agreement-like object marking systems from purely anaphoric agreement systems.[14]

I formalize these observations in terms of the syntactic and semantic constraints in (29). The syntactic ones are adapted from observations in work like Bresnan & Mchombo (1987), Morimoto (2002), Creissels (2006) concerning the distribution of object markers. The semantic ones are inspired by work like Aissen (2003), Dalrymple & Nikolaeva (2011), Iemmolo (2013; 2014) and Morimoto (2002) on the role of topic-worthiness in defining DOM.[15]

(29) Constraints defining the development of DOM from a topic-marking system
syntactic[16]

a. *[Index_i, NP_i]$_{vP}$:
Grammatical agreement with an overt in situ object nominal violates this constraint, as object marking with an overt in situ object (if identical in form to anaphoric use of object marker) violates the condition that there should be only one expression of the object in the VP.

b. Max argument/VP:
Argument roles in the input VP must be realized overtly in the output VP (Morimoto 2002). This constraint is violated if a topicalized object is not resumed with an object marker.

semantic

c. *øIndex[+TW]:
Topic-worthy [+TW] objects should be indexed by object marking. Aissen (2003)
(Topic-worthiness is defined by the topicality hierarchies in (8).)

d. *Index[-TW]:
Non-topic worthy [–TW] objects should not be indexed by object marking.

Ranking the constraints in Optimality Theoretic style tableaux allows one to use a factorial typology to formalize the steps in the development of Bantu DOM systems and to formalize the relative importance of each constraint in defining stages along a grammaticalization path.

[14] As work since Comrie (1981; 1989) proposes, marking highly topic-worthy objects plausibly has a disambiguating function, since nominals high in the topicality hierarchy are canonically subjects, rather than objects. See Witzlack-Makarevich & Seržant (2018 [this volume]) for further discussion.

[15] See Morimoto (2002) and van der Wal (2015) for recent proposals formalizing the agreement-anaphor continuum for Bantu object marking in theoretical syntax frameworks. It is beyond the scope of this paper to critique these formal alternatives.

[16] As a reviewer points out, the combined syntactic constraints in (29a), (29b) bear a resemblance to the Theta Criterion in generative grammar Chomsky (1981): "Each argument bears one and only one theta-role, and each theta-role is assigned to one and only one argument."

4.3.1 Stage I: purely anaphoric use of OM

At Creissels's (2006) and Dalrymple & Nikolaeva's (2011) initial stage, object markers have a purely anaphoric function: object markers resume co-referential clause-external objects. This is optimal if the syntactic constraints in (29) conditioning the distribution of object marking outrank the semantic constraints, as shown in Tableau (30b), using schematized syntactic structures.

(30) a. *[Index$_i$, NP$_i$]$_{vP}$ » Max arg(ument)/VP » *øIndex[+TW] » *Index[-TW]

b.

		*[Index$_i$, NP$_i$]$_{vP}$	Max arg/VP	*øIndex[+TW]	*Index[-TW]
☞	1. NP$_i$ [S [V- OM$_i$]				*
	2. NP$_i$ [S [V- øi]		*!	*	
☞	3. [S [V- OM$_i$ NP$_i$]	*!			*
	4. [S [V NP$_i$]			*	

Object marking is optimal when an object NP is dislocated: this is shown by candidate (30b)-1. Omitting object marking to resume the dislocated object, as in candidate (30b)-2, violates Max arg(ument)/VP, the constraint requiring an overt realization of the object within the VP. This ranking of the constraints defines agreement as non-optimal, however. As we can see, candidate (30b)-3, with a coreferential object marker resuming an object within the VP, violates *[Index$_i$, NP$_i$]$_{vP}$.

4.3.2 Step 1 in the development of DOM

The first step in the development of a DOM system involves *spreading* of object marking to non-topicalized objects which are semantically topic-worthy [+TW]. This becomes optimal when the semantic constraint requiring marking of [+TW] objects (29) comes to outrank the two syntactic constraints (29a)–(29b); re-ranked constraints are bolded:

(31) DOM of in situ objects is optimal with ranking,
*øIndex[+TW] » *[Index$_i$, NP$_i$]$_{vP}$ » Max arg(ument)/VP » *Index[-TW]

Swahili exemplifies this kind of Bantu object marking system. Recall from §2.2 that in Swahili, we find object marking with all topicalized objects and grammatical agreement only with [+TW] objects. Tableaux (32) exemplify this next step in the DOM grammaticalization path.

(32) a. Object NP is [+TW]

		*øIndex[+TW]	*[Index$_i$, NP$_i$]$_{vP}$	Max arg/VP	*Index[-TW]
☞	1. NP$_i$ [S [V-OM$_i$]				
	2. NP$_i$ [S [V- øi]		*!	*	
☞	3. [S [V- OM$_i$ NP$_i$]		*		
	4. [S [V NP$_i$]	*!			

b. Object NP is [-TW]

		*øIndex[+TW]	*[Index$_i$, NP$_i$]$_{vP}$	Max arg/VP	*Index[-TW]
☞	1. NP$_i$ [S [V-OM$_i$]				*
	2. NP$_i$ [S [V- øi]			*!	
	3. [S [V- OM$_i$ NP$_i$]		*!		*
☞	4. [S [V NP$_i$]				

Tableaux (32a) and (32b) demonstrate that the anaphoric use of object marking remains optimal both when a [+TW] object is topicalized and when a [–TW] object is topicalized. This context is illustrated by candidates (32a)-1 and (32b)-1. Candidate (32a)-3 shows that when the semantic constraint ***øIndex[+TW]** is high ranked, object marking in the agreement context is optimal for a [+TW] object. However, object marking remains non-optimal in the agreement context for a [–TW] object, as shown by candidate (32b)-3.

4.3.3 Step 2: modern colloquial Chichewa

As noted above, it is problematic to account for DOM in modern colloquial Chichewa using Dalrymple & Nikolaeva's (2011) grammaticalization paths, as we find both *spreading* of marking (to non-topical topic-worthy objects) and *narrowing* of marking from non-topic worthy topicalized objects. The constraint-based approach developed here can straightforwardly formalize this second step by ranking the second semantic constraint (29) higher than the second syntactic constraint (29b):

(33) *øIndex[+TW] » *[Index$_i$, NP$_i$]$_{vP}$ » *Index[-TW] » Max arg(ument)/VP

This is exemplified in Tableaux (34):

(34) a. Object NP is [+ TW]

		*øIndex[+TW]	*[Index$_i$, NP$_i$]$_{vP}$	*Index[-TW]	Max arg/VP
☞	1. NP$_i$ [S [V-OM$_i$]				
	2. NP$_i$ [S [V- øi]	*!			*
☞	3. [S [V- OM$_i$ NP$_i$]		*		
	4. [S [V NP$_i$]	*!			

b. Object NP is [-TW]

		*øIndex[+TW]	*[Index$_i$, NP$_i$]$_{vP}$	*Index[-TW]	Max arg/VP
☞	1. NP$_i$ [S [V-OM$_i$]			*!	
	2. NP$_i$ [S [V- øi]				*
☞	3. [S [V- OM$_i$ NP$_i$]		*!	*	
	4. [S [V NP$_i$]				

Tableaux in (34a) and (34b) show that with this constraint ranking, anaphoric use of object marking is only optimal when a [+TW] object NP is dislocated: candidate (34a)-1. Candidate (34b)-1, with object marking on a dislocated [-TW] object violates the semantic constraint, *Index[-TW]. Similarly, object marking is also optimal in the agreement

context only with a [+TW] object: candidate (34a)-3. Object marking on a [-TW] object in the agreement context, candidate (34b)-3, violates the syntactic constraint, *[Index$_i$, NP$_i$]$_{vP}$.[17]

4.3.4 Accounting for gaps

A further advantage of this constraints-based approach is that it can account for gaps in the cross-Bantu object marking data. As noted above, we do not find the simple narrowing of marking of topicalized object which Dalrymple & Nikolaeva (2011) propose as an alternative grammaticalization path, as schematized in (28). Indeed, we noted that if DOM in Bantu languages results from change along an anaphor-agreement continuum, we do not expect simple narrowing, and we would want to account for this. What I propose is that this direction of change falls out if the two syntactic constraints (35a) and the two topicality-sensitive constraints (35b) have the harmonic alignment rankings shown in (35):

(35) Harmonic alignment
   a. *[Index$_i$, NP$_i$]$_{vP}$ » Max arg(ument)/VP
   b. *øIndex[+TW] » *Index[-TW]

A harmonic alignment ranking cannot be reordered to define a typology (Aissen 2003; Morimoto 2002). As we can see in Tableaux in (37), narrowing without spreading (cf. (27) and (28), above) is only optimal given the ranking in (36), which violates the harmonic ranking of the semantic constraints defined in (35b).

(36) *[Index$_i$, NP$_i$]$_{vP}$, *Index[-TW] » Max arg(ument)/VP » *øIndex[+TW]

(37) a. Object NP is [+TW]

		*[Index$_i$, NP$_i$]$_{vP}$	*Index[-TW]	Max arg/VP	*øIndex[+TW]
☞	1. NP$_i$ [S [V-OM$_i$]				
	2. NP$_i$ [S [V- øi]			*!	*
	3. [S [V- OM$_i$ NP$_i$]	*!			
☞	4. [S [V NP$_i$]				*

b. Object NP is [-TW]

		*[Index$_i$, NP$_i$]$_{vP}$	*Index[-TW]	Max arg/VP	*øIndex[+TW]
	1. NP$_i$ [S [V-OM$_i$]		*!		
☞	2. NP$_i$ [S [V- øi]			*	
	3. [S [V- OM$_i$ NP$_i$]	*!	*		
☞	4. [S [V NP$_i$]				

Comparing the first candidates in Tableaux (37a) and (37b) allows one to see that this constraint ranking optimizes narrowing. Anaphoric use of object marking is optimal

[17] As a reviewer points out, the analysis developed here does not account for the variation we find in Chichewa. Object marking is possible with all dislocated objects, even non-topic-worthy ones. The DOM restriction is therefore a tendency, not an absolute. How best to formalize this variation is a topic for future research.

only when a [+TW] object is dislocated, as in candidate (37a)-1, but not when a [–TW] object is dislocated, as in candidate (37b)-1. Note that candidate (37b)-1 violates the semantic constraint, *Index[-TW]. Object marking in the agreement context is not optimal, whether the object is topic-worthy or not, as this violates the syntactic constraint, *[Index_i, NP_i]$_{vP}$. Candidates (37a)-3 and (37b)-3 illustrate this. While this ranking clearly can define narrowing, it violates the harmonic ranking of the semantic constraints. Finally, the constraints-based approach can explain why Creissels (2006) says he finds no examples of his Stage III: a purely grammatical agreement system for object marking which ignores the topicworthiness of the object. To make this kind of agreement system optimal, we must introduce a new semantic constraint, *øIndex[TW], which clearly contradicts the better motivated constraint: *Index[–TW]. This new constraint, highly ranked, optimizes object marking on both topicworthy and non-topicworthy objects in the agreement context:

(38) *øIndex[+TW] » *øIndex[-TW] » *[Index_i, NP_i]$_{vP}$ » Max arg(ument)/VP » *Index[-TW]

However, as Tableau (39) exemplifies, this same ranking cannot define Creissels's (2006) Stage III, because it incorrectly optimizes object marking to resume topicalized objects:

(39) Object NP is either [+TW] or [-TW]

	*øIndex[+TW]	*øIndex[-TW]	*[Index_i, NP_i]$_{vP}$	Max arg/VP	*Index[-TW]
☞ a. NP_i [S [V-OM_i]				*	
b. NP_i [S [V- øi]	*!	*		*	*
☞ c. [S [V- OM_i NP_i]					*
d. [S [V NP_i]	*!	*			

Tableau (39) shows that these constraints and this ranking optimize agreement with any co-referential object, whether topicalized (candidates (39)-a and (39)-b) or in a grammatical agreement context (candidates (39)-c and (39))-d. Stage III, therefore, is not found because it is not optimal under any ranking of the proposed constraints that define a grammaticalization path leading to a DOM system.

5 Conclusion

As we have seen, object markers are not "purely anaphoric" in modern colloquial Chichewa. They are also not pure agreement markers, as they occur only variably (not obligatorily), and they only co-occur with clause-internal human objects. Rather, their distribution conforms to Bentley's (1994), Morimoto's (2002), Riedel's (2009), Marten & Kula's (2012)'s and van der Wal's (2015) observation that the occurrence of grammatical agreement-like object markers in Bantu languages is conditioned by the hierarchies in (8). As a result, in Chichewa, as in many Bantu languages, we find a DOM system. Following Iemmolo (2013; 2014) I have proposed that the grammaticalization path towards DOM is for object markers to come to index not just topic-hood (an information

structural and/or syntactic property) but also topic-worthiness (a semantic property). In Chichewa, as I have shown, topic-worthiness is quite systematically indexed. This observation forms the basis for a constraints-based account of the development of DOM in Bantu languages, which improves on Creissels (2006) by incorporating the notion of topic-worthiness as a trigger for the movement from anaphoric agreement to grammatical agreement. It improves on Dalrymple & Nikolaeva (2011) by providing a way of formalizing the anaphor-agreement continuum that is central to the discussion of the development of DOM in Bantu languages. It is hoped this proposal provides a useful basis for a more comprehensive study of the DOM properties of object marking in Bantu languages.

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Abbreviations

1	first person	LOC	locative
2	second person	OBJ	object
3	third person	PL	plural
CL	noun class concord affixes (e.g. cl1, cl2, etc.)	POSS	possessive
		PRF	perfect
COP	copula	PROG	progressive
DEM	demonstrative	PST	past
EMPH	emphasis	Q	question marker
FUT	future	REL	relative
FV	final vowel	SBJ	subject
HAB	habitual	SG	singular
INF	infinitive		

References

Aissen, Judith. 2003. Differential object marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21(3). 435–483.

Bax, Anna & Michael Diercks. 2012. Information structure constraints on object marking in Manyika. *Southern African Linguistics and Applied Language Studies* 30(2). 185–202.

Bearth, Thomas. 2003. Syntax. In Derek Nurse & Gérard Philippson (eds.), *The Bantu languages*, 121–142. London: Routledge.

Beaudoin-Lietz, Christa, Derek Nurse & Sarah Rose. 2004. Pronominal object marking in Bantu. In Akin Akinlabi & Oluseye Adesola (eds.), *Proceedings of the 4th World Congress of African linguistics, New Brunswick 2003*, 175–188. Cologne: Köppe.

Bentley, Mayrene. 1994. *The syntactic effects of animacy in Bantu languages*. Bloomington, IN: Indiana University dissertation.

Bresnan, Joan & Sam Mchombo. 1987. Topic, pronoun, and agreement in Chichewa. *Language* 63(4). 741–782.

Buell, Leston Chandler. 2005. *Issues in Zulu verbal morphosyntax*. Los Angeles: University of California at Los Angeles dissertation.

Cheng, Lisa Lai-Shen & Laura J. Downing. 2009. Where's the topic in Zulu? *The Linguistic Review* 26(2–3). 207–238.

Cheng, Lisa Lai-Shen & Laura J. Downing. 2012. Against FocusP: Evidence from Durban Zulu. In Ivona Kučerová & Ad Neeleman (eds.), *Contrasts and positions in information structure*, 247–266. Cambridge: Cambridge University Press.

Cheng, Lisa Lai-Shen & Laura J. Downing. 2016. Phasal syntax = cyclic phonology? *Syntax* 19(2). 156–191.

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

Comrie, Bernard. 1981. *Language universals and linguistic typology*. Chicago: University of Chicago Press.

Comrie, Bernard. 1989. *Language universals and linguistic typology*. 2nd edn. Chicago: University of Chicago Press.

Creissels, Denis. 2006. A typology of subject and object markers in African languages. In F. K. Erhard Voeltz (ed.), *Studies in African linguistic typology*, 43–70. Amsterdam: John Benjamins.

Dalrymple, Mary & Irina Nikolaeva. 2011. *Objects and information structure*. Cambridge: Cambridge University Press.

Downing, Laura J. 2010. Prosodic phrasing in relative clauses: A comparative look at Zulu, Chewa and Tumbuka. In Karsten Legère & Christina Thornell (eds.), *Bantu languages: Analyses, description and theory*, 17–29. Cologne: Rüdiger Köppe.

Downing, Laura J. & Larry M. Hyman. 2016. Information structure in Bantu languages. In Caroline Féry & Shinichiro Ishihara (eds.), *Oxford handbook of information structure*, 790–813. Oxford: Oxford University Press.

Downing, Laura J. & Al Mtenje. 2011. Prosodic phrasing of Chichewa relative clauses. *Journal of African Languages and Linguistics* 32(1). 65–111.

Duranti, Alessandro. 1979. Object clitic pronouns in Bantu and the Topicality Hierarchy. *Studies in African Linguistics* 10(1). 31–45.

Duranti, Alessandro & Ernest Rugwa Byarushengo. 1977. Haya grammatical structure. In Ernest Byarushengo, Alessandro Duranti & Larry M. Hyman (eds.), *Southern california occasional papers in linguistics*, vol. 6, 45–71. Department of Linguistics, University of Southern California.

Givón, Talmy. 1976. Topic, pronoun, and grammatical agreement. In Charles N. Li (ed.), *Subject and topic*, 149–188. New York: Academic Press.

Heine, Bernd. 1976. *A typology of African languages*. Berlin: Dieter Reimer.

Henderson, Brent M. 2006. *The syntax and typology of Bantu relative clauses*. Urbana: University of Illinois at Urbana-Champaign dissertation.

Hyman, Larry M. & Alessandro Duranti. 1982. On the object relation in Bantu. In Sandra A. Thompson & Paul J. Hopper (eds.), *Studies in transitivity*, 217–239. New York: Academic Press.

Hyman, Larry M. & Anne Hawkinson. 1974. Hierarchies of natural topics in Shona. *Studies in African Linguistics* 5(2). 147–170.

Iemmolo, Giorgio. 2013. Symmetric and asymmetric alternations in direct object encoding. *STUF – Language Typology and Universals* 66. 378–403.

Iemmolo, Giorgio. 2014. Differential object marking: An overview. University of Zurich Ms.

Kanerva, Jonni. 1990. *Focus and phrasing in Chichewa phonology*. New York: Garland Publishing.

Kisseberth, Charles W. & Mohammad Imam Abasheikh. 1977. The object relationship in Chi-Mwi: Ni, A Bantu language. In Peter Cole & Jerrold M. Sadock (eds.), *Grammatical relations*, 179–218. New York: Academic Press.

Marten, Lutz & Nancy Kula. 2012. Object marking and morphosyntactic variation in Bantu. *Southern African Linguistics and Applied Language Studies* 30(2). 237–253.

Mchombo, Sam. 2004. *The syntax of Chichewa*. Cambridge: Cambridge University Press.

Meeussen, Achille E. 1967. Bantu grammatical reconstructions. *Africana Linguistica* 3. 79–121.

Morimoto, Yukiko. 2002. Prominence mismatches and differential object marking in Bantu. In Miriam Butt & Tracy Holloway King (eds.), *The Proceedings of the LFG'02 Conference*, 292–314. Stanford, CA: CSLI Publications.

Nurse, Derek. 2003. Aspect and tense in Bantu languages. In Derek Nurse & Gérard Philippson (eds.), *The Bantu languages*, 90–102. London: Routledge.

Riedel, Kristina. 2009. *The syntax of object marking in Sambaa: A comparative Bantu perspective*. Leiden: Universiteit Leiden dissertation.

Schadeberg, Thilo. 1995. Object diagnostics in Bantu. In Emmanuel 'Nolue Emenanjo & Ozo-Mekuri Ndimele (eds.), *Issues in African languages and linguistics: Essays in honour of Kay Williamson. Special issue of The Nigerian Language Studies*, 173–180. Aba: National Institute for Nigerian Languages.

Seidl, Amanda & Alexis Dimitriadis. 1997. The discourse function of object marking in Swahili. In Kora Singer, Randall Eggert & Gregory Anderson (eds.), *Proceedings of the 33rd Annual meeting of the Chicago Linguistics Society*, 373–389.

Stucky, Susan. 1981. *Word order variation in Makua: A phrase structure grammar analysis*. Urbana: University of Illinois at Urbana-Champaign dissertation.

van der Spuy, Andrew. 1993. Dislocated noun phrases in Nguni. *Lingua* 90(4). 335–355.

van der Wal, Jenneke. 2009. *Word order and information structure in Makhuwa-Enahara*. Leiden: University of Leiden dissertation.

van der Wal, Jenneke. 2015. Bantu object clitics as defective goals. *Revue roumaine de linguistique, LX* 2–3. 277–296.

Witzlack-Makarevich, Alena & Ilja A. Seržant. 2018. Differential argument marking: Patterns of variation. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *Diachrony of differential argument marking*, 1–40. Berlin: Language Science Press. DOI:10.5281/zenodo.1228243

Zeller, Jochen. 2012. Object marking in isiZulu. *Southern African Linguistics and Applied Language Studies* 30(2). 219–235.

Zerbian, Sabine. 2006. *Expression of information structure in the Bantu language Northern Sotho*. Berlin: Humboldt University of Berlin dissertation.

Chapter 3

The evolution of differential object marking in Alor-Pantar languages

Marian Klamer
Leiden University

František Kratochvíl
Palacký University, Olomouc

This paper investigates the evolution of Differential Object Marking (DOM) in Abui and Teiwa, two Papuan languages of the Alor-Pantar family in Eastern Indonesia. In both languages, reflexes of the same proto-morpheme are used in the differential marking of P (the non-agentive argument in transitive constructions), but the languages contrast in the way Ps are differentiated. We compare the synchronic DOM patterns of Abui and Teiwa with each other as well as with the DOM patterns we reconstruct for their shared ancestor. We establish how different patterns of DOM in this family have evolved over time, and which semantic and morphological changes occurred in the process.

In their morphological expression, there are two strategies by which P's are differentiated: (i) the asymmetrical strategy involves an opposition between P as either a verbal prefix or a free nominal, and (ii) the symmetrical strategy where the choice of a P-prefix is variable depending on the semantics of P. Both strategies are used in both Teiwa and Abui, but the symmetrical strategy involves a choice between two different prefixes in Teiwa and five different prefixes in Abui.

Different factors trigger DOM in both languages: in Teiwa it is mostly based on the inherent properties (animacy) of P, while in Abui there are many other triggers besides the animacy of P, including the affectedness relation between the action and the P referent and the inflectional class of the verb. Furthermore, Abui has developed an extra, third, formal strategy to differentiate human Ps from non-human ones in a serial verb construction.

The alignment system we reconstruct for the proto-language was semantic. It evolved into an accusative alignment system in Teiwa, but was retained and further complexified in Abui. Alignment systems are not static: their forms and triggers may be modified and complexified over time.

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1 Introduction

This paper describes and compares the differential object marking in Teiwa (Klamer 2010a) and Abui (Kratochvíl 2007; 2014a; Kratochvíl & Delpada 2015b), two members of the AP language family of Papuan[1] languages spoken in eastern Indonesia (Figure 1–3). We show that different members of a language family may show different patterns of Differential Object Marking (DOM) that are triggered by different factors and involve different forms, and that the evolutionary path of DOM has both stable and unstable features.

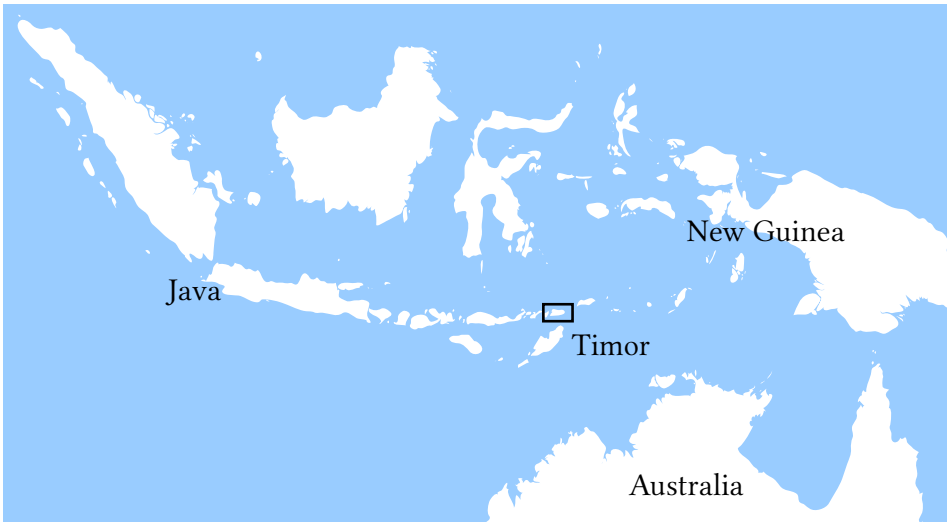

Figure 1: The islands of Timor, Alor and Pantar in Indonesia

After an introduction to the history and typology of the Alor-Pantar (AP) language family (§1), we present evidence that Proto-AP (the ancestor language of Teiwa and Abui) treated both transitive objects (P) and intransitive subjects (S) in a split fashion, and we list the morphological forms involved in the proto-splits (§2). In §3, we describe the formal and semantic characteristics of DOM in Teiwa, pointing out the elements of the proto-DOM system that have been retained, changed and lost in Teiwa. In §4, we similarly describe DOM in Abui and compare it to the proto-system.

By studying patterns of DOM in these two related languages and comparing them with their shared ancestor, we can establish how different patterns of DOM evolve over time, and which semantic and morphological changes occur in the process. For the descriptive data presented in this paper, we build on our own publications on Teiwa and Abui, as well as unpublished fieldwork data included in the respective corpora of Teiwa and Abui.[2]

[1]Note that the term 'Papuan' is not a genealogical term, but rather refers to a cluster of several dozens of unrelated language families that are spoken on or close to the Papuan mainland, and are not Austronesian.

[2]These corpora are available as part of the Laiseang corpus in The Language Archive (TLA) at the Max Planck Institute for Psycholinguistics in Nijmegen http://tla.mpi.nl.

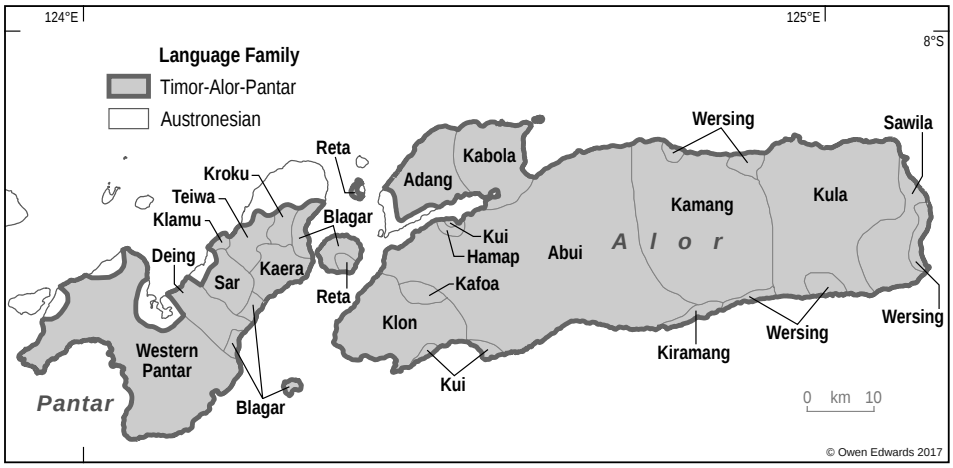

Figure 2: The Papuan languages of Timor (in the areas that are left white, Austronesian languages are spoken)

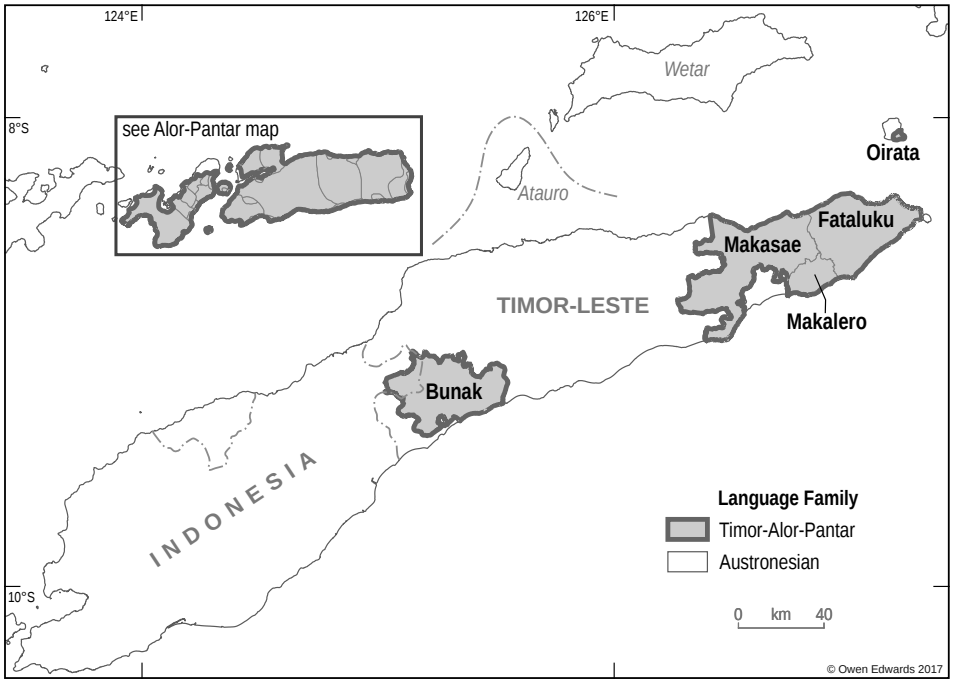

Figure 3: The languages of Alor and Pantar

For the typological component of the paper, we have used information on argument encoding in the AP languages that has been published elsewhere (e.g. Klamer 2010b,c,2017; Kratochvíl 2011, 2014a; Klamer & Kratochvíl 2012; Klamer & Schapper 2012; Fedden et al. 2013; 2014, Kratochvíl & Delpada 2015a; 2015b). For the historical reconstruction of the DOM system in Proto-AP, we draw on published historical reconstruction work on the AP family (Holton et al. 2012; Holton & Robinson 2014; 2017).

2 Introduction to the history and typology of Alor-Pantar languages

Together with the Papuan languages spoken on the neighbouring island of Timor, the AP sub-family constitute the larger Timor-Alor-Pantar family counting about 30 languages (Figure 2–4) (Holton et al. 2012; Holton & Robinson 2014; 2017; Robinson & Kratochvíl 2014; Schapper 2014; Schapper et al. 2017). An indication of the position of Teiwa and Abui in the Timor-Alor-Pantar family tree is shown in Figure 4. Based on phonological innovations (Holton et al. 2012), we assert that Teiwa and Abui share a common ancestor, Proto-AP, but are not direct sister languages, as it is possible to construct an intermediate node (labelled Proto-Alor in Figure 4) between Teiwa and Abui.

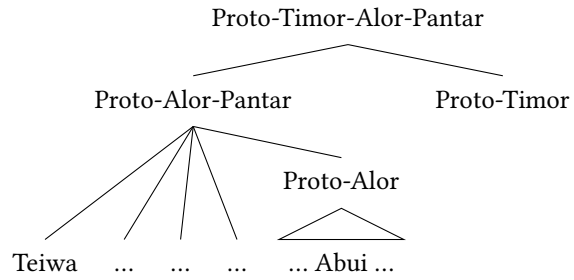

Figure 4: The position of Teiwa and Abui in the Timor-Alor-Pantar family tree (derived from Holton et al. 2012: 114, Fig. 2).

Basic (pragmatically unmarked, declarative) transitive clauses in the AP languages are verb-final, and Agent-Patient-Verb (APV) and Subject-Verb (SV) is the basic constituent order attested in all the modern languages.[3] Objects in AP languages are expressed with free nominal constituents (NPs or pronouns), which exist alongside verbal affixes that index person and number of verbal arguments. The AP languages are all head-marking and show a preponderance to index P over S/A (Klamer 2017: 20). This pattern is typologically extremely rare, occurring in only 7% of the 378 languages surveyed by (Siewierska 2013), yet it is universally found in the AP family. In other words, in AP, a person-number

[3]The notions A, S and P are used here as comparative concepts, where A is the most Agent-like argument of a transitive clause and P the least Agent-like, while S is the single argument of an intransitive verb (Comrie 1989).

prefix on a verb typically indexes the object (P), while subjects (S/A) may also be indexed but are more typically expressed as free forms (pronouns or NPs).

Differential Object Marking (DOM) is seen here as 'the non-uniform grammatical marking of objects which occurs within one and the same language, with objects of one and the same verb' (Dalrymple & Nikolaeva 2011: 1). The grammatical marking of objects in AP languages involves differential patterns of object indexing on verbs (Iemmolo 2011), and in this respect is crucially different from differential marking of arguments by case marking on the noun phrase. In the AP family, nouns are never marked for case, and alignment is always defined relative to the pronominal indexing of the verb.

Other crucial differences between the AP languages and the well-known European languages include the following. First, AP languages have few, if any, tri-valent (ditransitive) verbs. Instead of having a predicate with three arguments, two of which are object-like, the languages use a strategy where serial verb constructions express events which involve more than two participants. Second, the object (P) of a bi-valent verb in AP languages can express a multitude of semantic roles: a P may be a semantic patient, recipient, goal, benefactive, or source. This is illustrated for Teiwa in (1a),[4] where P is a patient; in (1b), where the P of bi-valent *-an* is a recipient, in (1c), where the P of *-mian* 'put at' is a goal; in (1d), where the P of *-lal* 'show' is a benefactive, and in (1e), where the P of *-umbangan* 'ask (something) from someone' is a source. Similar observations can be made for Abui, see (10a)–(10e) below.

(1) Teiwa (Klamer 2010a: 114, 169, 334–335, fieldnotes, TSS: 001)

a. *Sematar* *na* ***h-ua'***.
in.a.moment(IND) 1SG 2SG-hit
'I'll hit you!'

b. *Uy* *ga'an* *u* *sen* *ma* *n-oma'* ***g-an***.
person DEM DIST money come 1SG.POSS-father 3SG-give
'That person gives my father money.'

c. *Ɉadi* *hala* *biar* *kriman* *la* *pin* *aria'* *ma* ***ni-mian***...
so others children small FOC hold arrive come 1PL-put.at
'So other people brought some small children here and gave them to us…'

d. *Yitar* *ga-qau* *ma* ***na-lal-an***.
road 3SG.POSS-good come 1SG-show-REAL
'[You] show me the right way.'

e. *A* *daa* ***n-um-bangan***.
3SG ascend 1SG-APPL-ask.for
'He comes up to ask [sth.] from me' or 'He comes up to ask me [for/about sth.].'

[4] Orthographic conventions used in this article: *x* = /ħ/, *q* = /q/, *'* =/ʔ/, and a double vowel symbol stands for a long vowel.

Note that in (1b), (1c) and (1d) the theme participants (*sen* 'money', *biar kriman* 'small children', *yitar gaqau* 'right way') are introduced with a separate verb (*ma* 'come').[5] This verb occurs in a serial verb construction with a second verb in clause final position.[6] The second verb carries the P-prefix. Homologous affixes combine with nouns to index possessors: examples include *n-oma* '1SG.POSS-father' in (1b) and *ga-qau* '3SG.POSS-good' in (1d).

3 Differential object marking in Proto-Alor-Pantar

Pronouns and pronominal indexes are known to belong to the most stable and archaic part of the lexicon (Filimonova 2005; Heine & Song 2011a,b). Given their stability, pronouns have been used to suggest deep genetic relationships (Nichols & Peterson 2013). The morpho-syntactic patterns attested in the modern AP languages regularly involve morphemes reflecting forms that are reconstructable up to the ancestor language of the family, Proto-AP.

Table 1 lists the reconstructed pronoun forms (Holton et al. 2012; Robinson & Kratochvíl 2014; Holton & Robinson 2017: 170). In AP pronouns, initial consonants encode

[5] This function of Teiwa *ma* is further described in Klamer (2010a,b).

[6] Example (1c) involves another serial verb (*pin aria* 'arrive holding something'). We will not discuss serialization in Teiwa or Abui here; see the respective grammars for further information.

Table 1: Reconstructed forms for A, P, and Possessor in Proto-Alor-Pantar

	A free pronoun	**P prefix**	**Possessor prefix**
1SG	**na(N)*[a]	**na-*	
2SG	**a(N)*	**(h)a-*	
3	**ga(N)*	**ga-*[b]	**ge-*[c]
DISTR		**ta-*	
1PL.INC	**pi(N)*	**pi-*	
1PL.EXC	**ni(N)*	**ni-*	
2PL	**i(N)*	**(h)i-*[d]	

[a] *N* represents a nasal unspecified for place.

[b] Holton & Robinson (2017) reconstruct two separate third person prefixes, of which the singular is **ga-* and the plural **gi-*.

[c] Proto-AP may also have had possessor prefixes for other persons but only the third person form is reconstructed so far. Possible reconstructed forms would be **ne-* '1SG', **(h)e-* '2SG', **te-* 'DISTR'. In the plural, the vowel distinction was likely neutralized.

[d] Robinson & Kratochvíl (2014) do not reconstruct the initial consonant of this prefix as optional, because of the regular reflex of Proto-AP *h in Western Pantar and Sar.

person features, while theme vowels encode number features (/a/ singular, /i/ plural) and possession (/e/).[7]

In addition to reconstructing the form of the Proto-AP prefixes we can also reconstruct some of the Proto-AP bi-valent verbs as bound forms, and others as unbound. We reconstruct a verb as bound when that has a P-prefix in daughter languages across the family, while a verb is reconstructed as unbound when all its modern reflexes lack a P-prefix. The reconstructed verbs are given in Table 2.

Table 2: Reconstructed bi-valent verbs in Proto-Alor-Pantar (Holton et al. 2012; Holton & Robinson 2017; Schapper et al. 2017; Klamer in press).

With P-prefix		Without P-prefix	
Proto-AP verb	**Meaning**	**Proto-AP verb**	**Meaning**
**-ten*	wake up someone	**tapai*	pound, pierce
**-wel*	bathe someone	**mi*	be in, be at
**-ena*	give to someone	**magi*	hear
**-asi*	bite someone (of dogs)	**(ta)ki*	bite (food?)
		**nai*	eat
		**med*	take
		**kabar*	scratch
		**tiari(n)*	close[a]

[a]Holton & Robinson (2017: 75) reconstruct 'close' with a prefix. We find no evidence for this in a larger dataset.

In other words, Proto-AP encoded its Ps in a split fashion: certain verbs indexed P using a pronominal prefix, other verbs used (only) a free form to express P. Even with the limited evidence these verbs provide us with, it is already possible to see that this split in P-marking probably had a semantic motivation. For the reconstructed verbs with a P-prefix, the prefix likely indexed a human/animate referent, as waking up and bathing someone are activities applied to a human object. Also, across the AP family, the (single) object of the verb 'give' is always a human referent (the P-prefix always indexes a recipient), while the theme (=the thing given) is encoded as either a separate oblique constituent or with its own predicate, using a serialization strategy (Klamer & Schapper 2012).

In contrast, the verbs that are reconstructed without a P-prefix such as 'be in, be at', 'eat', and 'take' seem to typically have an inanimate P. The object of the verb 'scratch' is typically a surface (which may or may not be a human skin). The verb 'pound' typically

[7]Proto-AP **ta-* is grouped with the singular forms in Table 1 because it carries the singular theme vowel /a/. **ta* has a common or impersonal referent (cf. *one* in English '*One* should consider this'), and its reading is often distributive or reflexive ('each one', 'each other').

refers to pounding food objects (e.g. rice or corn). The two verbs for 'bite' may have been split in use depending on the animacy of the object. And in the AP languages, the verb 'hear' does not typically take a personal object (as in *I heard your father sing*) but rather a sound or a sound-producing event (e.g. *Your father's singing, I heard it*). In sum, Proto-Alor Pantar had a split in the marking of P, and this split was probably motivated by the distinction between human/animate objects (which were indexed with a verbal prefix) versus inanimate objects (which were expressed as free constituents). The fact that the feature 'human/animacy' triggers the indexing of Ps is cross-linguistically not unusual: agreement is often sensitive to the discourse salience of arguments, and since humans/animates have more discourse prominence than inanimates they are more eligible to be indexed on verbs (cf. Dalrymple & Nikolaeva 2011).

In addition to a split P-marking, the proto-language may also have had a split in the marking of intransitive subjects (S) that was based on semantics (Klamer 2012; Robinson & Kratochvíl 2014); a system referred to in the literature as 'semantic alignment' (Mithun 1991; Donohue & Wichmann 2008), in contrast to 'accusative alignment' or 'ergative alignment'. Languages with accusative alignment treat S and A alike, as opposed to P; languages with semantic alignment encode S sometimes like P (by prefixing it to the verb, as in the AP languages), and sometimes like A (eg by expressing it as a free pronoun, as in the AP languages). The variable encoding of S is motivated by the semantics of the verb and its argument, but the lexical sub-categorisation characteristics of verbs also play a role (cf. Fedden et al. 2013; 2014).

The hypothesis that Proto-AP had semantic alignment is based on the following observations.[8] First, AP languages with semantic alignment are found across the region, while languages with accusative alignment are confined to a region in the centre, as shown in Figure 5. This geographical spread suggests that semantic alignment was the original pattern from which the accusatively aligning languages diverged.

Second, some languages that today have accusative alignment show morphological traces of semantic alignment. An example is Kaera (Pantar), which encodes the S of certain intransitive verbs with a prefix otherwise typically used to index P arguments (Klamer 2014: 135–136). This Kaera class of verbs includes verbs such as 'live', 'be silent', 'jump up', 'faint, be unconscious', 'think', 'give birth'.[9] The presence of such morphological fossils suggests that there may have been an earlier historical stage with semantic alignment from which modern Kaera with accusative alignment has developed.

Third, some languages that are accusatively aligning today are still attuned to semantic factors in the alignment of P. Examples are Adang (Haan 2001; Robinson & Haan 2014) or Blagar (Steinhauer 2014). This sensitivity to semantics in an otherwise accusative

[8] To reconstruct the alignment system of Proto-Alor Pantar with confidence, comparative data from cognate sets of a sizable number of verbs across a wide range of Alor Pantar languages need to be collected and their alignment patterns compared, work that yet needs to be done.

[9] Although the coverage of our comparative database is currently insufficient to determine whether the Kaera forms are regularly inherited from the Proto-AP lexicon, verbs with the similar senses regularly either allow or require S-indexing in semantically aligned languages such as Western Pantar (Holton 2014), Klon (Baird 2008), Abui (Kratochvíl 2007; 2011), Kamang (Schapper 2014), Sawila (Kratochvíl 2014b), and Wersing (Schapper et al. 2017).

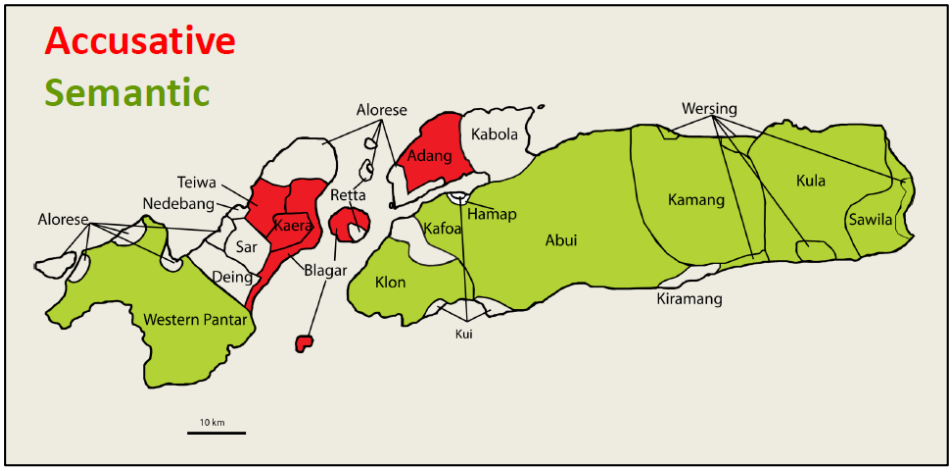

Figure 5: Semantic (green) and accusative (red) alignment in Alor-Pantar languages. (For the language areas left white, information on alignment is lacking).

alignment system suggests that the language developed from an earlier language with semantic alignment.[10]

If Proto-Alor Pantar indeed had semantic alignment, then it must have expressed intransitive S sometimes like A, using a free form, and sometimes like P, using a verbal prefix (compare Table 2). Some examples of reconstructed mono-valent verbs in Proto-AP are presented in Table 3.[11]

We have not, or not yet, been able to reconstruct bound mono-valent verbs, i.e. verbs that encode their S argument with a prefix in their modern reflexes across the AP family. The evidence for the semantic alignment of Proto-AP is thus circumstantial.

To summarize, the following grammatical information about Proto-AP, the ancestor language of Teiwa and Abui has been presented:

1. The reconstructed pronouns include free and bound forms that are formally clearly related (cf. Table 1).

2. In Proto-AP, free pronouns express A while bound pronouns typically express P and Possessor.

3. Proto-AP has some kind of DOM, as Ps are expressed in a split fashion: some bi-valent verbs take a P-prefix, other bi-valent verbs express P with a free form.

[10] In Adang, objects are either indexed by prefixes on the verb or expressed by free object pronouns. There is a tendency for verbs with animate objects to be prefixing (Fedden et al. 2013). In Blagar, various degrees of affectedness can be distinguished using object pronoun, possessive pronouns, or a prefix (Steinhauer 2014: 167, 189).

[11] Holton & Robinson (2017: 75) reconstruct 'close' with a prefix. We find no evidence for this in a larger dataset.

Table 3: Reconstructed mono-valent verbs in Proto-Alor-Pantar (Holton et al. 2012; Holton & Robinson 2017; Schapper et al. 2017; Klamer in press).

Proto-AP verb	Meaning
**tas*	stand
**tia*	sleep
**purVn*	spit
**jagir*	laugh
**luk(V)*	crouch
**mai*	come (here)
**kabar*	scratch
**tiari(n)*	close

4. The P-split is likely based on the distinction between human/animate and inanimate referents, where human/animate Ps are indexed on the verb and inanimate Ps are not.

5. Proto-AP likely has semantic alignment, encoding the S of certain intransitive verbs with a prefix otherwise typically used to index P arguments. However, so far we have only been able to reconstruct mono-valent verbs with a free-standing S.

4 Differential object marking in Teiwa

In Teiwa, some of the Proto-AP properties listed above were retained, while others were lost. Teiwa retained both the proto-prefix for P (and some S) and the free proto-pronoun that encoded A (and some S). The full set of Teiwa pronouns and person prefixes encoding A, P, S, and the possessor is given in Table 4. (Using a long rather than a short free pronoun encodes contrastive focus of A and S in Teiwa.) As in Proto-AP, free pronouns express A while bound pronouns typically express P and Possessor. Unlike Proto-AP, Teiwa has no semantic alignment where S can be marked like P: Teiwa is completely accusative.

As in Proto-AP, some bi-valent verbs in Teiwa take a P-prefix, while other such verbs express P with a free form. Teiwa bi-valent verbs typically use a prefix to index an animate P, while a free form (pronoun or NP) expresses an inanimate P. This is illustrated in (2). In (2a),[12] the object of *mai* is *ha-gas qai* 'your younger sister', an animate referent that is indexed on the verb. In (2b) the verbs *mai* 'keep' and *usan* 'lift' share a single object *aga'* 'all [of it]', which is not indexed on the verb because the referent is inanimate.

[12] Compare *Xa'a ma* ***na****-mai* 'this come 1SG-keep.for' 'Keep this for me.' [constructed example].

Table 4: Teiwa pronouns (S, A, P) and prefixes (P and possessor) (Klamer 2010a: 77–78)

	A, S long pronoun	A, S short pronoun	P free pronoun	P prefix	Possessor prefix[a]
1SG	*na'an*	*na*	*na'an*	*n(a)-*	*n(a)-*
2SG	*ha'an*	*ha*	*ha'an*	*h(a)-*	*h(a)-*
3SG	*a'an*	*a*	*ga'an*	*g(a)-, gə-*	*g(a)-, a-*
DISTR	*ta'an*	*ta*	*ta'an*	*t(a)-*	*t(a)-*
1PL.INC	*ni'in*	*ni*	*ni'in*	*n(i)-*	*n(i)-*
1PL.EXC	*pi'in*	*pi*	*pi'in*	*p(i)-*	*p(i)-*
2PL	*yi'in*	*yi*	*yi'in*	*y(i)-*	*y(i)-*
3PL	*iman, i'in*	*i, a*	*iman, gi'in*	*g(i)-, ga-*	*g(i)-, a-, ga-*

[a]Possessors can also be expressed with short and long forms of free pronouns, see (Klamer 2010a: 79). Teiwa possessive prefixes contain the theme vowel /a/ just like the prefixes that index P. Alienable and inalienable possession are distinguished by the optional versus obligatory use of the possessive prefix *na-yaf* '1SG.POSS-house' 'my house(s)' vs. *yaf* 'a house, house(s)'; *na-tan* '1SG.POSS-hand' 'my hand(s)' vs. **-tan* (intended reading 'a hand, hand(s)').

(2) Teiwa (Klamer fieldnotes TAS:0055; TAS2012:001)

a. *Xa'a* *ma* *ha-gas qai* *ga-mai.*
this come 2SG.POSS-younger.sister 3SG-keep.for
'Keep this for your younger sister.'

b. *Aga'* *usan* *kamar* *gom* *ma* *mai.*
all lift room(IND) inside come keep
'Pick up all (of it) and keep (it) inside the room.'

Another example of an animate P that is indexed on the verb is given in (3a). It contrasts with the P in (3b), which is inanimate and not indexed. A similar contrast is shown in (4), but here the free form is a pronoun rather than a lexical constituent.

(3) Teiwa (Klamer fieldnotes TAS2011:138; TPV2011_2:016)

a. *Bif* *g-oqai* *sen* *ma* *ga-mian.*
child 3SG.POSS-child money come 3SG-put.at
'His child gave him money.'

b. *In* *qap* *ii'* *kalax* *gom* *mian.*
thing cut red basket inside put.at
'A red cloth is put inside a basket.'

(4) Teiwa (Klamer 2010a: 91)

a. *Na* *ga-mar.*
1SG 3SG-take
'I follow him/her.'

b. *Na* *ga'an* *mar.*
1SG 3SG take
'I take it.'

Some additional illustrations of Teiwa verbs that show DOM based on animacy are given in (5). These verbs are attested with both an animate and inanimate object in the Teiwa corpus.

(5) Illustrations of Teiwa transitive verbs showing DOM

With P-prefix		Without P-prefix	
ga-mar	'follow someone'	*mar*	'take (something)'
ga-sii	'bite someone'	*sii*	'bite (into) (something)'
ga-dee	'burn someone'	*dee*	'burn (something)'
ga-sar	'notice, find someone'	*sar*	'notice, find (something)'

However, DOM in Teiwa is not completely predictable and regular, as there are also some verbs that index Ps which are not animate. First, the Teiwa corpus contains some examples of verbs whose prefix optionally indexes an animate or an inanimate referent. An example is *uyan* 'search for' in (6). Both (6a) and (6b) are grammatical, but in (6b) the indexed P has an inanimate referent (*wat* 'coconut(s)'). In examples (6c)–(6e) the prefix on other verbs from the same class indexes inanimate referents: a tree, a coconut, and a spoon.

(6) Teiwa (Klamer, fieldnotes TAS:0628, TC:025a, TTR2010:024; Klamer 2010a: 307)

a. *Na* *n-ogai* *ga-uyan.*
1SG 1SG.POSS-child 3SG-search
'I'm looking for my child.'

b. *Na* *wat* *ga-uyan.*
1SG coconut 3SG-search
'I'm looking for coconut(s).'

c. *Burilak* *ga'an* *ma* *Sibari* *heer* *nuk* *ga-sar.*
clan.name 3SG come k.o.tree stem one 3SG-notice
'The Burilaks noticed a Sibari tree'

d. *...uy* *quaf* *eran* *ta* *om* *qalixil* *ta*[13] *a-fat* *mat*
person grandmother that TOP inside angry TOP 3SG-foot take
ma, *wat* *u* *ga-tane'* *si...*
come coconut DIST 3SG-kick SIM

[13] *Ta* marks switched topics, but here it functions as a clause-linking device. Its interclausal function may be characterized as marking the discontinuity or asymmetry of events in discourse (Klamer 2010a: Sec. 11.4).

'…that grandmother was angry and with (lit. taking) her foot kicked that coconut, then…'

e. *Sii'* *ga'an* *in* *qap* *ga-tiri* *ba* *ga-wa'* *la* *a'an*
spoon DEM thing cut 3SG-float SEQ 3SG.POSS-leaf FOC 3SG
dagar.
be.visible

'That spoon is covered by a cloth so that [only] its round part is visible.'[14]

Second, there is a set of verbs that take alternating prefixes to index animates and inanimates: the 'normal' prefix *ga-* encodes inanimate Ps, while an 'augmented' prefix *ga'-* (pronounced as [ga?]) encodes animate Ps. Illustrations are given in (7). To distinguish animate and inanimate objects by choosing a different prefix seems to be a minority pattern in Teiwa, attested at least for the verbs listed in (8).

(7) a. Teiwa (Klamer 2010a: 92)
Na *gi* *ga'-tad.*
1SG go 3ANIM-strike
'I go hit him/her.'

b. *Na* *gi* *ga-tad.*
1SG go 3SG-strike
'I go hit it.'

(8) Teiwa transitive verbs with alternating prefixes (Klamer 2010a: 91–92)

With *ga'*-prefix		With *ga*-prefix	
ga'-wulul	'talk with s.o., tell s.o.'	*ga-wulul*	'talk about sth., tell sth.'
ga'-wultag	'talk to/about s.o., tell s.o.'	*ga-wultag*	'talk about sth.'
ga'-tewar	'go/walk together with s.o.'	*ga-tewar*	'his (manner of) *ga-tewar* walking'
ga'-tad	'hit, strike, touch s.o.'	*ga-tad*	'hit, strike at sth.'

Note that definiteness does not play a role in the distinction as both definite and indefinite Ps can be indexed. An example of a definite Ps that is indexed is *wat u* 'that coconut' in (6d), while *wat* 'coconut(s)' in (6b) is an indexed indefinite P.

The distinction between free and bound pronouns (person prefixes) is not uniquely reserved for marking the animacy of a referent but is also used to encode contrastive or identificational focus in Teiwa.[15] This is illustrated in (9), where the animate P is indexed on the verb with a prefix in (9a), but is expressed as a free form in (9b), where it encodes a focused constituent.

[14] A more literal translation of this sentence is 'That spoon, a cut thing floats on [it] so that only its leaf is visible'.

[15] New information focus (Lambrecht 1994; Dalrymple & Nikolaeva 2011: 47–48) is marked in Teiwa with a dedicated focus particle *la* and is not further discussed here, see Klamer (2010a: Ch. 11).

(9) Teiwa (Klamer 2010a: 407)

a. *Miaag* *yivar* *ga-sii.*
yesterday dog 3SG-bite
'Yesterday a dog bit him.'

b. *Miaag* *yivar* *ga'an* *sii.*
yesterday dog 3SG bite
'Yesterday a dog bit HIM (not me).'

In sum, the Proto-AP split marking of P plus its semantic alignment system developed into an accusative system with DOM in Teiwa. The distribution of the person prefix paradigms is lexicalized (normal vs. 'augmented'). The person prefix that was used for human/animate Ps (and some S) in Proto-AP is used in Teiwa to index mostly animate Ps. A small class of verbs lexicalized the prefix, and indexes both animate and inanimate Ps. The original free pronouns that were used to express A (and some S) in Proto-AP function in modern Teiwa to express both A and S (in an accusative system), and also as a marker of contrastive focus of P.

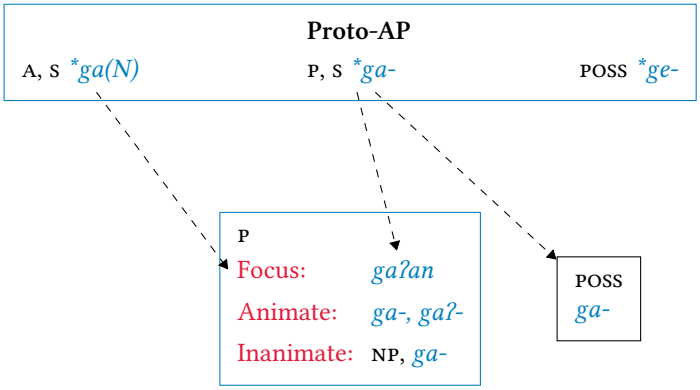

Figure 6: The historical relation between forms encoding P in Proto-Alor-Pantar and in Teiwa

5 Differential object marking in Abui

Reflexes of the Proto-AP pronouns in Table 1 are attested in Abui, both in free and bound forms, as shown in Table 5. Taking the theme vowel /a/, the first (PAT) paradigm reflects the Proto-AP prefixes that encoded Ps in the proto-language. The additional paradigms, distinguished by vowel grading and vowel lengthening, elaborated the proto-system.[16]

[16] Most languages of the Alor branch have expanded their verbal prefix paradigms in a similar way as Abui; with a prefix containing an /o/ and/or an /e/. Sawila has two verbal prefix paradigms (Kratochvíl 2014b), Adang, Klon, and Wersing have three paradigms (Haan 2001; Baird 2008; Robinson & Haan 2014; Schapper et al. 2017), and Kamang has seven paradigms (Schapper 2014). This suggests that Proto-Alor may already have had two verbal prefixes.

Table 5: Abui pronominals (Kratochvíl 2007: 78, 2011: 591, 2014a: 555)

	free pronoun	I (PAT)	II (LOC)	III (REC)	IV (BEN)	V (GOAL)
1SG	*na*	*na-*	*ne-*	*no-*	*nee-*	*noo-*
2SG	*a*	*a-*	*e-*	*o-*	*ee-*	*oo-*
3	–	*ha-*	*he-*	*ho-*	*hee-*	*hoo-*
DISTR	–	*ta-*	*te-*	*to-*	*tee-*	*too-*
1PL.EXC	*ni*	*ni-*	*ni-*	*nu-*	*nii-*	*nuu-*
1PL.INC	*pi*	*pi-*	*pi-*	*pu-*	*pii-*	*puu-*
2PL	*ri*	*ri-*	*ri-*	*ru-*	*rii-*	*ruu-*

Each of the five prefix paradigms may be used to index Ps, and a vague connection may be seen between a particular paradigm and the semantic role of the P it encodes, as indicated by the semantic role given in brackets in the column header.

The second (LOC) paradigm has the theme vowel /e/, and is a reflex of the Proto-Alor Pantar possessive prefix **ge-* '3GEN'. It has often been noted that location and possession are semantically related notions: an item is typically located at or near the person that possesses it. Abui has drawn on this relation to recruit the possessor prefix of Proto-AP as a locative person index.[17] Paradigm four (BEN) elaborates on the locative paradigm by lengthening the theme vowel /e/. Vowel lengthening is a strategy to create new forms in Abui, and is also used to create a separate set of goal prefixes on the basis of the Recipient paradigm. The recipient (REC) paradigm itself contains the theme vowel /o/. While a prefix with this vowel cannot be reconstructed to the level of Proto-AP, it may have been present in Proto-Alor as similar forms are found in other languages of Alor, e.g. Adang *ʔo* (Haan 2001), Klon *go-* (Baird 2008), and Kamang *wo-* (Schapper 2014), where they have a locative function. Prefixes with /o/ might have evolved from a word that was originally locative postposition or verb, and became reanalyzed as a verbal prefix.

In (10a)–(10e) it is illustrated how the different Abui prefixes roughly correspond to semantically different Ps. The prefix expresses, respectively: a patient (10a), a location (10b), a recipient/benefactive (10c), a benefactive (10d), or a goal (10e). Note also that some of the predicates are complex, consisting of two or more verbs forming a single phonological word, as in *-l=bol* 'give=hit' in (10b) and *-k=yai* 'throw=laugh' in (10c) (cf. Klamer & Kratochvíl 2010).

[17] In Abui possessive constructions, the Proto-AP possessor prefix (with theme vowel /e/) is used to express alienable possession, while the Proto-AP P-prefix (with theme vowel /a/) is used for inalienable possession (Kratochvíl 2007): *ne-fala* '1SG.POSS.AL-house' 'my house' versus *na-min* '1SG.POSS.INAL-nose' 'my nose'. Other Alor languages share this innovation.

(10) Abui (Kratochvíl 2007: 592)

a. *Na* *a-ruidi.*
1SG.AGT 2SG.PAT-wake.up.PFV
'I woke you up.'

b. *Di* *palootang* *mi* *ne-l=bol.*
3AGT rattan take 1SG.LOC-give=hit
'He hit me with a rattan (stick).'

c. *Fanmalei* *no-k=yai.*
Fanmalei 1SG.REC-throw=laugh
'Fanmalei laughed at me.'

d. *Ma* *na* *ee-bol.*
be.PROX 1SG.AGT 2SG.BEN-hit
'Let me hit [it] for you.'

e. *Simon* *di* *noo-dik.*
Simon 3AGT 1SG.GOAL-prick
'Simon is poking me.'

Although the above examples show rather transparent relations between the prefix and the semantic role of the argument it encodes, in most instances where prefixes are used in Abui, the relation between form and semantics is either vague, or absent. This is because in Abui, P-indexing is also heavily determined by inflectional classes of verbs, and inflectional class assignments are mostly idiosyncratic (see below).

In Abui, the different semantic types of transitive verbs (e.g. verbs of perception, cognition, speech, or transfer) encode their P in various ways. Here we will not describe all the possible patterns, as that would amount to writing another article (see Kratochvíl 2007; 2011; 2014a; Kratochvíl & Delpada 2015b). Rather, we focus here on the differential marking of the P of so-called 'typical transitive' (Comrie 1989: 111; Haspelmath 2011: 545) verbs only. Such verbs convey the most typical transitive activities, such as kill, hit, kick, carry, search for, take, and hold, which have a highly agentive A and a highly patientive P. In Abui, even this restricted class of typical transitive verbs shows significant differentiation in the marking of P, as we will discuss now.

In Abui, as in Teiwa, animacy determines whether or not a prefix is used on the verb. This is illustrated in (11a)–(11b): the inanimate P *kanai do* 'these pili nut(s)' is not indexed on the verb *bol* 'to hit' in (11a), while the human body part *netoku* 'my leg(s)' is prefixed on *bol* in (11b).[18] Note that both NPs are definite: possessives and NPs marked with the demonstrative *do* are definite in Abui (Kratochvíl & Delpada 2015a).

[18]Unlike English 'hit' and many other verbs, Abui bi-valent *bol* can take different prefixes, indicating arguments with different semantic roles and often somewhat different senses: *PAT-*bol*, REC-*bol* 'hit at s.o.', BEN-*bol* 'hit for/instead of s.o.', GOAL-*bol* 'dust off s.o.'.

(11) Abui (Kratochvíl 2014a: 566)

a. *Di* *kanai* *do* *bol* *took.*
3AGT pili.nut PROX hit drop
'He was hitting pili nuts (and) dropping [them].'

b. *Baloka* *ne-toku* *he-bol* *he-balasi* *ba…*
k.o.grass 1SG.POSS-leg 3.LOC-hit 3.LOC-beat.PFV SIM
'The *baloka* grass hit my legs slashing them…'

The variation in (11a) and (11b) is an instance of asymmetric morphological alternation between a nominal P and a P indexed on the verb with an overt morphological exponent Witzlack-Makarevich & Seržant (2018 [this volume]). It is parallel to the reconstructed Proto-AP pattern and to the pattern in Teiwa, illustrated in (3)–(4) above. In addition, animacy also determines marking of P in Abui following a symmetric system, where both alternatives are morphologically marked. In (12a), the inanimate P of *puna* 'hold' is encoded with a LOC prefix, while in (12b), the same verb takes an animate P which is indexed with a GOAL prefix. This type of DOM marking in Abui is analogous to the symmetrical pattern in Teiwa, illustrated in (7)–(8) above.

(12) Abui (Abui corpus: E15BD071, E15BD072)

a. *Maama,* *na* *mahiting* *he-puna* *yo!*
father 1SG.AGT meat 3.LOC-hold.IPFV MD.AD
'Father, I will hold the meat (while you slice it)!'

b. *Di* *noo-puna!*
3.AGT 1SG.GOAL-hold.IPFV
'He is grabbing (groping) me!'

In addition, Abui P-marking is also sensitive to the semantically more narrow distinction between human and non-human referents. When the referent of P is human, the main transitive verb combines with another (generic) verb in a complex predicate where the P-prefix attaches to the generic verb, as illustrated in (13). The semantic contribution of the generic verb 'give' in (13) is to flag the presence of a human P. In (13) we illustrate two such serial constructions: *-l=bol* 'give hit' and *-l=balasa* 'give beat'. In both cases, the referent is human, therefore must prefix to *-l* 'give'. When a referent is not human, the prefix is not expressed in such a serial construction with *-l*, but rather attached directly to the main verb, as was illustrated in (11a) and (11b) above. Kratochvíl (2014a: 567–569) provides further examples of this asymmetrical DOM pattern, which is sensitive to the distinction [+/- human]. This pattern is quite frequent in Abui and typical for verbs of change (impingement, locomotion, search verbs) and spreading into emotion and cognition verbs.

(13) Abui (Abui corpus: N12.070)

Markus	*di*	*ne-l=bol*	*ne-l=balasa.*
M.	3SG	1SG.LOC-give=hit	1SG.LOC-give=beat.IPFV

'Markus gives me a beating (lit. hits me (and) beats me).'

Furthermore, besides animacy and humanness, the affectedness of P also plays a role in the choice of prefix. This DOM type is the topic of Kratochvíl & Delpada (2015b). Abui systematically encodes the degree of affectedness for predicates that describe change (observable change, (loco)motion, physical impingement, and going out of or coming into existence).[19] In terms of Beavers's (2011) account of affectedness, the Abui PAT-indexed verbs indicate a maximum degree of affectedness while the LOC-indexed verbs shift one degree lower (Kratochvíl & Delpada 2015b: 232). The alternation of the degree of affectedness can be tested with entailments, as shown in (14a)–(14b). The PAT-indexed verb entails a maximal change to the effect described by the verb and this change cannot be negated by the entailment (14a), but this is possible with LOC-indexed verbs, as shown in (14b).

(14) Abui (Abui corpus: E15BD51, E15BD52)

a.

di	*kawen*	*ha-komangdii*	*#haba*	*de-i=bula*
3.AGT	machete	3.LOC-make.blunt.PFV	but	3I.LOC-have=be.sharp

'He made the knife blunt, #but it's still sharp.'

b.

di	*kawen*	*he-komangdii*	*haba*	*de-i=bula*
3.AGT	machete	3.LOC-make.blunt.PFV	but	3I.LOC-have=be.sharp

'He made the knife blunter, but it's still sharp.'

A number of verbs of change participate in this DOM pattern in Abui, with some examples given in (15)–(18). The entailments work in the same way as for the verb *-komangdii* 'make blunt' above. It should be noted that the Abui senses may map sometimes onto different verbs in English, underlining the semantic distinctions invoked by this DOM pattern.

(15) Observable Change verbs (Kratochvíl & Delpada 2015b: 222)

a. +Affected: PAT *ha-*

ha-lilri	'boil it'
ha-siki	'separate it'
ha-kol	'tie it up'
ha-kuya	'expose it'

b. –Affected: LOC *he-*

he-lilri	'warm it up'
he-siki	'split it'
he-kol	'tie it'
he-kuya	'peel it'

[19] Other AP languages have been described having DOM systems where 'affectedness' is one of the trigger features: Blagar (Steinhauer 2014: 188–189); Kamang (Fedden et al. 2014: 64–66); Klon (Baird 2008); Sawila (Kratochvíl 2014b); Kula (Williams 2016).

(16) Move and Stay at Some Location verbs (Kratochvíl & Delpada 2015b: 227)

a. +Affected: PAT *ha-*

ha-taang	'give it away'
ha-fil	'pull it'
ha-bel	'pull it out'
ha-baang	'put on (its lid)'
ha-kil	'turn it upside down'

b. –Affected: LOC *he-*

he-taang	'pass it along'
he-fil	'pull on it'
he-bel	'pluck it'
he-baang	'put on shoulder'
he-kil	'put it out'

(17) Physical impingement verbs (Kratochvíl & Delpada 2015b: 227)

a. +Affected: PAT *ha-*

ha-dik	'pierce it, stab through it'
ha-ril	'ram it in'
ha-taakda	'stab to death'
ha-keila	'plug it'
h-afuui	'scoop it up'
h-ahii	'remove it'
ha-fuuidi	'flatten it'

b. –Affected: LOC *he-*

he-dik	'stab at it'
he-ril	'plant it in'
he-taakda	'skewer it'
he-keila	'block it'
he-afui	'scoop it'
he-ahii	'select it, pick it'
he-fuuidi	'made it flatter'

(18) Go Out of Existence verbs (Kratochvíl & Delpada 2015b: 228)

a. +Affected: PAT *ha-*

ha-lak	'destroy it'
h-akung	'extinguish it'

b. –Affected: LOC *he-*

he-lak	'demolish it'
he-akung	'shade it'

And finally, P-indexing is also restricted by Abui verbal inflectional classes, which in some cases stipulate the P-index type as PAT, irrespective of the semantics of the event expressed by the verb, as described in Fedden et al. (2013; 2014); Fedden & Brown (2017). In these studies the prefixing behaviour of Abui verbs was examined. About 10% of the verbs always index the P with the PAT prefix and do not allow any symmetrical DOM.

This particular inflectional class includes both typical transitive verbs, describing events of observable change (19), (loco)motion (20), physical impingement (21), and going out of or coming into existence (22)) (e.g., *-balak* 'to hit, punch s.o./sth.' and *-basa* 'to brush off sth.'), but also verbs of speech, cognition and transfer, as well as verbs of perception, posture, placement and sound (Fedden et al. 2014; Kratochvíl & Delpada 2015b). It is possible that these verbs represent an older layer of the Abui lexicon, and reflect an older stage of its grammar, before the systematic DOM alternation between PAT- and LOC-indexed verb was fully grammaticalized.

(19) Observable Change verbs (Kratochvíl & Delpada 2015b: 222)

ha-basa	'brush him off, dust it'	*ha-weel*	'wash him, bathe him'
ha-kuol	'shave it'	*h-iel*	'roast it'
ha-tamadia	'repair it'		

(20) Move and Stay at Some Location verbs (Kratochvíl & Delpada 2015b: 223)

ha-fik	'pull it, pull him'	*ha-kuoila*	'topple it'
ha-ai	'add it'	*ha-bi*	'lean against it'
ha-suonra	'push it'	*ha-kai*	'drop it, trip him'
ha-reng	'turn to it'		

(21) Physical impingement verbs (Kratochvíl & Delpada 2015b: 224)

ha-balak	'punch him'	*h-uol*	'hit/strike him'
ha-laanga	'grope him'	*ha-paakda*	'slap him'
ha-taak	'shoot him'		

(22) Go Out of Existence verbs (Kratochvíl & Delpada 2015b: 224)

ha-al	'burn it'	*ha-pok*	'cover it'
ha-fuul	'swallow it'	*ha-yol*	'bury it'

The inflectional verb class illustrated in (19)–(22) contrasts with the PAT~LOC alternating verbs in (15)–(18) in that the degree of affectedness of their P is not fixed. This can be seen when the entailment is a 'failed' reading, as shown in (23a)–(23c), something not possible for the PAT-indexed verbs that participate in the symmetrical DOM discussed above. For more details, see Kratochvíl & Delpada (2015b).

(23) Abui (Abui corpus: E15BD34, E15BD35, E15BD36)

a. *na* *ha-fik-i* *haba* *burook* *naha*
1SG.AGT 3.PAT-pull-PFV but but not
'I pulled it but it didn't move.'

b. *na* *ha-fik-i* *haba* *sik* *naha.*
1SG.AGT 3.PAT-pull-PFV but snap not
'I pulled it but it didn't snap.'

c. *na* *ha-fik-i* *haba* *dara* *de-yal* *mia.*
1SG.AGT 3.PAT-pull-PFV but still 3I.AL-place be.in
'I pulled it but it is in its place (it's too heavy).'

Clearly, this class does not show any evidence of symmetrical DOM as it marks P always in the same way (with a PAT prefix). Yet it is important to mention it in the context of the current paper, because it shows that while Abui differentiates Ps in symmetric and asymmetric ways, along a number of different semantic dimensions, the language also has a reasonably large class of bivalent verbs that do not take part in symmetrical differential marking of P at all.

The DOM pattern of alternation between LOC- and PAT-indexed verbs is attested with 22% of the sample investigated by Fedden et al. 2013; 2014. Furthermore, verbs in this class can also combine with other series (BEN, REC, or GOAL), i.e. alternate symmetrically. At the same time, verbs in this class can also occur without a prefix and alternate asymmetrically in complex predicates (see Fedden et al. 2014: Table 5). In general, the three additional series (BEN, REC, and GOAL) are less restricted and combine on average with about 87% of the roots. This is expected, given their later development and greater productivity.

In sum, there is a variety of factors involved in the marking of the objects of the typical transitive verbs in Abui. These include:

- the semantic role of P (where Ps that are semantically patient, locative, benefactive or goal can be marked differently);
- the inherent semantic properties of the argument (whether P is animate or not, whether P is human or not);
- the relation between the verb and its argument (whether P is affected or not and to what degree);
- the inflectional verb class (which determines whether or not P is marked differentially, and how it is marked differentially, i.e. using a symmetrical or asymmetrical pattern).

The Abui data clearly show that in a single language, DOM can have multiple triggers, involving inherent lexical argument properties, inflectional classes, and event semantics; and combine symmetrical and asymmetrical morphological alternations. In a language family such as the AP family, which tends to index P over S/A, languages may develop in a direction where they elaborate on the encodings of P in new ways, as Abui demonstrates. Figure 7 shows how the modern Abui morphemes used for DOM relate to the reconstructed forms in Proto-AP.

Unlike in Teiwa, Abui retained the semantic alignment of Proto-AP, where S could sometimes be marked as P. In numerous cases, S arguments can be indexed on verbs as if they are Ps. In general, such S arguments have a more affected, and less volitional, semantics than free-standing S arguments (Kratochvíl 2007; 2011; 2014a; Fedden et al. 2013; 2014; Fedden & Brown 2017).

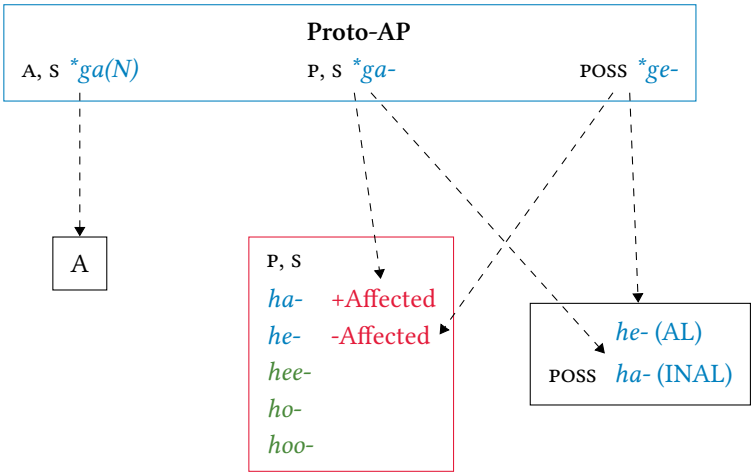

Figure 7: The historical relation between forms encoding P in Proto-Alor-Pantar and Abui.

6 Conclusions

Sharing a common ancestor that had DOM, Teiwa and Abui still mark objects differentially, and in both languages, reflexes of the same proto-morpheme are used in the differential marking of P. Yet, there are many differences between the two languages in the proto-forms that have been retained and innovated, and in the way DOM is applied.

In their morphological expression, there are two dimensions in which Ps are differentiated in both Teiwa and Abui. The first is asymmetrical: either P is expressed as a verbal prefix (with an optional co-referent pronoun or NP in the clause), or P is expressed as a free pronoun or nominal phrase. Second, Ps may be differentiated symmetrically, by the variable choice of a P-prefix depending on the semantics of P. Both strategies are used in both languages, but the symmetrical strategy involves two prefixes in Teiwa and five prefixes in Abui. The DOM patterns are summarized below (the information structure uses are not included).

Also, the factors triggering DOM are different: in Teiwa it is mostly based on the inherent properties (animacy) of P, while in Abui there are many other triggers besides the animacy of P, including the affectedness relation between the action and the P referent and the inflectional class of the verb. Furthermore, Abui has developed an extra, third, formal strategy to differentiate human Ps from non-human ones in a serial verb construction.

The reconstructed alignment system of Proto-AP was semantic. In Teiwa, this system has evolved into an accusative alignment system, but the original system was retained and further complexified in Abui. This indicates that alignment systems are not static

and can be modified and complexified over time by putting morphemes of an ancestor language into new uses and creating new forms, e.g. by adding symmetrical paradigms of person-indexing prefixes.

An interesting comparison can be made with the semantic alignment systems of the Papuan languages of North Halmahera discussed in Holton (2008). While there is evidence for syntactic alignment in proto-North Halmaheran, many of the modern North-Halmaheran languages have innovated semantic alignment (Holton 2008: 274–275). In the AP languages, the situation is the opposite: the semantic alignment is reconstructed for the proto-language, and the syntactic alignment in Teiwa is an innovation. The path of historical evolution of alignment system can therefore not be unidirectional (from syntactic to semantic alignment), but the evolution in both directions is possible, and facilitated by DOM (in Alor Pantar) and optional or pleonastic marking (in North Halmahera).

It seems that languages that have semantic alignment (or differential S marking) alongside DOM, such as Abui, tend to develop more complex systems of DOM than languages with accusative alignment, such as Teiwa.

In the development of their respective DOM systems, Teiwa and Abui underwent different morphological changes. The Proto-AP prefix **ga-* is reflected in the Teiwa prefix that encodes topics and animate Ps, as well as in Teiwa possessors. In Abui, this prefix is reflected as the PAT prefix and could be the source of the innovated prefixes as well (Klamer & Kratochvíl 2012). The PAT prefix is the most semantically bleached prefix of all five of the Abui P-prefixes, as it is obligatory for a semantically diverse class of verbs that makes up 10% of the total number of verbs investigated in Abui. Most of these verbs encode events describing various types of change (observable change, (loco)motion, physical impingement, going out of and coming into existence) – suggesting a relationship with affectedness. The Abui LOC and BEN prefixes feature the theme vowel /e/, reflecting the Proto-Alor Pantar possessive prefix **ge-* '3GEN', but in Teiwa no reflex of this prefix has been retained.

The proto-pronoun **ga(N)* that was used to encode A and S in Proto-AP is reflected in modern Teiwa as the free pronoun *ga'an*, but in Teiwa it encodes contrastive focused Ps. In Abui it encodes A, but the final nasal has been lost. Abui has also innovated a new prefix paradigm with a theme vowel /o/, and two additional paradigms by lengthening the vowel of existing paradigms. Apart from the use of reflexes of the Proto-AP object prefix **ga-*, very few similarities remain between the morphemes that are used in Teiwa and Abui DOM.

In sum, this study has shown that the evolutionary path of DOM from Proto-Alor Pantar into its daughter languages has both stable and unstable features. Stable features are the inherent semantic feature of humanness/animacy of P that is being coded, and the shape of the person prefix that is used in the coding. However, the semantic alignment system of Proto-Alor Pantar appears to be volatile, as it changed to accusative in Teiwa. This is not an unexpected result since alignment patterns are sensitive to morphological and phonological changes. Also, a language can develop additional triggers for DOM as well as the additional person markers that it needs to encode these additional types of

Ps alongside inflectional verb classes, as has happened in Abui. In general, the DOM triggers in Abui shifted away from being purely participant-related, to include event-related features (degree of affectedness) as well. The Alor Pantar languages show that alignment systems are not static: their forms and triggers may be modified and complexified quite substantially over time.

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Abbreviations

1	person markers
2	second person
3	third person
AD	addressee-perspective
AGT	agentive pronoun
ANIM	animate
AP	Alor Pantar
APPL	applicative
ASSOC	associative
BEN	undergoer prefix paradigm (benefactive-like)
CONT	continuative
DEM	demonstrative
DIST	distal
DISTR	distributive
DOM	differential object marking
EVID	evidential
FOC	focus
GOAL	undergoer prefix paradigm (goal-like)
INC	inchoative
IND	Indonesian
LNK	linker
LOC	undergoer prefix paradigm (location-like)
MD	medial
MOD	modal
PAT	undergoer prefix paradigm (patient-like)
PRIOR	priorative
PROX	proximate
REC	undergoer prefix paradigm (recipient-like)
SEQ	sequential
SIM	simultaneous
SPC	specific determiner
TOP	topic

References

Baird, Louise. 2008. *A grammar of Klon: A non-Austronesian language of Alor, Indonesia*. Canberra: Pacific Linguistics.

Beavers, John. 2011. On affectedness. *Natural Language and Linguistic Theory* 29(2). 335–370.

Comrie, Bernard. 1989. *Language universals and linguistic typology*. 2nd edn. Chicago: University of Chicago Press.

Dalrymple, Mary & Irina Nikolaeva. 2011. *Objects and information structure*. Cambridge: Cambridge University Press.

Donohue, Mark & Søren Wichmann (eds.). 2008. *The typology of semantic alignment*. Oxford: Oxford University Press.

Fedden, Sebastian & Dunstan Brown. 2017. Participant marking: Corpus study and video elicitation. In Marian Klamer (ed.), *The Alor-Pantar languages: History and typology*, 2nd edn., 403–446. Berlin: Language Science Press.

Fedden, Sebastian, Dunstan Brown, Greville G. Corbett, Gary Holton, Marian Klamer, Laura C. Robinson & Antoinette Schapper. 2013. Conditions on pronominal marking in the Alor-Pantar languages. *Linguistics* 51(1). 33–74.

Fedden, Sebastian, Dunstan Brown, František Kratochvíl, Laura C. Robinson & Antoinette Schapper. 2014. Variation in pronominal indexing: Lexical stipulation vs. Referential properties in the Alor-Pantar languages. *Studies in Language* 38(1). 44–79.

Filimonova, Elena. 2005. The noun phrase hierarchy and relational marking: Problems and counterevidence. *Linguistic Typology* 9(1). 77–113.

Haan, John W. 2001. *The grammar of Adang: A Papuan language spoken on the Island of Alor East Nusa Tenggara – Indonesia*. Sydney: University of Sydney dissertation.

Haspelmath, Martin. 2011. On S, A, P, T, and R as comparative concepts for alignment typology. *Linguistic Typology* 15(3). 535–567.

Heine, Bernd & Kyung-An Song. 2011a. On the genesis of personal pronouns: Some conceptual sources. *Language and Cognition* 1(2). 117–147.

Heine, Bernd & Kyung-An Song. 2011b. On the grammaticalization of personal pronouns. *Journal of Linguistics* 3(47). 587–630.

Holton, Gary. 2008. The rise and fall of semantic alignment in North Halmahera, Indonesia. In Mark Donohue & Søren Wichmann (eds.), *The typology of semantic alingment*, 252–276. Oxford: Oxford University Press.

Holton, Gary. 2014. Western Pantar. In Antoinette Schapper (ed.), *The Papuan languages of Timor-Alor-Pantar: Sketch grammars*, vol. 1, 18–75. Berlin: de Gruyter Mouton.

Holton, Gary, Marian Klamer, František Kratochvíl, Laura C. Robinson & Antoinette Schapper. 2012. The historical relations of the Papuan languages of Alor and Pantar. *Oceanic Linguistics* 1(51). 86–122.

Holton, Gary & Laura C. Robinson. 2014. The linguistic position of the Timor-Alor-Pantar languages. In Marian Klamer (ed.), *The Alor-Pantar languages: History and typology*, 2nd edn., 147–190. Berlin: Language Science Press.

Holton, Gary & Laura C. Robinson. 2017. The internal history of the Alor-Pantar language family. In Marian Klamer (ed.), *The Alor-Pantar languages: History and typology*, 2nd edn., 49–90. Berlin: Language Science Press.

Iemmolo, Giorgio. 2011. *Towards a typological study of differential object marking and differential object indexation*. Pavia: University of Pavia dissertation.

Klamer, Marian. 2010a. *A grammar of Teiwa*. Berlin: Mouton de Gruyter.

Klamer, Marian. 2010b. Ditransitive constructions in Teiwa. In Martin Haspelmath & Bernard Comrie (eds.), *Studies in ditransitive constructions: A comparative handbook*, 427–455. Berlin: Mouton de Gruyter.

Klamer, Marian. 2010c. One item, many faces: 'Come' in Teiwa and Kaera. In Michael C. Ewing & Marian Klamer (eds.), *East Nusantara: Typological and areal analyses*, 203–226. Canberra: Pacific Linguistics.

Klamer, Marian. 2012. Dressing up and dressing down in Austronesian and Papuan: Cases from the Lesser Sunda Islands. Presented at the conference *"Austronesian and Papuan Languages and Linguistics)" (APLL5), SOAS London, May* 4, 2012.

Klamer, Marian. 2014. Kaera. In Antoinette Schapper (ed.), *The Papuan languages of Timor-Alor-Pantar: Sketch grammars*, vol. 1, 97–146. Berlin: de Gruyter Mouton.

Klamer, Marian. 2017. The Alor-Pantar languages: Linguistic context, history and typology. In Marian Klamer (ed.), *The Alor-Pantar languages: History and typology*, 2nd edn., 1–48. Berlin: Language Science Press.

Klamer, Marian. in press. Typology and grammaticalization in the Papuan languages of Timor, Alor and Pantar. In Bernd Heine, Heiko Narrog & Prashant Pardeshi (eds.), *Grammaticalization from a typological perspective*. Oxford: Oxford University Press.

Klamer, Marian & František Kratochvíl. 2010. Abui tripartite verbs: Exploring the limits of compositionality. In Jan Wohlgemuth & Michael Cysouw (eds.), *Rara and rarissima: Documenting the fringes of linguistic diversity*, 185–210. Berlin: Mouton de Gruyter.

Klamer, Marian & František Kratochvíl. 2012. The role of animacy in Teiwa and Abu (Papuan). In Zhenya Antić, Charles B. Chang, Clare S. Sandy & Maziar Toosarvandani (eds.), *Proceedings of BLS 32, February 10-12, 2006. Special session on the languages of Oceania*, 59–70. Berkeley: Berkeley Linguistics Society.

Klamer, Marian & Antoinette Schapper. 2012. 'Give' constructions in the Papuan languages of Timor-Alor-Pantar. *Linguistic Discovery* 3(10). 174–207.

Kratochvíl, František. 2011. Transitivity in Abui. *Studies in Language* 35(3). 588–635.

Kratochvíl, František. 2014a. Differential argument realization in Abui. *Linguistics* 52(2). 543–602.

Kratochvíl, František. 2014b. Sawila. In Antoinette Schapper (ed.), *The Papuan languages of Timor-Alor-Pantar: Sketch grammars*, vol. 1, 351–438. Berlin: de Gruyter Mouton.

Kratochvíl, František. 2007. *A grammar of Abui: A Papuan language of Alor*. Leiden: Leiden University dissertation.

Kratochvíl, František & Benidiktus Delpada. 2015a. Definiteness and specificity in Abui. In *Proceedings of the Second International Workshop on Information Structure of Austronesian Languages*, 179–208. Tokyo: Research Institute for Languages, Cultures of Asia & Africa (ILCAA), Tokyo University of Foreign Studies.

Kratochvíl, František & Benidiktus Delpada. 2015b. Degrees of affectedness and verbal prefixation in Abui (Papuan). In Stefan Müller (ed.), *Proceedings of the 22nd International Conference on Head-Driven Phrase Structure Grammar, Nanyang Technological University (NTU), Singapore*, 216–233. Stanford, CA: CSLI Publications.

Lambrecht, Knud. 1994. *Information structure and sentence form*. Cambridge: Cambridge University Press.

Mithun, Marianne. 1991. Active/agentive case marking and its motivations. *Language* 67(3). 510–546.

Nichols, Johanna & David A. Peterson. 2013. M-T Pronouns. In Matthew S. Dryer & Martin Haspelmath (eds.), *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. http://wals.info/chapter/136.

Robinson, Laura C. & John W. Haan. 2014. Adang. In Antoinette Schapper (ed.), *The Papuan languages of Timor-Alor-Pantar: Sketch grammars*, vol. 2, 173–222. Berlin: de Gruyter Mouton.

Robinson, Laura C. & František Kratochvíl. 2014. Reconstructing alignment: The Alor-Pantar (Papuan) family. Paper presented at the 40th Annual Meeting of the Berkeley Linguistics Society, University of California at Berkeley.

Schapper, Antoinette. 2014. Kamang. In Antoinette Schapper (ed.), *The Papuan languages of Timor-Alor-Pantar: Sketch grammars*, vol. 1, 223–274. Berlin: de Gruyter Mouton.

Schapper, Antoinette, Juliette Huber & Aone van Engelenhoven. 2017. The relatedness of Timor-Kisar and Alor-Pantar languages: A preliminary demonstration. In Marian Klamer (ed.), *The Alor-Pantar languages: History and typology*, 2nd edn., 91–146. Berlin: Language Science Press.

Siewierska, Anna. 2013. Verbal person marking. In Matthew S. Dryer & Martin Haspelmath (eds.), *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. http://wals.info/chapter/102.

Steinhauer, Hein. 2014. Blagar. In Antoinette Schapper (ed.), *The Papuan languages of Timor-Alor-Pantar: Sketch grammars*, vol. 1, 115–172. Berlin: de Gruyter Mouton.

Williams, Nicholas. 2016. *Kula*. Manuscript. Boulder.

Witzlack-Makarevich, Alena & Ilja A. Seržant. 2018. Differential argument marking: Patterns of variation. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *Diachrony of differential argument marking*, 1–40. Berlin: Language Science Press. DOI:10.5281/zenodo.1228243

Chapter 4

Spanish indexing DOM, topicality, and the case hierarchy

Chantal Melis
Universidad Nacional Autónoma de México

The Spanish language is known for its widespread phenomenon of *Differential Object Marking* (DOM). A particularly interesting feature of DOM in contemporary Spanish relates to the obligatory use of a double system of marking – a "flagging" preposition and an "indexing" clitic (Haspelmath 2005) – in the domain of the full personal pronouns. The prepositional marker goes back to the very beginnings of the language, whereas the cross-referencing strategy, also called *clitic doubling*, is the product of a much later development, which joining forces with the existing older form gave rise to the twice-marked pronouns. In this paper I focus on the origin of Spanish indexing DOM and, through a careful examination of the first contexts of use, I propose that the relevant notion of "topicality" implicated in the evolution of indexing DOM is not animacy, but has to do with the role participants play in the event structure and the organization of these roles into a topical case hierarchy (Givón 1976).

1 Introduction

It is known that Spanish has a robust system of *Differential Object Marking* (Bossong 1991; 1998). A particularly interesting feature of Spanish DOM is that some direct objects require double marking. This phenomenon characterizes the stressed object personal pronouns, which in present day Spanish impose the use of the preposition *a* along with the presence of an unstressed person form – a verbal clitic – showing the relevant agreement features with the pronominal object phrase:

(1) *Porque* *tú* ***me*** *am-as* ***a*** ***mí*** *¿no* *es* *cierto?*
because you.NOM I.ACC love-PRS.2SG ACC I not is certain
'Because you love me, right?' (1999, Jorge Volpi, En busca de Klingsor, CREA)

The preposition *a* represents the older and more basic instrument of Spanish DOM, traceable to the earliest texts. According to the hypothesis outlined in Pensado (1995b), and now commonly accepted (Torrego Salcedo 1999; Leonetti 2004; Iemmolo 2010), the

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development of *a* into a DOM marker has its roots in contexts where Latin *ad*, meaning 'with regard to, as to', indicated a shift of topic.[1] The topicalizing function of *ad* was passed on to various Romances via vulgar Latin – initially confined to the personal pronouns of first and second person in a dative or accusative role – and from there evolved towards the grammaticalized use of a differential object marking in Spanish (Pensado 1995b).[2]

More specifically, the history of Spanish *a* shows the evolution of a DOM marker extending gradually downwards along the animacy hierarchy, in close interaction with a parameter of definiteness (García & van Putte 1995; Melis 1995; Aissen 2003; von Heusinger & Kaiser 2005; Laca 2006). The evolutionary path emerges from comparing the situation reflected by the earliest available text (*Cantar de mio Cid*, dating most probably from around the turn of the 13th century; cf. Montaner 1993: 8) with that of contemporary Spanish. At the beginning, one observes a compulsory use of *a* with both the stressed personal pronouns and the human-referring proper names, as opposed to the incipient and optional marking of the common nouns indicating definite (sets of) individuals. In today's Spanish, on the other hand, following the progressive descent of the preposition from definite to non-specific indefinite persons, *a* introduces nearly all human objects, while the inanimate objects are usually left unmarked. To illustrate the prevailing situation in contemporary Spanish, Torrego Salcedo (1999: 1781–1782) offers this contrast:

(2) a. *Traj-eron* ***a*** *un amigo con ellos.*
bring-PFV.3PL ACC a friend with them
'They brought a friend with them.'

b. *Traj-eron una maleta con ellos.*
bring-PFV.3PL a suitcase with them
'They brought a suitcase with them.'

Spanish *a* thus profiles a well-attested path of evolution for DOM markers. Descending from an *as-for* topic expression of late Latin, the preposition is originally used to signal the promotion of a salient pronominal object referent to the status of clausal topic in a pragmatically marked construction. With the passage of time, however, as suggested by the earliest records of the Spanish language, the preposition evolves into a differential marking device extended to direct objects which are no longer topics, but which conserve

[1] The topicalizing function of Latin *ad* manifests itself in examples where the topic shifter forms part of a larger phrase (*quod ad me attinet, X* 'as far as I am concerned, X', *quod ad Xenonem, X* 'as for Xenon, X'), and in contexts where it is used alone (*ad ea autem, quae scribis de testamento, X* 'with regard to what you write about the will, X') (Pensado 1995b).

[2] Pensado reconstructs the historical path of Spanish *a* on the basis of a careful examination of Vulgar Latin and early Romance data, which support her hypothesis that the origin of *a* as a topic marker goes back to a construction of Vulgar Latin restricted to the personal pronouns of first and second person both dative and accusative; cf. *Ad mihi, (mihi) dixit* 'To me, he told (me)' or *Ad mihi, (me) amat* 'Me, he loves (me)' (Pensado 1995b: 203). Her proposal to situate the beginnings of Romance DOM in the area of the personal pronouns, as she notes, ties in with what other authors had pointed out in the past (Meier 1948; Rohlfs 1971).

features of topicworthiness such as animacy and definiteness (Iemmolo 2010).[3]

The second instrument of Spanish DOM, on the other hand, is the product of a more recent development, which the obligatorily *a*-marked strong personal pronouns begin to undergo around the turn of the 16th century, that is to say, during the transition period between medieval and renaissance Spanish (Keniston 1937: 83; Silva-Corvalán 1984; Rini 1991; Gabriel & Rinke 2010). As shown in (1) above, the new device consists of a coreferential clitic pronoun, morphologically bound (but not attached) to the verb. This phenomenon is known as *clitic doubling* (for the definition of the coreferential forms in terms of clitics, see §2), and the relation of clitic doubling to DOM has been acknowledged (Bossong 1998: 221–224). Indeed, the use of the coreferential pronoun in Spanish separates the higher-ranked pronouns, which display the clitic along with *a*, from the lower-ranked nominal objects, marked with *a* alone (human) or taking no marking (inanimate).

In Haspelmath's (2005: 2) terminology, Spanish *a* instantiates the "flagging" type of argument marking (= coding by case affixes and adpositions), whereas the clitic corresponds to the "indexing" type (= cross-referencing or agreement). From this perspective, the peculiarity of the stressed object personal pronouns of Spanish resides in conjoining two kinds of DOM: flagging DOM (*a*) and indexing DOM (clitic). Another way of referring to the double marking of the Spanish pronouns is proposed by Iemmolo (2014), who reserves the label DOM for the flagging type of marking and calls the other mechanism DOI (Differential Object Indexation).

The clitic doubling strategy employed for the purpose of Spanish DOM is the central topic of the present paper. Scholars have been interested in the question of why the personal pronouns became subjected to the new type of marking, and different hypotheses have been put forward (Silva-Corvalán 1984; Rini 1991; Gabriel & Rinke 2010). None, however, as we shall see, manages to satisfactorily account for the change associated with the turn of the 16th century. This leaves room for a new attempt at explaining how the change came about. The way I intend to approach the topic at hand is through a careful examination of textual sources in which the new type of marking has the character of an incipient phenomenon, affecting a few pronouns and leaving the rest untouched, under the assumption that defining what the selected few share in common may shed light on the original motivating force behind the change.

As background to the analysis I will present, two important facts have to be mentioned. First, it should be pointed out that the introduction of clitic doubling into the pronominal

[3] I must add that even though the split between human and non-human objects is held to define Spanish DOM (Leonetti 2004: 82) – the status of the non-human animate objects being unclear (von Heusinger 2008: 4) –, the system is actually much more complex owing to its sensitivity to various factors beyond animacy, such as the properties of definiteness and/or specificity of the object referents, the aspectual features of the predicate, the semantics of the event denoted by the verb, as well as the relation holding between the subject and the object. The interaction of animacy with these additional parameters, accounting for the appearance of unmarked human objects and *a*-marked inanimate objects in specific discourse contexts, has been examined in a number of studies with important contributions to our understanding of the intricacies of Spanish DOM (Kliffer 1984; Pensado 1995a; Torrego Salcedo 1999; Company Company 2002; Delbecque 2002; Aissen 2003; von Heusinger & Kaiser 2003; Leonetti 2004; García García 2007; 2014; von Heusinger 2008; among others).

domain did not imply a creation in the strict sense of the word; the coreferential form had a long history of appearing in topicalizing constructions, known as left- and right-dislocations, where it was used to bind a detached object constituent to the core clause. So it will be necessary to look at these structures in order to understand how they prepared the way for the development of indexing DOM with the pronouns.

Second, it has to be borne in mind that the stressed object pronouns affected by the change have been emphatic forms throughout the history of Spanish. Their selection in specific discourse contexts always signals a deliberate intention on the part of the speaker to highlight something about the referent of the pronoun. More will be said below on the split between stressed and unstressed forms within the Spanish personal pronoun system. For the moment, the fitting observation is that the development of clitic doubling as a device for DOM cannot be explained without taking into account the crucial emphatic value of the targeted pronominal items.

Anticipating the results of my analysis, I will argue that the emergence of indexing DOM in Spanish appears to have involved a notion of topicality, but not one in which animacy was the relevant feature, in contrast to *a*. As suggested by Givón (1976: 152), topicality should be visualized as encompassing a number of binary hierarchic relations, among which the author includes one that concerns the *role* of participants in the event structure. On the role dimension, entities are ranked according to the degree to which their participation contributes to the coming about of the event (more involved participant > less involved participant). This binary relation is assumed to underlie the case hierarchy (agent > dative > accusative), in which the more "topical" participants, in addition to being typically human and definite, rank above the accusative object from the point of view of their higher degree of involvement in the action. My aim is to show that the grammaticalization of indexing DOM in Spanish closely interacted with this specific dimension of topicality. The primary evidence for this proposal is that Spanish indexing DOM will be seen to favor the dative pronouns before generalizing to all personal object pronouns (indirect and direct). Further support comes from the later extension of indexing DOM to the indirect (not direct) object noun phrases.

The interaction between flagging and indexing DOM in Spanish thus offers a complex panorama of historical developments, which can be divided in three major stages:

- throughout medieval Spanish, flagging DOM and the indexing device (in topic constructions) operate independently from one another (see §3);
- in renaissance Spanish, indexing DOM becomes a grammaticalized feature of the personal object pronouns, both dative (marked by a homophonous *a* form) and accusative (obligatorily DOM flagged). This is the period in which the two types of DOM meet, and their convergence is the focus of the present paper;
- in modern Spanish, indexing DOM spreads to the dative noun phrases, whereas the nominal direct objects only show flagging DOM or are left unmarked (Melis & Flores 2009, and see below §4.1).

The paper is organized as follows. §2 provides a brief overview of the object personal pronouns of Spanish. In §3 the older use of the coreferential pronoun with dislocated object phrases is examined. §4 is dedicated to the development of Spanish indexing DOM: The general properties of the diachronic change are sketched in §4.1; previous approaches are discussed in §4.2; the hypothesis set forth in this paper is outlined in §4.3; the corpus of data is described in §4.4; and the analysis of the data is carried out in §4.5. §5 concludes with a summary of the paper.

2 The Spanish object person forms

For the purpose of this paper, a brief introduction to the Spanish personal pronoun system will be helpful. Of specific interest are the object pronouns, which show a division into stressed and unstressed forms. The former are referred to in terms of "full", "strong" or "tonic" pronouns, whereas the latter are called "weak" pronouns or "clitics". In Table 1, a simplified picture of the object paradigm based on Penny (1991: 119) is presented. It is important to observe (for the change to be discussed) that across the paradigm, with a few exceptions in the third person area, identical forms cover both the accusative and dative realizations of the pronouns.[4]

Table 1: The Spanish object person forms

		ACCUSATIVE		DATIVE	
		stressed	unstressed	stressed	unstressed
1 SG		*mí*	*me*	*mí*	*me*
2 SG		*ti*	*te*	*ti*	*te*
3 SG	masc.	*él*	*lo*	*él*	*le*
	fem.	*ella*	*la*	*ella*	*le*
	neuter	*ello*	*lo*	*ello*	*le*
1 PL		*nos(otros)*	*nos*	*nos(otros)*	*nos*
2 PL		*vos(otros)*	*(v)os*	*vos(otros)*	*(v)os*
3 PL	masc.	*ellos*	*los*	*ellos*	*les*
	fem.	*ellas*	*las*	*ellas*	*les*

When a language possesses a pronominal system with a similar division, it is usually the case that the unstressed, that is, phonologically attenuated, forms encode highly topical and cognitively accessible referents (Siewierska 2004: 174). This tendency is confirmed by Spanish, where the weak object pronouns are, and always have been, the

[4] The segments in parenthesis indicate changes that took place in late Old Spanish (end of 15th cent.), namely, the reduction *vos* > *os* and the expansion *vos* > *vosotros*, followed at a later stage by the analogical expansion *nos* > *nosotros*. I have excluded the contemporary deferential forms of address *usted* and *ustedes*. Nor does my overview mirror the early phenomenon of *leísmo* (which continues in standard Peninsular Spanish), whereby the dative form *le* is used as a direct object form with masculine referents.

canonical forms used to refer to the participants that are deictically or anaphorically anchored in the discourse (cf. *me vio* '(s)he saw me'; *lo vi* 'I saw him').

What did change in the course of time is the grammatical status of the weak object pronouns. These began as phonologically bound forms, which had to "lean" on a preceding or following word for accentual reasons, but enjoyed a certain degree of independence from a syntactic point of view. Over time, however, the weak object pronouns were led to transform into elements definable as clitics on the basis of their morphological binding to the verb (immediately preceding the finite verb or attached at the end of imperative and non-finite verbal forms). As discussed in the literature, the cliticization of the weak pronouns – product of a gradual loss of positional and combinatory options on the syntactic level – was completed by the early 17th century (Rivero 1986; Rini 1990; Fontana 1993; Fernández Soriano 1999; Nieuwenhuijsen 2006).

It is worth noting that the period during which the weak pronouns were evolving into clitics (15th–16th century) more or less coincides with that of the rise of indexing DOM. A relation between the two phenomena has to be established, since the development of a type of object-verb agreement in the area of the strong personal pronouns was no doubt facilitated by the newly acquired clitic status of the weak person forms (Rini 1990; Enrique-Arias 2003).

The strong object personal pronouns, on the other hand, behave like (prosodically and morphologically) independent noun phrases, associated with one peculiar feature: they are emphatic. So when a strong pronoun surfaces in discourse, some kind of special effect is intended, typically, a contrast: the individual encoded by the pronoun is compared or opposed to other referents, whether explicitly or implicitly (Luján 1999).

To illustrate, consider this pair of late medieval examples:

(3) a. *pues* *diz-es* *que* ***me*** *am-as*
since say-PRS.2SG COMP I.ACC love-PRS.2SG
'since you say that you love me' (15th c., Bursario, CORDE)

b. *miémbr-a-te* *que* *por* *am-ar* ***a*** ***mí*** *[…]*
remember-IMP-2SG.REFL COMP for love-INF ACC I
mat-aste *a* *tres* *hermanos* *míos*
kill-PFV.2SG ACC three brothers mine
'remember that for the sake of loving me […] you killed three of my brothers' (15th c., Bursario, CORDE)

In (3a) the weak form *me* corresponds to the way in which a first person functioning as direct or indirect object is expected to appear in most discourse contexts. But on occasion, as in (3b), the speaker chooses the tonic instead (accusative *mí* preceded by obligatory *a*), the emphatic force of which is in this case called upon to underscore the explicit contrast established between an act of love and a triple murder. The pronouns that will undergo clitic doubling are these emphatic forms.

3 Coreferential weak pronouns in left- and right-dislocations

In this section, left- and right-dislocated sentences motivating the occurrence of a coreferential pronoun are examined. They constitute a very old phenomenon that is present in the earliest Spanish texts and indeed goes back to Latin, where topicalized constituents were often accompanied by a resumptive pronoun (Pensado 1995b: 198). From the point of view of this study, the dislocations in question are of particular significance because scholars have relied on these pragmatically marked structures to explain the origin of Spanish indexing DOM. At the end of the section, the plausibility of tracing the indexing device back to the dislocations will be evaluated.

The most suitable text to examine the older function of the coreferential pronoun is the epic poem *Cantar de mio Cid*, especially rich in examples (Menéndez Pidal 1964: 323). These are built with different kinds of object phrases. Their common property lies in the peripheral position the object occupies on the left or right end, along with the occurrence of a coreferential pronoun in the core clause. For example, in (4), the DOM flagged direct object (*a las sus fijas* 'his daughters') has been detached to the left periphery and is resumed by the weak form *las*, which reproduces the case, gender and number features of the detached noun:[5]

(4) ***a*** ***las*** ***sus*** ***fijas*** | *en* *braços* ***las*** *prend-ía*
ACC the his daughters in arms they.ACC.FEM take-IPFV.3SG
'his daughters, he embraced them' (v 275)

The vertical bar in (4) symbolizes the caesura, indicative of an intonation break in the recitation (Gabriel & Rinke 2010: 71, with a reference to Fontana 1993: 263), and in this sense helpful for the recognition of a dislocated structure.[6] With respect to left dislocations, Lambrecht (1994: 183) points out that they are often used "to mark a shift in attention from one to another of two or more already activated topic referents". The *Cantar de mio Cid* illustrates this nicely insofar as many of its left dislocations involve central figures of the poem, for instance, the Cid's daughters, as in (4).

In (5), a DOM-flagged strong personal pronoun (*a vós* 'you') occupies the right periphery and is accompanied by the coreferential form *vos*:[7]

(5) *aquéllas* ***vos*** *acomiend-o* | ***a*** ***vós,*** *abbat* *don* *Sancho*
those.ACC.FEM you.DAT entrust-PRS.1SG DAT you abbot don Sancho
'I now entrust those [girls] to you, you abbot don Sancho' (v 256)

Right dislocations, also called afterthought-topics, are less easily recognizable in Spanish, because the detached object may appear as if it were occupying the canonical postverbal position (of direct and most types of indirect objects). In this example, however, the

[5]The examples of the *Cid* are cited from Montaner's (1993) edition.

[6]Menéndez Pidal (1964: 400) discusses another diagnostic for the identification of pragmatically marked structures in the *Cantar*, related to the position of the coreferential pronoun in the structure of the verse.

[7]In (5) the plural form *vos* is used as a deferential form of address.

correct analysis gains support from the presence of the caesura.[8] Right dislocations pose an additional challenge to the extent that their function in discourse continues to be a matter of some dispute. Broadly speaking, they are supposed to bear on the identity of the referent of the coreferential form in the core clause, adding explicitness for the benefit of the addressee (Lambrecht 1994: 2003), or, from a wider perspective, providing an informational "update" that is meant to replace, correct or partially adjust elements contained in the core clause (Escandell-Vidal 2009: 856–859, following Vallduví 1992). The right dislocations of the *Cid* would have to be examined in detail in order to verify these proposals.

Of greater interest to us is the fact that the detached objects in (4) and (5) are both marked with *a*. The co-occurrence of *a* and the coreferential pronoun in the dislocations of the *Cid* explains why it has been claimed that the two devices have a long history of working jointly in the service of Spanish DOM (Laca 1995; Melis 1995; Leonetti 2004; 2008).[9] Yet the truth is that flagging *a* and the resumptive weak form operate independently from one another, as the following data show. Indeed, in the poem, *a* marks the stressed personal pronouns and the human-referring proper names obligatorily and is used optionally with human definite nouns, but none of these objects are cross-referenced if they appear in a sentence bearing no sign of dislocation:

(6) *Oí-d* ***a*** ***mí,*** *Álbar Fáñez* / *e* *todos* *los* *cavalleros.*
listen-IMP ACC I Alvar Fañez and all the knights
'Alvar Fañez, and all the knights, listen to me.' (v 616)

And inversely, a resumptive pronoun tends to show up in dislocated structures, but if the topicalized element does not pertain to the class of direct objects that impose or attract flagging DOM, we find a coreferential pronoun without *a*, as exemplified by the non-specific human referents in (7a) and the inanimate entity in (7b):

(7) a. ***los*** ***moros*** ***e*** ***las*** ***moras*** / *vend-er* *non*
the moorish.men and the moorish.women sell-INF not
los *pod-remos*
they.ACC.MASC be.able-FUT.1PL
'the moorish people, we won't be able to sell them' (v 619)

b. *mas* ***el*** ***castiello*** / *non* ***lo*** *quier-o* *herm-ar*
but the castle not he.ACC want-PRS.1SG destroy-INF
'but the castle, I don't want to destroy it' (v 534)

[8] In modern spoken language, right-detached constituents are characterized by a number of defining prosodic features (Anagnostopoulou 1999: 765; Escandell-Vidal 2009: 852; Gabriel & Rinke 2010: 64–65).

[9] Some decades ago, a strong hypothesis regarding the interaction between clitic doubling and prepositional DOM received expression in what came to be known as "Kayne´s generalization", which stated that for an object noun phrase to be doubled by a clitic it had to be preceded by a preposition (Kayne 1975; Jaeggli 1982). The hypothesis has been refuted on the basis of empirical data – doubling clitics appear alone (Suñer 1988; Anagnostopoulou 1999; Leonetti 2008) – but it continues to raise expectations about potential co-occurrences of the two marking mechanisms.

Furthermore, cross-referencing pronouns are also found to interact, as in (8), with clausal object complements, which are never subjected to flagging DOM:

(8) *Ya* ***lo*** *ve-e* *el* *Cid* | ***que*** ***d-el*** ***rey*** ***non***
now it.ACC see-PRS.3SG the Cid COMP of-the king not
av-ié *gracia.*
have-IPFV.3SG grace
'Cid now knew it, that he was out of favor with the king.' (v 50)

In light of these data, one is able to conclude that *a* and the coreferential pronoun in the *Cid* have different functions. Whereas prepositional DOM marks the higher-ranked objects with human reference, the pronoun, unrelated to DOM, appears in pragmatically marked topic constructions, where its principal function is to bind the dislocated object constituent to the core clause (Keniston 1937: 84; Nocentini 2003: 109; Real Academia Española 2010: 757).[10]

It is possible that the widely used dislocations in the *Cid* should be viewed as lingering traces of the oral tradition that is assumed to have given shape to the epic poem. What is certain is that the medieval texts posterior to the poem display an extremely scanty use of topicalizing constructions, and as a direct consequence of this decline in frequency coreferential pronouns become equally rare. That is to say, *a* continues to extend downwards along the animacy hierarchy, but the objects are not cross-referenced since they are not dislocated. The perception that coreferential pronouns with (*a*-marked or unmarked) object constituents were not common during the post-*Cid* medieval period of Spanish is shared by all scholars who have dealt with this issue, in relation to flagging DOM (Laca 2006; von Heusinger & Kaiser 2005), or from the angle of indexing DOM (Silva-Corvalán 1984; Rini 1991; Fontana 1993; Eberenz 2000; Gabriel & Rinke 2010; Vázquez Rozas & García Salido 2012). This does not mean that topic constructions with coreferential pronouns died out. Actually, they continue to be in use today, but they appear as infrequently as in the medieval texts (for some quantitative data on fronted objects in contemporary Spanish, see García-Miguel 2015: 215–216).

So the question is whether the use of the coreferential pronoun in the examined constructions paved the way for the rise of indexing DOM, associated with the second historical period of the Spanish language. It is tempting to motivate a link between the older use of the pronoun and the later development, in view of Givón's (1976) hypothesis about the rise of (subject and) object agreement markers as being due to a reanalysis

[10]Worthy of note is the fact that the human definite objects, which in the *Cid* are optionally flagged, often occur in (left) dislocation structures accompanied both by *a* and the coreferential pronoun. When they are not topicalized, besides lacking the pronoun, of course, these objects are also more likely to appear without *a* (Melis 1995). A plausible explanation for this phenomenon is that the incipient use of *a* with these objects still depends, in some measure, on the establishment of the referent of the object as the pragmatic sentence "topic", and may therefore be viewed as a vestige of the beginnings of flagging DOM in the Romances (see §1). The topicalizing phenomenon with the human definite objects in the *Cid* has been instrumental in creating the wrong impression that the preposition and the weak pronoun have worked jointly for DOM throughout the history of Spanish.

of anaphoric pronouns in "over-used" topic-shift constructions, meaning, in constructions where the pragmatic motivation for the marked word order had lost transparency. Under Givón's (1976: 156–157) proposal, afterthought-topic constructions (right dislocations) are likely to be particularly relevant to the development of object agreement (cf. *I saw him, the man* > *I saw-him the man*).

It will be seen below (§4.2) that Givón's hypothesis underlies some of the proposals that have been put forward to explain the rise of indexing DOM in Spanish. Nevertheless, as argued in Vázquez Rozas & García Salido (2012: 279), the envisaged scenario cannot be made to fit the Spanish data with ease, considering that the poorly documented topic constructions of medieval times do not evoke the "overuse" established as a condition for the reanalysis of the anaphoric pronouns. Additionally, it turns out that the examples appearing in the medieval sources (Vázquez Rozas & García Salido 2012: 279, with a reference to Riiho 1988) often display a dislocated subordinate clause cross-referenced with the neuter pronoun *lo*, as in (8) above. An object of this nature is not what we think of when defining the notion of topicality, nor does it in any way resemble the strong personal pronouns that will eventually attract the coindexing strategy.

In short, the difficulty of tying indexing DOM immediately to the medieval dislocations is real, and everything seems to point in the direction of an innovative process of change, whereby the function of an available form – a coreferential pronoun – was expanded to satisfy a different purpose.

4 The grammaticalization of Spanish indexing DOM

4.1 Preliminaries

The rise of Spanish indexing DOM can be traced back to the turn of the 16th century, when an increase in the use of a weak pronoun with a (necessarily) DOM-flagged strong object personal pronoun becomes noticeable (Keniston 1937: 83; Silva-Corvalán 1984; Rini 1990; Gabriel & Rinke 2010). This increase is the signal of a change in process that would culminate with the grammaticalization of object agreement in the pronominal domain, completed more or less by the end of the 17th century.[11]

The examples of doubled pronouns in (9) come from the CORDE materials examined for the purpose of this study, on which more will be said below (§4.4):

[11]The proposed date of completion varies. Some authors associate it with the end of the 16th century, while others detect non-doubled pronouns until the 18th century (Silva-Corvalán 1984; Rini 1990; Gabriel & Rinke 2010; Vázquez Rozas & García Salido 2012). The discrepancy hinges on the nature of the data. As we will see below, the textual sources suggest that doubling was used with variable frequency depending on the individual speakers/writers. What is clear is that clitic doubling grammaticalized a bit more slowly with the third person pronouns than with the speech act participants (see §4.4 and footnote 17). My own perusal of data of the CORDE motivates my stating that instances of non-doubled pronouns are extremely rare after the 17th century.

(9) a. *Por cierto, que* ***a mí*** ***me*** *pes-a mucho de su muerte.*
of course that DAT I I.DAT grieve-PRS.3SG much of his death
'Of course, I very much lament his death.' [lit. 'it grieves me of his death'] (1555, Espejo, CORDE)

b. *Señor, ¿por qué* ***me*** *d-ais cargo* ***a mí****?*
sir why I.DAT give-PRS.2PL charge DAT I
'Sir, why do you accuse me?' (1517, Arderique, CORDE)

c. *El que* ***a mí*** *aquí* ***me*** *trux-o no es el diablo que diz-es […]*
The who ACC I here I.ACC bring-PVF.3SG not is the devil that say-PRS.2SG
'The one who brought me here is not the devil as you say' (1504, Esplandián, CORDE)

The examples exhibit strong pronouns that are collocated in different positions, without suggesting the presence of a recognizable dislocation. I found this to be true in the majority of cases.[12]

Certainly, fronted pronouns, as in (9a), are common, but they are selected by verbs with special characteristics like *pesar* 'to grieve, to lament', whose experiencer argument has always had a tendency to favor the sentence initial position (Melis & Flores 2013). During the period under study, the pronominal experiencer of these verbs is frequently preverbal including when it is not doubled (see example (18a) below). Other pronouns occupy the sentence final position, as in (9b), and may provoke ambiguity (perhaps a right dislocation), although nothing in their behavior differentiates them from the non-doubled tonic phrases which likewise appear at the right-most end (see example (14a) below).[13] The remaining pronouns occur in the middle of the sentence, as in (9c), and are impossible to confuse with a detached constituent.

The doubled pronouns also differ as to their status in the information structure of the sentence. From the cognitive point of view, the entities coded in the form of personal pronouns are "prominent", in the sense that the referent of the pronoun, beyond its presupposed condition of familiarity, is also the current center of attention of the speech

[12] Some dislocated structures did show up. In the following example, *a mí* is detached to the left and the core clause begins with the subject pronoun *uno*: *Por cierto a mí uno solo me perdió, mas yo he perdido a muchos* 'Actually, as far as I am concerned, only one fellow ruined me, whereas I ruined many' (1520, *Ysopo,* CORDE). For a right dislocation, see footnote 13 below. The dislocations were eliminated from my analysis.

[13] A right dislocation was detected in a few examples, as in this one: *porque Cortés me mostró la misma carta a mí y a otros conquistadores* 'because Cortés showed me the same letter, to me and to other conquistadors' (1568–75, *Historia*, CORDE). The detached segment shows a coordinated structure in which the tonic pronoun appears together with a reference to another participant not evoked by the weak pronoun. This may be interpreted as an "update" of referential character aiming at rectifying – completing – the information given in the core clause, which is characteristic of right dislocations as discussed above.

participants (Anagnostopoulou 1999: 770; cf. Lambrecht 1994: 94). This explains the common assumption that pronouns are topics. However, with respect to the information structure of a clause, pronouns may stand in different relations to the proposition, and may appear in the focus domain of an utterance, as part of the comment or as the sole constituent in focus (Lambrecht 1994: 128–130).

In fact, since we are dealing with stressed pronouns, a focus status would typically be expected (Siewierska 2004: 183). But in Spanish the strong personal pronouns are not necessarily focal (Luján 1999), and in the data I examined, as it turns out, a clear focal interpretation imposed itself in a few cases only. The pronouns were always contrastive foci. (10) may serve as an example:

(10) *y el visorey respond-ió: "Matar-me h-an si*
and the viceroy answer-PVF.3SG kill.INF-I.ACC have-PRS.3PL if
salg-o." Aliaga dij-o: "Primero ***me*** *matarán* ***a*** ***mí.***"
leave-PRS.1SG Aliaga say-PVF.3SG first I.ACC kill-FUT.3PL ACC I

'and the viceroy answered: "They will kill me if I come out". Aliaga said: "They will kill me first".' (1555–84, Guerras, CORDE)

In most cases, the doubled pronouns from my textual sources function as pragmatic topics. Some of them invite to be characterized in terms of "secondary topics" (Nikolaeva 2001). This analysis is suggested for pronouns occurring in a clause which "in addition to conveying information about the topic referents conveys information *about the relation* that holds between them as arguments in the proposition" (Lambrecht 1994: 148). Consider (11):

(11) *A esta Luscinda am-é, qu-ise y ador-é desde*
ACC this Lucinda love-PFV.1SG like-PFV.1SG and adore-PFV.1SG since
mis tiernos y primeros años, y ella ***me*** *qu-iso* ***a***
my tender and first years and she.NOM I.ACC like-PFV.3SG ACC
mí, *con aquella sencillez y buen ánimo que su poca edad*
I with that simplicity and good heart that her little age
permitía.
allowed

'I loved, cherished and adored Lucinda since my early tender years, and she loved me with the simplicity and noble heart of her youth.' (1605, Quijote, CORDE)

Other pronouns, in spite of being objects, must be viewed as encoding the entity the proposition expressed by the sentence is primarily about. Pronouns with a primary topic role, as in (12), are very common in my data and will be discussed below (§4.5):

(12) *que nunca sent-imos rumor de gente y* ***a mí me***
because never feel-PFV.1PL murmur of people and DAT I I.DAT
parec-ió que deb-íamos sal-ir d-el pueblo de aquella
seem-PFV.3SG that have-IPFV.1PL leave-INF from-the village of that
manera
manner

'because we never heard voices and I thought [lit. 'it seemed to me'] that we had to leave the village that way' (1519–26, Cartas, CORDE)

Space limitations prevent me from showing that the strong pronouns which do not undergo doubling while the change is in process display a similar panorama of distribution between topic and focus relations. The motivation for indexing DOM, in other words, does not seem to have depended on the pragmatic structuring of the utterances.

Let us stop one moment to consider the functional shift which the coreferential pronoun is experiencing in examples like the ones shown in (9) to (12). It is clear that binding a dislocated object phrase to the core clause no longer corresponds to the function it fulfills. The coreferential person form now co-occurs with a strong pronoun within one and the same syntactic domain, as opposed to the situation of medieval times when in this type of pragmatically unmarked or "neutral" environments the weak object pronoun and the strong personal pronoun were in complementary distribution (*me* or *a mí*, not both).

The functional shift should be thought of in terms of a gradual process. In the initial phase, the doubling pronoun must have been felt as redundant. Indeed, redundancy will play a crucial role in the hypothesis I will outline in §4.3. But the doubling pronoun eventually becomes categorical and gives rise to a phenomenon of coindexing on the verb which has come to be viewed as an instance of object-verb agreement (Suñer 1988; García-Miguel 1991; Bogard 1992; Fernández Soriano 1999; Franco 2000). Let us recall in this regard (§2) that the grammaticalization of indexing DOM in the pronominal area unfolded in parallel to the cliticization of the Spanish weak pronouns, a development which makes it easy to defend the agreement analysis: the weak pronoun is morphologically bound to the verb, forming with the "target" (Corbett 1983) of the agreement relationship a phonological unit, without being attached to it like an affix.[14]

In addition to enabling the grammaticalization of object agreement in Spanish, the conversion of the weak pronouns into clitics may have contributed to the relative swiftness with which coindexed strong personal pronouns became the norm. The time span reflected by written materials, as mentioned, covers a period of more or less two cen-

[14] As already indicated, in the exceptional case of the imperative and non-finite verbal forms the Spanish clitics are suffixed; cf. *háblale* 'talk to him', *quiere verme a mí* 'he wants to see me'. In fact, arguments have been advanced to justify the view that the Spanish clitics behave like inflectional affixes, on a par with the subject agreement suffixes appearing on the verb (Alarcos Llorach 1980; Bogard 1992; Fontana 1993; Enrique-Arias 2003), but not everyone agrees with this analysis (Aijón Oliva & Borrego Nieto 2013, among others). The lack of consensus has much to do with the fact that the weak forms, in the majority of their occurrences, function as anaphoric pronouns encoding syntactic arguments. They are "ambiguous" (Siewierska 2004: 126) agreement markers in this sense.

turies. We will also see that clitic doubling was generalized at different rates depending on the individual speakers/authors, and in some cases very quickly (§4.5).

Two essential facts have to be kept in mind for a thorough understanding of Spanish indexing DOM, namely, that clitic doubling spread to accusative and dative tonics alike, and that once it became established with the personal pronouns it continued to evolve towards the nominal *indirect* object.

Disregarding the second phenomenon, one could argue that indexing DOM was extended to the dative object pronouns owing to the absence of formal case distinctions within the personal pronoun paradigm, as seen above (§2). The neutralization of the split between accusative and dative would have taken place in accordance with the general properties of Spanish, a language in which the boundary between the two grammatical object functions is not sharp (García-Miguel 2015). From this perspective, one could then sustain that indexing DOM, irrespective of case considerations, and much like flagging DOM, began with the personal pronouns because the participants encoded by these forms are human, definite, and moreover highly prominent in discourse, all of which justifies their superior ranking in the universal hierarchy of topicality. As to the question of why a new device was recruited to signal differential object features already marked with *a*, one could invoke the need for a "renewal" of DOM, in the sense that the clitic helped reestablish the original distinction between pronouns and non-pronouns which had existed before *a* was extended to some of the accusative nouns (§1).

The second phenomenon, however, forces us to modify these assumptions. Indeed, if the new marking had been fundamentally motivated by the pronominal features of animacy, definiteness and discourse prominence, one would have expected a development more in line with that of flagging DOM. Recall that *a* began as a topicalizer which did not differentiate either between accusative and dative pronouns. In its descent towards the non-pronouns, along the animacy hierarchy, *a* was directed at the more topical human and definite accusatives, and was not extended to the typically human and definite datives, because the Spanish datives were already case-marked with a homonym of flagging DOM (deriving from the locative uses of Latin *ad*). In the case of indexing DOM, however, nothing prevented the clitic from moving along the same hierarchy to the whole range of more topical nouns, which would have included the datives and also many of the by then *a*-flagged accusatives. Instead, the clitic proceeded selectively, picking out the dative nominal with which it came to establish a systematic relation in the course of time (Silva-Corvalán 1984; Rini 1991; Melis & Flores 2009; Vázquez Rozas & García Salido 2012). As a result of this expansion, clitic doubling is at present obligatory or strongly preferred in most dative contexts in all varieties of Spanish (Fernández Soriano 1999: 1250), thus functioning as a perfectly entrenched indirect object agreement marker in the opinion of most scholars working on Spanish.[15] An example is given in (13):

[15]I have to mention that in some dialects, most notably in Argentinian Spanish, the doubling clitic is sometimes used with nominal direct objects. There have been different attempts at explaining the triggering conditions for the optional use of the clitic in these contexts, but the proposals suggest a total lack of agreement (see Belloro 2007 for a good overview of the divergent hypotheses, ranging from "topic" to "focus", and from "presupposed" to "new" entities, among other claims; cf. Sánchez & Zdrojewski 2013 for additional references). What seems clear is that the regional phenomenon obeys principles of its own, different

(13) *El padre Miguel* ***le*** *entreg-ó* ***a*** ***Sole*** *una pequeña campana de bronce.*
the father Miguel she.DAT give-PFV.3SG DAT Sole a small bell of bronze
'Father Miguel gave Sole a small bronze bell.' (1999, González, Quién como Dios, CREA)

In this example, the recipient argument *Sole* is introduced by the case-marking preposition *a*, and the product of the modern extension of indexing DOM to the dative nominals is seen in the cross-referencing dative clitic *le*. Hence, within the nominal area, clitic doubling today also functions as a case marker, opposing datives (*a* + clitic) to accusatives (*a* or Ø).

In his paper on the rise of object agreement, Givón (1976: 165) remarks on the tendency for dative to take precedence over accusative agreement in languages in which the accusative and dative objects are equally case-marked (or unmarked). And the author also notes (Givón 1976: 169) that if the agreement system is allowed to mature, "the agreement primacy of one (mostly the dative) over the other becomes effectively the signal differentiating the object cases from each other". On this view, Spanish would have evolved following a universal tendency.

However, typological research carried out during the last few years has demonstrated that languages with indirective alignment like Spanish do not illustrate a situation in which the dative is indexed and the accusative is not (Haspelmath 2005: 12). So weighed against this new piece of evidence, the dative case marker Spanish developed through indexing represents "a typologically anomalous fact" (García-Miguel 2015: 232).

To account for this anomaly, different explanations have been proposed. It is possible that dative indexing in Spanish arose as a means to promote oblique-like arguments to the level of core participants (García-Miguel 2015: 232–233). It has also been suggested that through the dative clitic a case distinction was reinforced in a language which has met with difficulty in keeping its two object categories apart (Melis & Flores 2009). Whatever the explanation, the point of major interest for this study is that the dative orientation of the subsequent development of indexing DOM in Spanish implies a distinction with strong ties to a concept of grammatical case functions. This property cannot be ignored when one tries to account for the emergence of Spanish indexing DOM.

4.2 Previous approaches

Before I present my analysis, a brief review of previous approaches to Spanish indexing DOM is in order. Under Silva-Corvalán's (1984) proposal, based on Givón (1976), Spanish clitic doubling shows a phenomenon of topic-verb agreement evolving into an object agreement marker, sensitive to the relative topicality of the object phrases. To sustain

from those underlying standard flagging and indexing DOM, since the doubling clitic occurs rather freely with inanimate entities and allows for these to be devoid of *a*.

her proposal, the author observes that in the medieval texts, where – she acknowledges – doubling is scant, the objects that favor the occurrence of the clitic are fronted. From these topicalizing structures, the clitic spreads to the personal pronouns, located in the upper region of the universal hierarchy of topicality, and later moves on to the nominal indirect object, overwhelmingly human and definite, and in this sense more topical than the direct object, which, as Silva-Corvalán (1984) argues, tends to be non-human and indefinite.

Although the proposal is attractive, I have already commented (§3) on the difficulty of establishing a direct connection between indexing DOM and the sparingly used topic-shift constructions of earlier times. Another problem lies in the crucial dependence of this account on the topical features of animacy and definiteness. As indicated in the preceding section, if these features had been the driving force one would have expected clitic doubling to spread not just to the dative nouns but also to the similarly human and definite *a*-marked accusatives. Finally, Silva-Corvalán's (1984) hypothesis disregards the fact that clitic doubling in the pronominal area begins as a highly selective process that picks out a few personal pronouns only (see §4.5), thus making it evident that some additional factor beyond the shared topicality of the pronouns is at play.

Gabriel & Rinke's (2010) thesis – along the lines suggested by Givón (1976) – is that object agreement in Spanish derives from a reanalysis of the right-dislocated topic structures of the medieval era. The authors work under the assumption that the coindexed objects of modern Spanish are "preferably construed as belonging to the focus domain" (Gabriel & Rinke 2010: 62), and argue that the proposed reanalysis is able to explain why topical participants, such as the personal pronouns and the human/definite dative nouns, occur in clitic doubling constructions in which they are assigned focus status.

One weak point of this thesis relates to the presupposed focus interpretation of the doubled objects, which suits the dative nouns far better than it does the personal pronouns. Indeed, datives in Spanish are typically coded in the form of clitics, because their referents are prominent in the discourse, and when they appear as noun phrases they tend to (re)introduce "new" entities which are likely to form part of the comment (Vázquez Rozas & García Salido 2012: 286–287), but the personal pronouns, as seen in §4.1, cannot be assumed to function as foci on a regular basis. The more important objection to be raised, however, has to do with the choice of the historical data, strongly influenced by the focus thesis and represented by *postverbal* objects only (Gabriel & Rinke 2010: 75). It is clear that the skewed character of the sample must have seemed to lend support to the reanalysis of right dislocations, yet this was done at the expense of doubled objects occurring in other positions, which were simply left out of the study.

Approaching Spanish indexing DOM from a different perspective, Rini (1991) takes the emphatic/contrastive property of the strong personal pronouns as his point of departure, and proposes that the use of the doubling clitic was developed as a means to compensate for the gradual loss of emphasis which the tonics had suffered over time. On this view, the duplicating element was recruited to form a construction with patently redundant attributes, the effect of which would be able to ensure the emphatic value of the strong pronominal object. As supporting evidence for the hypothetical loss of emphasis, Rini

mentions the growing tendency for the dative tonics to occupy the preverbal position starting from the 14th century (Rini 1991: 277). The preverbal datives are assumed to represent left dislocations (but recall example (9a) above), and are regarded by the author as instantiating an alternative strategy to clitic doubling, deployed for the same purpose of reinforcing the weakened emphasis of the strong personal pronouns.

It will be seen below that I agree with Rini in giving importance to a notion of redundancy as a way of explaining the origin of Spanish indexing DOM. But I do not believe that a loss of emphasis was at issue. The gradual process oriented towards certain types of case roles, which will be analyzed below, suggests otherwise. The major problem here, however, has to do with the expansion of clitic doubling to the dative nouns. The author himself recognizes the challenge the diachronic evolution of the clitic poses to his thesis "since NP duplication cannot be assumed to have ever been emphatic" (Rini 1991: 282), and he is forced to speculate that the nominal indirect objects were submitted to doubling "by analogy" (Rini 1991: 282).

To sum up, our survey of previous approaches to Spanish indexing DOM leads us to conclude that there remain important aspects linked to the development of this phenomenon which have not been fully elucidated.

4.3 Hypothesis: the topic case hierarchy

My analysis starts from the observation that the stressed object personal pronouns with which Spanish indexing DOM arises around the turn of the 16th century encode discourse prominent referents – all are highly topical in this sense – and in addition share the same emphatic form that is indicative of the presence of a contrast drawn between the referent of the pronoun and other individuals.

To answer the question of what may have triggered the innovative use of indexing DOM with the tonic personal pronouns, we first have to define the value the coreferential pronoun supplies to the construction. As discussed above in §4.1, the use of the coreferential pronoun in the innovative contexts no longer hinges on the occurrence of dislocated objects, and yet, at the same time, we are aware of the fact that the pragmatically marked structures of medieval times provide the single source of environments in which a prior use of coreferential pronouns was found. This gives us reason to turn to these structures to ask if something in the behavior of the coreferential pronoun might explain the new function it came to develop with the strong object personal pronouns. One good justification for this is that processes of change have been described as being "economical", to the extent that diachronic changes have a tendency to seize upon existing forms in a language, which are reused for new purposes (Hopper & Traugott 2003: 73).

My claim is that the relevant property we are looking for lies in the fact that the dislocated sentences of medieval times are characterized by the *double mention* of one and the same referent. Although it is evident that the double mention is syntactically motivated, it is no less true that it has the effect of enhancing the prominence of the topic participant in question. From this perspective, one may therefore suggest that the dou-

bling clitic was introduced in the area of the strong personal pronouns as a means of drawing special attention to a referent by mentioning it twice, i.e. through redundancy. As Pulgram (1983: 41) cited by Rini (1991: 281) points out, in any of its forms a redundant construction "aims at a kind of greater explicitness, emphasis, preciseness", without necessarily providing a clue as to what is being emphasized.

Defining the communicative intention of a redundant construction calls for a detailed examination of the contexts in which it occurs, to be compared with the use of analogous expressions lacking the redundant element. The comparative analysis of doubled and non-doubled pronouns to be presented in §4.5 will put in evidence that the "redundant" coreferential pronoun was initially used in specific discourse contexts where it served the purpose of emphasizing the subjective involvement of the personal pronoun referent in the designated verbal situation.

This original bias towards the *role* of the object participant in the event structure establishes the scenario for the development of indexing DOM in Spanish, from the emergence of its use with the personal pronouns until its conversion into a case marker with the lexical indirect object. As mentioned in §1, the development at issue directs us to a specific dimension of topicality, according to which the property of being "topical" is evaluated with regard to the degree of involvement of a participant (more involved participant > less involved participant) and functions as the parameter governing the case hierarchy (agent > dative > accusative) (Givón 1976).

4.4 The data

For the purpose of my study, a corpus of data was formed with examples retrieved from the electronic data base CORDE. Since the rise of Spanish indexing DOM is associated with the transition decades between the 15th and the 16th century, the first materials I reviewed were several works of the late 15th century. The sample included the play *La Celestina. Tragicomedia de Calisto y Melibea* by Fernando de Rojas (1499–1502) and a number of narrative and historical texts produced between the years 1480 and 1499. The comparison between textual sources made plain that doubling pronouns in the *Celestina* were more frequent than in the materials which did not intend to reflect "oral" productions to the same degree. To give an example, the first person pronoun *a mí* 'me' in the *Celestina* was doubled in almost 60% of its occurrences (26/44), as opposed to 26% of duplications (25/97) in the narrative texts and 16% of doubled *a mí* (11/67) in the historical works. These results suggested that the innovative use of the coreferential pronoun – like most changes – got a firm footing in spoken language before finding its way into writings. On the basis of these results, and given my interest in exploring the beginnings of indexing DOM, the decision was made to keep the more conservative texts for this research. Confronting theater plays with variable doubling would have been another possibility, of course, but those available from the CORDE for the period under study showed indexes of frequency similar to, or higher than, the percentages of the *Celestina*.

The doubling data from the *Celestina* also seemed to suggest that indexing DOM with the pronouns began as a type of *ego*-centric strategy (or one involving the speaker/hearer

dyad, but second person tonics were too scant to appreciate this). Thus, in comparison to *a mí*, doubled in 60% of the examples, the third person singular pronoun (*a él* 'him' / *a ella* 'her') only yielded 30% of duplications (7/23). These results motivated the decision to organize the study around the first person pronoun which had played a leading role in the process of change. Dealing with a single form, to my mind, offered the additional advantage that a more homogeneous picture of the development of indexing DOM could be obtained, by excluding potential variables connected to the distinct persons.

In this way, the definitive corpus of data came to consist of 794 tokens of (doubled and non-doubled) *a mí*, extracted from 14 narrative and historical works covering the period between 1482 and 1605. In Table 2 I show the distribution of clitic doubling associated with each of the texts I examined. It needs to be noted that the quantitative profiles vary considerably in spite of the temporal proximity of the texts. We may interpret the differences as reflecting individual preferences, which are not unusual when a change is in progress.[16] At the same time, we cannot ignore the fact that, if viewed as a whole, the texts project the image of a rather quickly unfolding change.

For the sake of my analysis, the textual sources were divided in three sets according to the indexes of duplication: no more than 30% of duplication, around 50%, and a near categorical phenomenon of clitic doubling with the first person.

4.5 Analysis and discussion

I have advanced the hypothesis that indexing DOM in Spanish originated as a means to give the highest degree of prominence to a referent's subjective involvement in the action. This is achieved through a strategy of double mention, whose redundant value is exploited to create the desired emphasis. In order to verify the hypothesis, the textual sources belonging to the first set will be examined. They can help us track the beginnings of indexing DOM since doubling in these works is still exceptional. We will proceed by having a look at several pairs of examples.

The first pair is shown in (14):

(14) a. *Y si culpa tiene Fortuna, no la pongas* ***a mí****.*
And if Fortune is to blame, don't put the blame on me.' (1495, Grimalte, CORDE)

b. *Porque entonces era enemigo queriendo cobrar de ti aquello que ya cobré, cuya causa* ***a mí me*** *puso descanso y a ti estos sospiros que tienes. Y si lloras lo que conmigo perdiste, yo asimesmo lo que contigo gané.*
'Because at the time I was your enemy, wanting to get from you that which I finally got, an outcome that gave me peace [lit. 'put peace on/to me'] but left you with these sighs. And if you bemoan what you lost with me, I cry all the same over what I won with you.' (1495, Grimalte, CORDE)

[16] Additionally, as suggested by the anonymous reviewer, the variation in terms of doubling frequencies may also be due to the involvement of distinct textual traditions in the examined sources. This is a question of great interest, which, unfortunately, lies beyond the scope of this paper.

Table 2: The distribution of clitic doubling with the personal pronoun *a mí*

			DOUBLING	
DATE	TEXT	REGISTERED TOKENS	NUMBER	PERCENT
LOW INDEX OF DOUBLING				
1482–92	*Amadís*	91	27	30
1495	*Grimalte*	58	6	10
1501	*Tristán*	73	7	10
1520	*Ysopo*	47	12	26
	AVERAGE	269	52	**19**
INTENSE COMPETITION				
1504	*Esplandián*	39	18	46
1516	*Floriseo*	46	25	54
1517	*Arderique*	47	21	45
1555	*Espejo*	99	59	60
1560	*Crónica*	23	14	61
	AVERAGE	254	137	**54**
GENERALIZED DOUBLING				
1519–26	*Cartas*	41	37	90
1553–84	*Guerras*	33	30	91
1568–75	*Historia*	74	68	92
1595	*Granada*	27	24	89
1605	*Quijote*	96	92	96
	AVERAGE	271	251	**93**

In both examples *a mí* functions as the dative argument of *poner* 'to put something on someone', and in both cases the choice of the strong pronominal has been motivated by the expression of a contrast (Fortune vs. me, me vs. you). The non-doubled use in (14a) represents the normal way of encoding the object pronoun at the time. By comparison, the context in which (14b) is inserted contains a far more elaborate opposition between the speaker's personal memories of a bygone love and the experience of the beloved one. In this context, the redundant function of coreferential *me* is called upon to center the attention on the subjective experience of the speaker.

The utterances in (15) are produced by the same character of the textual source, a rejected lover.

(15) a. *Mas esto **a mí** acaescer no puede, segunt el precio que ya me costaes y aún no sois mía.*

'But this cannot happen to me, since you've already costed me a fortune and you are still not mine.' (1495, Grimalte, CORDE)

b. *y así como aquellos que por faltas suyas vergonçosos buelven a sus tierras, tal* ***a mí me*** *acaesció, que con menos favor que partí me buelvo a los reinos dEspaña y castellana tierra donde yo natural era.*

'and like those who due to errors of their own return to their homeland with shame, so it happened to me, who returns to the kingdom of Spain and my native Castile having much less in my favour than when I left.' (1495, Grimalte, CORDE)

(15a) follows a statement as to the fact that people easily let go of things that were easily obtained, and opposes the situation of the speaker, who cannot give up something that is still not his. The event alluded to in (15b) is more tragic: The speaker returns from a failed mission knowing that the woman who rejects his advances has conditioned a potential change in her attitude on the successful outcome of the assignment she herself imposed. The double-mention strategy in this example serves to emphasize the feelings of shame and despair which underlie the comparison with other defeated individuals.

Now consider (16):

(16) a. *Suplico ante tu excelente majestad que otorgues* ***a mí****, tu servidora, esta gran merced*

'Appearing before your excellent majesty I beg you to grant me, your servant, this great favour' (1520, Ysopo, CORDE)

b. *Que si Dios* ***a mí*** *de sus gracias alguna parte* ***me*** *diera, yo soy cierto que vos ya fuérades mía*

'If God had given me a fraction of her [Fiammetta's] talent, I am certain that you would be mine by now' (1495, Grimalte, CORDE)

The non-doubled tonic occurs in a petition addressed to Jupiter, where the contrastive value of the pronoun is used to emphasize the distance that separates the humble petitioner from the king of gods. In the emotionally charged context of (16b), on the other hand, a doubled tonic surfaces. The speaker is the rejected lover of (15), who in this passage laments his not having been blessed with the gift of eloquence, another condition imposed by the beloved for her to yield to his advances. This explains both the comparison with Fiammetta, who does possess the gift, and the use of the redundant construction as a means of underscoring the fatal shortcoming that condemns the speaker to a life away from the woman he loves.

The verb *parecer* 'to seem' is involved in the following choice between uses:

(17) a. *¡Por Dios -dixo Gorvalán-,* ***a mí****paresce locura en querer probar todas las aventuras!*

'For God's sake -Gorvalan said- it seems madness to me wanting to have a taste of any kind of adventure!' (1501, Tristán, CORDE)

b. *En el nombre de Dios -dixo el Cavallero de la Verde Spada-, ésse* ***me*** *pareçe* ***a mí*** *el mejor acuerdo, porque, ahunque el Emperador sea mayor que vos, y tenga más*

gentes, para doze cavalleros tan buenos se fallarán en vuestra casa como en la suya.

'In the name of God –the Knight of the Green Sword said- this seems to me the best resolution, because, although the Emperor is older than you, and has more troops, for a fight with twelve knights you'll find as good ones among yours as he among his.' (1482–92, Amadís, CORDE)

(17a) and (17b) communicate a personal state of mind with respect to a proposal set forth by the interlocutor. In the lines preceding (17a) Tristan expresses his desire to go and rescue a noblewoman in distress, to which the speaker opposes his contrasting view on the matter with a simple *a mí*. In (17b), the king's project to war against the twelve knights of the emperor motivates a fully supportive ("the best resolution") and elaborated upon ("because…") response, in which the doubling form brings additional emphasis to the degree to which the speaker approves of the decision for war.

My last examples are constructed with the verb *placer* 'to please, to like', which in certain types of contexts comes closer to expressing a notion of will. This is especially true in dialogues where *placer* communicates the speaker's consent to a request or agreement with a proposal, and where, depending on the case, slightly different shades of meaning may emerge ('it pleases me', 'I want to', 'it is my will', 'I agree', etc.). In such environments the stimulus argument is often omitted, being recoverable from the context:

(18) a. *E dixo Tristán: -**A mí** plaze.*

'And Tristan said: "It pleases me".' (1501, Tristán, CORDE)

b. *E el rey dixo: -**A mí me** plaze, e fago gracias a Dios de tamaña merced como me á fecho.*

'And the king said: "It pleases me, and I thank God for doing me this great favour".' (1501, Tristán, CORDE)

The sentence with the non-doubled pronoun is an expression of agreement with a travel mate's proposal to split up and go separate ways. (18b) is the king's response to a request for his daughter's hand, occurring at the end of a dialogue in which the father reiterates his consent, as well as his delight in the thought that his daughter will marry Tristan. The redundant construction contained in the response is a way of emphasizing the speaker's internal state of profound happiness.

The examined pairs of examples have given us insight into the communicative strategy of redundancy which lies at the root of Spanish indexing DOM. As is expected to happen at the early stage of a grammaticalization process, the innovative function of the doubling clitic is appealed to in specific discourse contexts, here suggestive of a search for greater expressivity or emphasis regarding the involvement of a participant in the denoted event. Following Haspelmath (1999: 1057), we could say that the emergence of Spanish indexing DOM illustrates the "extravagance maxim" characteristic of the actions of speakers who "want their utterance to be imaginative and vivid". What is easier to understand after the examination of the examples is why the strong personal pronouns

were good candidates to trigger the new strategy. They were indeed emphatic forms, which in themselves implied that a personal attitude or behavior would be brought to stand out through the means of a contrast, and this is precisely what made them eligible to become the targets of some additional emphasis. So even though one can never explain why a change takes place, it is possible to state that Spanish indexing DOM arose in contexts where the contrastive value of the strong pronouns and the emphatic aim of the redundant construction fused in a natural and harmonious way.

If my proposal is on the right track, it should receive support from the evolutionary path of the clitic. As a change progresses, an increase in the frequency of the new form is detected, and coupled with this increase certain patterns of use become visible. The choice of the new form over the older one loses its dependency on specific discourse contexts and acquires some systematicity, meaning that certain types of contexts now motivate the appearance of the new form on a regular basis. In order to verify this, the corpus texts pertaining to the second set may prove useful, since the extension of clitic doubling to one half of the registered examples profiles a movement towards the consolidation of indexing DOM.

As it happens, the distribution between doubled and non-doubled *a mí* in the texts under discussion affords a clear pattern, which resides in the near obligatoriness of the clitic with one particular verbal class, namely, mental predicates specialized in denoting a subjective attitude, whether intellectual or emotional. Thus, the tonic pronoun with *parecer* ('it seems to me, I think') is doubled in almost all of its occurrences (28/29 = 96.5%), while *placer* ('it pleases me, I like') and its antonym *pesar* (it grieves me, I lament') motivate the duplication of *a mí* in 83% (15/18) of the registered examples. There are also complex predicates that convey similar meanings (*ser oscuro* 'it is obscure to me, I don't understand', *causar pena* 'it causes me grief, I am sorry', *dar contento* 'it gives me happiness, I am happy', *caer en gracia* 'it strikes me as funny, I am amused', etc.), and they too trigger doubling with high frequency (16/20 = 80%).

All these mental predicates take a dative experiencer argument, and are construed, as is usual, with a stimulus of inanimate reference, coded in the form of a noun phrase when designating some object (cf. something pleases me) or appearing as a clausal complement when expressing a situation (cf. it pleases me that…). In this way, the sole human participant to go on stage is the dative experiencer (*a mí*), highly salient, whose subjective attitude with regard to some entity or event is the focus of the utterance. Spanish experiencers of this type are associated with a series of peculiar features that have prompted their analysis in terms of "dative subjects" (see Melis & Flores 2013, and references therein). Their subject-like behavior comes as no surprise considering that mental meanings of analogous nature are often expressed, in Spanish and in other languages, with nominative-experiencer predicates.

It makes sense that indexing DOM grammaticalized first with these mental predicates, having moved along a path that leads from a redundant emphasis on one's subjective involvement in a situation to a class of verbs specialized in the description of one's subjective mental state. The predicates in question also confirm that the doubling clitic was tied to a notion of participant roles ever since it was introduced into the domain of the strong

personal pronouns. This can be inferred from the character of the predicates' experiencer argument. Experiencers never perform like volitional agents. Yet mental experiences can be construed from different vantage points, and in some of these construals the internal process appears to be under the control of the experiencer. The mental predicates under discussion are of this type: they do not express the reaction of an experiencer to the impact of a stimulus, but portray a subject-like dative experiencer as being in a state with respect to a given object. Hence, in the case hierarchy (agent > dative > accusative) proposed by Givón (1976: 152), the dative experiencer of these predicates would be placed near the top-end (no agent but subject-like). And in light of this, one is able to argue that Spanish indexing DOM first spread to these experiencers because they were more "topical" than all the other object pronouns implicated in the change.

It is now worth examining the behavior of the less topical objects in the texts of the second set. These objects occur in sentences containing another human participant who realizes the action and functions as the topical subject. So the case hierarchy predicts that doubling with these "less involved" object participants should lag somewhat behind, as the data corroborate. Additionally, the case hierarchy leads us to expect that the higher-ranked datives should motivate the use of the clitic more often than the accusative pronouns. But the data are less transparent in this regard for one obvious reason: the distinction between more and less involved participants was neutralized due to the formal identity of the pronouns.

The less topical objects were found to display percentages of doubling hovering around 50%, irrespective of the dative/accusative distinction. To investigate the dative function, I gathered the verbs of "giving" (primarily *dar* 'to give', but also *otorgar* 'to grant', *ofrecer* 'to offer', *encomendar* 'to entrust', etc.) and the verbs of "saying" (*decir* 'to say', *contar* 'to tell', *pedir* 'to ask', *prometer* 'to promise', *mandar* 'to order', etc.), with which the referent of *a mí* is semantically speaking a "recipient". Taken together, these verbs yielded duplicated tokens of *a mí* in 52% of the examples (28/54). Curiously, when viewed as separate verb types, a striking disparity as to their behavior emerged: 79% of duplications (11/14) with verbs of "saying", against 42.5% (17/40) with verbs of "giving". The elevated percentage in the former case would probably need some tuning given the numerical poverty of the sample. In the latter case, the low percentage may be related to the fact that some of the sentences built with a verb of "giving" (*dar la muerte* 'to kill', lit. 'to give death', *atribuir la culpa* 'to blame', lit. 'to attribute a fault', etc.) have a dative coded argument whose semantic role comes closer to that of a patient. This does not happen with the verbs of "saying", always accompanied by a dative who participates in the completion of the event by processing the received message. So it is possible after all that the discrepancy between "saying" and "giving" verbs with respect to the frequency of doubling may reflect the operation of an underlying scale of degrees of involvement.

The accusative population of *a mí*, on the other hand, is associated with a rather heterogeneous set of verbs (*ver* 'to see', *engañar* 'to deceive', *matar* 'to kill', *librar* 'to free', *traer* 'to bring', *buscar* 'to look for', etc.), which does not offer the opportunity of inspecting the behavior of particular subclasses given the meager representation of the distinct event types. Globally, the accusative pronouns attract clitic doubling in 45.5% of the reg-

istered examples (36/79). A more fine-grained contextual analysis would be necessary to uncover why some patients were judged to be better candidates for doubling than others.

In the next step of the grammaticalization process, the distinction between more topical and less topical pronouns becomes obliterated, allowing for the spread of the clitic to all tokens of *a mí* as a near to obligatory object agreement marker. This is the situation which the textual sources of the third set bring to view. Eventually, indexing DOM will be extended to the entire category of the strong personal pronouns, marking datives and accusatives alike.[17]

The lack of formal case distinctions within the domain of the Spanish personal pronouns has to be viewed as the principal reason for why the accusative pronouns were drawn into the orbit of the grammaticalization process. If we understand this, the following historical events related to clitic doubling in Spanish fall into place: The control exercised by the topic case hierarchy over the progression of the clitic recovers visibility and propitiates the development of the object agreement device into a case marker reserved for the *dative* lexical nouns. The datives are the obvious targets, because they rank above the accusative objects in the case role hierarchy.

From this point of view, the question of how the strong object personal pronouns became subjected to a second type of marking can also be resolved. Although the co-occurrence of two mechanisms, on first sight, might suggest a case of useless overlapping, the truth is that *a* and the doubling clitic complement each other. Both have been motivated by a factor of topicality, but the dimensions involved are not the same. Old flagging DOM signals the prominence of the personal pronouns on the animacy scale; it is sensitive to their semantic properties. Newer indexing DOM is concerned with degrees of involvement in relation to the case hierarchy; it evaluates a participant's role in the event structure. This justifies the association of the Spanish personal pronouns with two types of DOM.[18]

[17] The historical data make clear that the development of the clitic into a near categorical object agreement marker took some more time with the third person pronouns. For example, in Hernán Cortés' *Cartas*, where *a mí* is accompanied by a doubling clitic in 90% of the examples (Table 2), the third person pronouns show 57% of duplications (38/67), and in Cervantes' *Quijote*, one century later, *a mí* yields 96% of agreement (Table 2), against a frequency index of 77% (44/57) in the third person area. In order to verify the later entrenchment of the third person clitic, I reviewed a sample of narrative and historical texts, dating from the years 1660 to 1699. My sample showed 98% of clitic doubling with *a mí* (130/133) and 79% with the third person pronouns (162/205), thus confirming that these were lagging slightly behind. Curiously, "us", "you" and "you all" were found to behave much like the third persons (66/86 of doubling = 77%). So it appears that the grammaticalization process of indexing DOM was from beginning to end somewhat biased towards the highest-ranked entity on the topic person hierarchy (*ego*).

[18] The problem of defining the semantic import of Spanish indexing DOM has been addressed in the literature. On the whole, scholars have been especially concerned with offering an account that may serve to differentiate the contribution of the clitic from that of the animacy-related preposition *a*. But no agreement has been reached. Thus, for some, the clitic is supposed to encode the semantic feature of "specificity" (Suñer 1988) or "definiteness" (von Heusinger & Kaiser 2003; Leonetti 2008). From another perspective, the doubling form is associated with a condition of discourse "prominence", for which the notions of both familiarity and activation are relevant (Anagnostopoulou 1999; cf. von Heusinger & Onea Gáspár 2008). And it is also viewed as a mechanism that simply serves to emphasize the heightened topicality of DOM marked objects (Escandell-Vidal 2009). My proposal seeks to throw new light on this question.

5 Conclusions

The present study has dealt with a DOM language whose strong object personal pronouns bear two obligatory markings: they are flagged with the preposition *a* and are indexed on the verb by means of a clitic pronoun. Spanish flagging DOM, which goes back to the recorded beginnings of the language, has been thoroughly investigated in both diachronic and synchronic works. Indexing DOM, also known as clitic doubling (and DOI under Iemmolo's (2014) proposal), is the product of a later development traced to Renaissance Spanish. It has received less attention in the literature and has been the focus of this paper.

One common assumption underlying the approaches to phenomena of differential object marking in the languages of the world is the idea that the development of these marking systems proceeds under the guidance of a handful of universally operating hierarchies. However, this assumption has recently been challenged by Bickel & Witzlack-Makarevich (2008), who invite us to consider the possibility that different systems of DOM might originate from individual, highly specific, and non-comparable diachronic changes. What the history of the two types of Spanish DOM suggests, as I want to show in my conclusions, is that room should be allowed for both scenarios.

Thus, starting with the origin of the two marking devices, it is clear that we are being directed to familiar discourse-pragmatic strategies of cross-linguistic character. Flagging *a* begins as a topicalizer, while the (future) indexing clitic of DOM, in the form of a more independent coreferential pronoun, emerges in topic-shift constructions where it binds dislocated objects to the core clause.

Both trajectories are also closely tied to the personal pronouns at the beginning stage. A distinction between pronouns and non-pronouns is a well-attested tendency in differential marking systems (Comrie 1989: 195). It reflects the way in which language users tend to conceive of the participants coded in the form of personal pronouns as more worthy of being talked "about", so that the pronouns naturally come to occupy the upper regions of the universal hierarchy of topicality. In the case of flagging DOM (Pensado 1995b), the pronominal connection is visible at the onset (late Latin and early Romance), when *a* topicalizes the object pronouns of first and second person. With indexing DOM, the connection is established as soon as the clitic starts to develop its differential marking function in Renaissance Spanish.

How the clitic acquires this function is the result of a particular diachronic change, not susceptible of being cross-linguistically generalized or at least not expected to allow for such enterprise. Without entering into the details of the study presented in this paper, suffice it to say that the functional shift experienced by the coreferential pronoun is achieved through the means of a purposefully redundant construction, used to emphasize the subjective involvement of the pronominal referent in the denoted situation.

Beyond the peculiarity of this change, the evolutionary paths of both types of DOM bring us back to hierarchies of universal scope. On one side, flagging *a,* linking up with the human and definite features of the topical pronouns, begins its descent along the animacy hierarchy and grammaticalizes into a nearly obligatory marker with all direct

objects of human reference.

The grammaticalization process of indexing DOM, on the other side, evidences the influence of one of the hierarchic relations involved in the definition of what it means to be topicworthy. Topicworthiness in this case hinges on an underlying concept of agentivity and ranks the discourse participants along the hierarchy of semantic case roles in accordance with the degree to which the participants contribute to the event. Observe that the specific evolution of indexing DOM has been anticipated in the use of pragmatic redundancy for the purpose of highlighting the subjective involvement of the twice-mentioned participant. It is this original concern with role issues that predisposes the doubling clitic to become sensitive to the case hierarchy. The control exercised by the case hierarchy on Spanish indexing DOM is perceived during the expansion period of the grammaticalization process, via the early entrenchment of the clitic with the more topical subject-like datives; it loses transparency with the extension of the clitic to all the strong object pronouns regardless of their dative or accusative role (propitiated, as I suggested, by the lack of formal case distinctions within the Spanish pronominal system); and it again becomes visible when the clitic is introduced into the nominal area of the more topical datives to develop a case-marking function that separates the higher-ranked dative participants [+ clitic] from the lower-ranked accusative object nouns [– clitic].

From this perspective, it is easier to understand why the strong object personal pronouns carry double marking. Flagging DOM interacts with the semantic properties of animacy and definiteness, whereas the relevant criterion for indexing DOM is the role of the participant in the event structure. The topicworthiness of the personal pronouns is thus simultaneously evaluated on two separate dimensions.

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Data sources

CREA	Electronic data base *Corpus de referencia del español actual* of the Royal Academy of Spanish, accessible through, http://www.rae.es
CORDE	Electronic data base *Corpus diacrónico del español* of the Royal Academy of Spanish, accessible through, http://www.rae.es
Amadís	Garci Rodríguez de Montalvo, *Amadís de Gaula*, 1482–92
Arderique	Juan de Molina, *Libro del esforzado caballero Arderique*, 1517
Cartas	Hernán Cortés, *Cartas de relación*, 1519–26
Crónica	Francisco Cervantes de Salazar, *Crónica de la Nueva España*, 1560
Espejo	Diego Ortúñez de Calahorra, *Espejo de príncipes y caballeros*, 1555
Esplandián	Garci Rodríguez de Montalvo, *Las sergas del virtuoso caballero Esplandián*, 1504

Floriseo	Fernando Bernal, *Floriseo*, 1516
Granada	Ginés Pérez de Hita, *Guerras civiles de Granada*, 1595
Grimalte	Juan de Flores, *Grimalte y Gradisa*, 1495
Guerras	Pedro Cieza de León, *Las guerras civiles peruanas*, 1553–84
Historia	Bernal Díaz del Castillo, *Historia verdadera de la conquista de la N. España*, 1568–75
Quijote	Miguel de Cervantes Saavedra, *El ingenioso hidalgo don Quijote de la Mancha*, 1605
Tristán	Anonymous, *Tristán de Leonís*, 1501
Ysopo	Anonymous, *Vida de Ysopo*, 1520

Abbreviations

1	first person	INF	infinitive
2	second person	IPFV	imperfective
3	third person	MASC	masculine
ACC	accusative	NOM	nominative
COMP	complementizer	PFV	perfective
DAT	dative	PL	plural
FEM	feminine	PRS	present
FUT	future	REFL	reflexive
IMP	imperative	SG	singular

References

Aijón Oliva, Miguel Ángel & Julio Borrego Nieto. 2013. La variación gramatical como forma y significado: El uso de los clíticos verbales en el español peninsular. *Lingü'ıstica* 29(2). 93–126.

Aissen, Judith. 2003. Differential object marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21(3). 435–483.

Alarcos Llorach, Emilio. 1980. Estudios de gramática funcional del español. In, chap. Los pronombres personales, 200–212. Madrid: Gredos.

Anagnostopoulou, Elena. 1999. Conditions on clitic doubling in Greek. In Henk Van Riemsdijk (ed.), *Clitics in the languages of Europe*, 761–796. Berlin: De Gruyter Mouton.

Belloro, Valeria. 2007. *Spanish clitic doubling. A study of the syntax-pragmatics interface*. Buffalo: State University of New York at Buffalo dissertation.

Bickel, Balthasar & Alena Witzlack-Makarevich. 2008. Referential scales and case alignment: Reviewing the typological evidence. In Marc Richards & Andrej L. Malchukov (eds.), *Scales (=Linguistische Arbeitsberichte 86)*, 1–37. Leipzig: Universität Leipzig.

Bogard, Sergio. 1992. El estatus del clítico de complemento indirecto en español. In R. Barriga Villanueva & P. Martín Butragueño (eds.), *Reflexiones lingüísticas y literarias*, vol. 1 Lingüística, 171–186. México: El Colegio de México.

Bossong, Georg. 1991. Differential object marking in Romance and beyond. In Dieter Wanner & Douglas A. Kibbee (eds.), *New analyses in Romance linguistics. Selected papers from the XVIII Linguistic Symposium on Romance Languages, Urbana-Champaign, April 7–9, 1988*, 143–170. Amsterdam: John Benjamins.

Bossong, Georg. 1998. Le marquage différentiel de l'objet dans les langues d'Europe. In Jack Feuillet (ed.), *Actance et valence dans les langues de l'Europe*, 193–258. Berlin: De Gruyter Mouton.

Company Company, Concepción. 2002. Grammaticalization and category weakness. In Ilse Wischer & Gabriele Diewald (eds.), *New reflections on grammaticalization*, 201–215. Amsterdam: John Benjamins.

Comrie, Bernard. 1989. *Language universals and linguistic typology*. 2nd edn. Chicago: University of Chicago Press.

Corbett, Greville G. 1983. *Hierarchies, targets and controllers: Agreement patterns in Slavic*. London: Croom Helm.

Delbecque, Nicole. 2002. A construction grammar approach to transitivity in Spanish. In Kristine Davidse & Béatrice Lamiroy (eds.), *The nominative & accusative and their counterparts*, 81–130. Amsterdam: John Benjamins.

Eberenz, Rolf. 2000. *El español en el otoño de la edad media*. Madrid: Gredos.

Enrique-Arias, Andrés. 2003. From clitics to inflections: Diachronic and typological evidence for affixal object agreement marking in Spanish. In Bernard Fradin (ed.), *Forum de morphologie (3e. rencontres)*, 67–75. Lille: Université de Lille.

Escandell-Vidal, M. Victoria. 2009. Differential object marking and topicality: The case of Balearic Catalan. *Studies in Language* 33(4). 832–884.

Fernández Soriano, Olga. 1999. El pronombre personal. Formas y distribuciones. Pronombres átonos y tónicos. In Ignacio Bosque & Violeta Demonte (eds.), *Gramática descriptiva de la lengua española. 1. Sintaxis básica de las clases de palabras*, 1209–1273. Madrid: Espasa-Calpe.

Fontana, Josep M. 1993. *Phrase structure and the syntax of clitics in the history of Spanish*. Philadelphia: University of Pennsylvania dissertation.

Franco, Jon. 2000. Agreement as a continuum: The case of Spanish pronominal clitics. In Frits Beukema & Marcel den Dikken (eds.), *Clitic phenomena in European languages*, 147–189. Amsterdam: John Benjamins.

Gabriel, Christoph & Esther Rinke. 2010. Information packaging and the rise of clitic doubling in the history of Spanish. In Gisella Ferraresi & Rosemarie Lühr (eds.), *Diachronic studies on information structure. Language acquisition and change*, 63–86. Berlin: De Gruyter Mouton.

García-Miguel, José María. 1991. La duplicación de complemento directo e indirecto como concordancia. *Verba* 18. 375–410.

García-Miguel, José María. 2015. Variable coding and object alignment in Spanish. Some corpus-based evidence. *Folia linguistica* 49(1). 205–256.

García García, Marco. 2007. Differential object marking with inanimate objects. In *Proceedings of the workshop "Definiteness, specificity and animacy in Ibero-Romance lan-*

guages", 63–84. Universität Konstanz: Fachbereich Sprachwissenschaft (Arbeitspapier 122).
García García, Marco. 2014. *Differentielle Objektmarkierung bei unbelebten Objekten im Spanischen*. Berlin: De Gruyter Mouton.
García, Érica C. & Florimon van Putte. 1995. La mejor palabra es la que no se habla. In Carmen Pensado (ed.), *El complemento directo preposicional*, 113–131. Madrid: Visor Libros.
Givón, Talmy. 1976. Topic, pronoun, and grammatical agreement. In Charles N. Li (ed.), *Subject and topic*, 149–188. New York: Academic Press.
Haspelmath, Martin. 1999. Why is grammaticalization irreversible? *Linguistics* 37(6). 1043–1068.
Haspelmath, Martin. 2005. Argument marking in ditransitive alignment types. *Linguistic Discovery* 3. 1–21.
Hopper, Paul J. & Elizabeth C. Traugott. 2003. *Grammaticalization*. 2nd edn. Cambridge: Cambridge University Press.
Iemmolo, Giorgio. 2010. Topicality and differential object marking. Evidence from Romance and beyond. *Studies in Language* 34(2). 239–272.
Iemmolo, Giorgio. 2014. Are dislocated direct objects clause-external? Evidence from differential object marking. In Kayla Carpenter, David Oana & Florian Lionnet (eds.), *Proceedings of the 38th annual meeting of the Berkeley Linguistics Society*, vol. 38, 190–205. Berkeley: Berkeley Linguistics Society.
Jaeggli, Osvaldo. 1982. *Topics in Romance syntax*. Dordrecht: Foris.
Kayne, Richard S. 1975. *French syntax: The transformational cycle*. Cambridge, MA: MIT Press.
Keniston, Hayward. 1937. *The syntax of Castilian prose. The sixteenth century*. Chicago: Chicago University Press.
Kliffer, Michael D. 1984. Personal 'a', kinesis and individuation. In Philip Baldi (ed.), *Papers from the XII Linguistic Symposium on Romance Languages*, 195–216. Amsterdam: John Benjamins.
Laca, Brenda. 1995. Sobre el uso del acusativo preposicional en español. In C. Pensado (ed.), *El complemento directo preposicional*, 61–91. Madrid: Visor Libros.
Laca, Brenda. 2006. El objeto directo. La marcación preposicional. In Concepción Company Company (ed.), *Sintaxis historica del español. Primera parte: La frase verbal*, vol. 1, 423–475. Mexico: Universidad Nacional Autónoma de México.
Lambrecht, Knud. 1994. *Information structure and sentence form*. Cambridge: Cambridge University Press.
Leonetti, Manuel. 2004. Specificity and differential object marking in Spanish. *Catalan Journal of Linguistics* 3. 75–114.
Leonetti, Manuel. 2008. Specificity in clitic doubling and in differential object marking. *Probus* 20. 33–66.
Luján, Marta. 1999. Expresión y omisión del pronombre personal. In Ignacio Bosque & Violeta Demonte (eds.), *Gramática descriptiva de la lengua española. 1. Sintaxis básica de las clases de palabras*, 1275–1315. Madrid: Espasa-Calpe.

Meier, Harri. 1948. Sobre as origens do acusativo preposicional nas linguas românicas. In Harri Meier (ed.), *Ensaios de filologia românica*, 115–164. Lisbon: Ediçâo de Revista de Portugal.

Melis, Chantal. 1995. El objeto directo personal en El Cantar de Mio Cid. Estudio sintáctico-pragmático. In Carmen Pensado (ed.), *El complemento directo preposicional*, 133–163. Madrid: Visor Libros.

Melis, Chantal & Marcela Flores. 2009. On the interplay between forces of erosion and forces of repair in language change. A case study. *Folia Linguistica Historica* 30. 271–310.

Melis, Chantal & Marcela Flores. 2013. On the historical expansion of non-canonically marked "subjects" in Spanish. In Ilja A. Seržant & Leonid Kulikov (eds.), *The diachronic typology of non-canonical subjects*, 163–184. Amsterdam: John Benjamins.

Menéndez Pidal, Ramón. 1964. *Cantar de mio cid*. 4th edn. Vol. 1. Madrid: Espasa-Calpe.

Montaner, Alberto (ed.). 1993. *Cantar de mio cid*. 4th edn. Barcelona: Crítica.

Nieuwenhuijsen, Dorien. 2006. Cambios en la colocación de los pronombres átonos. In Concepción Company Company (ed.), *Sintaxis histórica de la lengua española. La frase verbal*, vol. 2, 1339–1404. México: Universidad Nacional Autónoma de México & Fondo de Cultura Económica.

Nikolaeva, Irina. 2001. Secondary topic as a relation in information structure. *Linguistics* 39(1). 1–49.

Nocentini, Alberto. 2003. The object clitic pronoun in Italian: A functional interpretation. In Giuliana Fiorentino (ed.), *Romance objects. Transitivity in Romance languages*, 105–116. Berlin: De Gruyter Mouton.

Penny, Ralf. 1991. *A history of the Spanish language*. Cambridge: Cambridge University Press.

Pensado, Carmen. 1995a. El complemento directo preposicional: Estado de la cuestión y bibliografía comentada. In Carmen Pensado (ed.), *El complemento directo preposicional*, 11–60. Madrid: Visor Libros.

Pensado, Carmen. 1995b. La creación del complemento directo preposicional y la flexión de los pronombres personales en las lenguas románicas. In Carmen Pensado (ed.), *El complemento directo preposicional*, 179–233. Madrid: Visor Libros.

Pulgram, Ernst. 1983. The reduction and elimination of redundancy. In Frederick B. Agard & Gerald Kelley (eds.), *Essays in honor of Charles F. Hockett*, 107–125. Leiden: Brill.

Real Academia Española. 2010. *Nueva gramática de la lengua española*. Madrid: Espasa-Calpe.

Riiho, Timo. 1988. *La redundancia pronominal en el iberromance medieval*. Tübingen: Max Nieuwmeyer.

Rini, Joel. 1990. Dating the grammaticalization of the Spanish clitic pronoun. *Zeitschrift für romanische Philologie* 106(3/4). 354–370.

Rini, Joel. 1991. The redundant indirect object constructions in Spanish: A new perspective. *Romance Philology* 45(2). 269–286.

Rivero, María Luisa. 1986. Parameters in the typology of clitics in Romance and Old Spanish. *Language* 62. 774–807.

Rohlfs, Gerhard. 1971. Autour de l'accusatif prépositionnel dans les langues romanes (concordances et discordances). *Revue de Linguistique Romane* 35. 312–334.
Sánchez, Liliana & Pablo Zdrojewski. 2013. Restricciones semánticas y pragmáticas al doblado de clíticos en el español de Buenos Aires y de Lima. *Lingüística* 29(2). 271–320.
Siewierska, Anna. 2004. *Person*. Cambridge: Cambridge University Press.
Silva-Corvalán, Carmen. 1984. Semantic and pragmatic factors in syntactic change. In J. Fisiak (ed.), *Historical syntax*, 555–573. Berlin: Mouton.
Suñer, Margarita. 1988. The role of agreement in clitic doubled constructions. *Natural Language and Linguistic Theory* 6. 391–434.
Torrego Salcedo, Esther. 1999. El complemento directo preposicional. In Ignacio Bosque & Violeta Demonte (eds.), *Gramática descriptiva de la lengua española. Las construcciones sintácticas fundamentales. Relaciones temporales, aceptuales y modales*, vol. 2, 1779–1805. Madrid: Espasa Calpe.
Vallduví, Enric. 1992. *The informational component*. New York: Garland.
Vázquez Rozas, Victoria & Marcos García Salido. 2012. A discourse-based analysis of object clitic doubling in Spanish. In Kristin Davidse (ed.), *Grammaticalization and language change. New reflections*, 271–297. Amsterdam: John Benjamins.
von Heusinger, Klaus. 2008. Verbal semantics and the diachronic development of DOM in Spanish. *Probus* 20. 1–31.
von Heusinger, Klaus & Georg A. Kaiser. 2003. The interaction of animacy, definiteness and specificity in Spanish. In Klaus von Heusinger & Georg A. Kaiser (eds.), *Proceedings of the Workshop "Semantic and Syntactic Aspects of Specificity in Romance Languages"*, 41–65. Universität Konstanz: Fachbereich Sprachwissenschaft (Arbeitspapier 113).
von Heusinger, Klaus & Georg A. Kaiser. 2005. The evolution of differential object marking in Spanish. In Klaus von Heusinger, Georg A. Kaiser & Elisabeth Stark (eds.), *Proceedings of the Workshop "Specificity and the Evolution/Emergence of Nominal Determination Systems in Romance"*, 33–69. Universität Konstanz: Fachbereich Sprachwissenschaft (Arbeitspapier 119).
von Heusinger, Klaus & Edgar Onea Gáspár. 2008. Triggering and blocking effects in the diachronic development of DOM in Romanian. *Probus* 20. 67–110.

Chapter 5

From suffix to prefix to interposition via Differential Object Marking in Egyptian-Coptic

Eitan Grossman
The Hebrew University of Jerusalem

This article argues that Differential Argument Indexing (DOI) and Differential Argument Marking (DOM) constructions in Coptic (Afroasiatic, Egypt) are reanalyzed, resulting in a set of verbs with interposed P-indexes within bipartite stems (DeLancey 1996; Nichols 2003). Basically, incorporated noun phrases with prefixed possessor indexes become parts of derived verbs with unpredictable lexical semantics, and their erstwhile possessor prefixes, entrapped within the derived verb, are reanalyzed as P-interpositions. Since this possessor prefix ultimately developed from an earlier possessor suffix, the pathway documented here, stripped down to its essentials, is SUFFIX → PREFIX → INTERPOSITION, and erstwhile complex construction → BIPARTITE STEM. Finally, an overt genitive prefix that marks lexical possessors of incorporated noun phrases is reanalyzed as an accusative case prefix. These changes introduce new complexity into Coptic Differential Argument Marking: not only are P arguments either indexed as suffixes, case marked, or incorporated for the majority of verbs, they can be indexed as interpositions for a lexically determined set of verbs.

1 Introduction

In recent years, Differential Object Marking (DOM) has been distinguished from Differential Object Indexing (DOI) (Iemmolo 2011), but both fall under the generalized definition of Differential Argument Marking proposed by Witzlack-Makarevich & Seržant (this volume), i.e. "Any kind of situation where an argument of a predicate bearing the same generalized semantic role (or macrorole) may be coded in different ways, depending on factors other than the argument role itself." Under this definition, as Witzlack-Makarevich & Seržant point out, "DAM is not restricted to case marking (also called dependent marking or flagging [...] but also includes differential agreement (or head marking or indexing)." However, since some languages have both DOM and DOI, the two can interact, sometimes in complex ways.

Eitan Grossman. From suffix to prefix to interposition via Differential Object Marking in Egyptian-Coptic. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *Diachrony of differential argument marking*, 129–151. Berlin: Language Science Press. DOI:10.5281/zenodo.1228251

The aim of this article is to show one way that DOM and DOI can interact in language change. It is argued that for a number of verbs, the specific constructions implicated in both DOM and DOI in Coptic (Afroasiatic, Egypt) are reanalyzed, resulting in the reanalysis of a prefixed possessor index as an interposed P-index within a bipartite stem.[1] Bipartite stems, described by Jacobsen (1980), DeLancey (1996), and Nichols (2003) for some North American and Nakh-Daghestanian Caucasian languages,[2] are defined by Nichols (2003: 321) as "a segmentable simplex stem; or a stem with inflection positioned so as to split the stem into two parts." The term *interposition* is used to characterize the person index that occurs between the two pieces of a bipartite stem, and the term "interposed" is used to describe its position of occurrence. Interpositions are distinguished from infixes, which "occur inside of a simple stem, where [their] position is usually defined phonologically" (Nichols 2003: 321).

The coding of P arguments in Coptic involves both DOM and DOI, since a lexical P argument can be either overtly case marked or incorporated into the verb (DOM), or can be indexed on the verb as a suffix (DOI). For the vast majority of transitive verbs, both case marking and incorporation of P are in complementary distribution with P-indexing. However, for a lexically-determined set of verbs, incorporated noun phrases with prefixed possessor indexes become parts of derived verbs with unpredictable lexical semantics, and their erstwhile possessor prefixes, entrapped within the derived verb, are reanalyzed as P-interpositions. Since this possessor *prefix* ultimately developed from an earlier possessor *suffix*, the pathway documented here, stripped down to its essentials, is SUFFIX → PREFIX → INTERPOSITION, and erstwhile complex construction → BIPARTITE STEM. Finally, an overt genitive prefix that marks lexical possessors of incorporated noun phrases is reanalyzed as an accusative case prefix.

All in all, these changes introduce new complexity into Coptic DAM: not only are P arguments either indexed as suffixes, case marked, or incorporated for the majority of verbs, they can be indexed as interpositions for a lexically determined set of verbs.

The structure of this article is as follows. §2 presents the basic problem dealt with here. §3 describes some background about the marking of grammatical relations in Coptic. §4 presents some basic facts about the synchrony and diachrony of possessive phrases in Ancient Egyptian-Coptic, tracing the replacement of suffixed possessor indexes by prefixed possessor indexes. §5 shows how prefixed possessor indexes are reanalyzed as infixed P indexes. §6 suggests that this process, alongside the well-known 'HAVE-drift' (Comrie 1981, Stassen 2009), is yet another type of 'P-drift,' in which non-P arguments are reanalyzed as P arguments. §7 concludes and sketches what an explanation for P-drift might look like.

[1] In this article, I follow the Comrian approach to transitivity and argument roles articulated in Comrie (1981), Lazard (2002) and Haspelmath (2011). Basically, transitive clauses are those with A and P as core arguments. A and P arguments are those that are coded like the arguments of a prototypical biactant clause in which the predicate expresses an action, e.g. 'kill.'

[2] I would like to thank Alena Witzlack-Makarevich for drawing my attention to this similarity.

2 The problem: P infixes within a lexical verb

In Coptic, P indexes are bound to the rightmost edge of the lexical verb in monotransitive clauses.[3] In (1),[4] the 3SG.M index is *-f*.

(1) Coptic (Layton 2004: 138)
a-f-kaa-f *e-f-onh*
PST-3SG.MA-leave-3SG.MP CVB-3SG.M-live\STAT
'He left him alive.'

Exceptionally, however, a small number of verbs have interposed P-indexes, which occur within the lexical verb.

(2) Coptic (2 Timothy 2:14)
mar-ou-rpe<u>meeue
JUSS-3PLA-remember<3PLP>remember
'Let them$_i$ remember them$_j$.'

(3) Coptic (Besa 4:17)
n-se-tm-rpe<u>ôbš
SEQ-3PLa-NEG-forget<3PLP>forget
'that they$_i$ not forget them$_j$.'

(4) Coptic (Matthew 25:36)
a-tetn-cmp<a>šine
PST-2PLA-visit<1SGP>visit
'You visited me.'

When the P argument of these verbs is a lexical noun phrase, on the other hand, it is not indexed on the verb at all. Rather, it is marked by an overt case prefix *n-* (*m-* before labials), glossed here as accusative (ACC).

(5) Coptic (Luke 22:61)

a-petros	*-rpmeeue*	*m-p-šače*	*m-p-čoeis*
PST-Peter	-remember	ACC-DEF.M.SG-word	GEN-DEF.M.SG-lord

'Peter remembered the word of the Lord.'

[3] The examples presented here are glossed according to the Leipzig Glossing Rules, and are transliterated according to the Leipzig-Jerusalem system (Grossman & Haspelmath 2015). Abbreviations used in the glosses in this article, beyond those found in the Leipzig Glossing Rules list, are: AOR – aorist, basically a habitual verb form; BG – backgrounder, prefix that marks the verb as topical and, in the present case, an adjunct as focal; MOD – modifier marker, SEQ – sequential verb form; STAT – stative verb form. The glossing convention of a space followed by a hyphen indicates that the morpheme following the hyphen is part of the same morphological – but not phonological – word.

[4] Examples are cited as found in easily accessible secondary sources, such as Layton (2004), an excellent descriptive grammar, or Shisha-Halevy (1988), a learner's chrestomathy based on authentic Coptic texts. This is because Coptic texts are usually published in text editions that are not easily available to non-specialists. In some cases, I have cited examples from the letters and sermons of Besa, a Coptic abbot. The references are to page and line number of Kuhn's edition (Kuhn 1956).

(6) Coptic (Luke 7:16)
a-p-noute *-cmpšine* *m-pe-f-laos*
PST-DEF.M.SG-God -visit ACC-POSS.M.SG-3SG.M-people
'God visited his people.'

From a synchronic point of view, this is a curious fact: for a small list of verbs, the P argument is indexed *within* the lexical verb. However, from the point of view of language change, this unusual feature has a clear explanation.

In short, it is argued that these verbs are derived, via noun phrase incorporation,[5] from the compounding of a verbal root and a possessive noun phrase, in which the possessor index is prefixed to a lexical noun. Returning to example (4) above, the original structure is as follows:

(7) Coptic (Matthew 25:36)
a-tetn-cm-p-a-šine
PST-2PL-find-POSS.M.SG-1SG-report
'You visited me' (lit. 'you found my report').

The possessor prefix (*pa-*) originates from a construction in which an even earlier possessor index (corresponding to Coptic *-a* 1SG) is suffixed to a demonstrative base (corresponding to Coptic *p-* POSS.M.SG). However, in order to demonstrate that the synchronic structure involves an interposed P-index, rather than a prefixed possessor index, I show that the meanings of the verbs derived via incorporation of these noun phrases are not completely predictable. In short, the lexical verb 'visit' in Coptic is *cmpšine*, and <*a*> is interposed in a position that is synchronically arbitrary but historically explicable.

3 The background

3.1 Ancient Egyptian-Coptic

Ancient Egyptian-Coptic, the indigenous language of Egypt, is an independent branch of the Afroasiatic phylum. It is documented from around the turn of the 3rd millennium BCE up until the 13th or 14th century CE, when its last speakers shifted to Arabic; for overviews of Ancient Egyptian, see Loprieno (1995); Loprieno & Müller (2012); Grossman & Richter (2015), or Haspelmath (2015a). Coptic, the latest stage of the language, is documented in a dozen or so literary dialects, as well as a range of less standardized language varieties attested in non-literary texts, such as private letters, legal documents, and financial records. The main literary dialects are Sahidic and Bohairic. The data for the present article are taken from the Sahidic dialect, which is the best described (Layton 2004; Reintges 2004; Shisha-Halevy 1986).

[5]The notion 'incorporation' is usually not extended to constructions in which nominals with phrasal properties (e.g. determination, possessor marking, etc.) are attached to verbs. However, some accounts of incorporation do indeed recognize that such nominals may be incorporated (e.g. Aikhenvald 2007; Grossman forthcoming), and some languages are described in a straightforward way as incorporating determiners and other items typically associated with noun phrases, e.g. Donohue's (1999) description of Warembori.

3.2 Grammatical relations in Coptic: a brief overview

Due to the complexity of Coptic grammatical relations, I focus on the coding properties of intransitive and monotransitive verbal clauses, i.e. those with S or A and P as arguments of the predicate, leaving out ditransitive clauses and clauses with non-accusative objects. §3.2.1 deals with argument indexing, §3.2.2 with case marking, and §3.2.3 with incorporation. Before proceeding to the presentation of grammatical relations, it is important to briefly describe two basic facts of Coptic transitive verbs. First, each lexical verb occurs in up to three distinct allomorphs, the conditioning factor being the encoding of P (see Table 1). The allomorphs are labelled here as distinct stems (represented as Σ with superscript numerals, borrowing a practice of Sino-Tibetan linguistics).[6]

1. The free form of the verb (Σ^1) occurs when no P is present or when P is overtly case marked. It is also the citation form.
2. A second allomorph (Σ^2) occurs when lexical P is incorporated.
3. A third allomorph (Σ^3) occurs when P is indexed on the verb.[7]

Table 1: Allomorphs of the Coptic verb

	FREE FORM (Σ^1)	WITH INCORPORATED P (Σ^2)	WITH P INDEX (Σ^3)
'draw (sword)'	*tôkm*	*tekm-*	*tokm-*
'drink'	*sô*	*se-*	*soo-*
'find'	*cine*	*cn-*	*cnt-*

The allomorphs that occur with incorporated P (Σ^2) or indexed P (Σ^3) are bound forms, i.e. they cannot occur as free forms.

Second, Coptic verbs occur in two main constructions, which will be treated here as templates. The first is the Present tense (see Table 2), which comprises two main slots (Polotsky 1960). The first slot, for the A argument,[8] is occupied either by a lexical noun phrase or a prefixed person index. The second slot is occupied by the lexical verb or by a locative expression. P cannot be indexed on the verb, but is rather overtly case-marked.

The second construction is for all verbal templates other than the Present tense. It comprises three obligatory slots. The first is occupied by a TAM/Polarity prefix, the second by an A index, and the third by a lexical verb. P-indexes occur in an optional fourth slot, suffixed to the lexical verb. As is discussed in the following section (§3.2.1), P-indexes and case-marked P are largely in complementary distribution.

[6] Guillaume Jacques (p.c.) informs me that it was Georg van Driem who originated this practice.

[7] This presentation is more convenient than precise. Actually, the choice of bound verb stem is conditioned by phonological considerations: phonologically light elements condition Σ^2, while phonologically heavy elements condition Σ^3. However, almost all person indexes are phonologically light. I would like to thank Matthias Müller (p.c.) for reminding me of this.

[8] This slot is also the one in which S arguments occur, but since they are not the focus of this article, I ignore them here. Coptic argument indexing is nominative-accusative (S=A≠P) in terms of linear order.

Table 2: The structure of the Present tense verb

A/S	Lexical verb	(P)
t^{i}-	*-sops*	*(mmo-k)*
1SG	entreat	(ACC-2M.SG)
'I entreat you.'		

Table 3: The structure of non-Present tense verbs

TAM/Polarity	A/S	Lexical verb	(P)
a-	*-f-*	*-tamio-*	*-ou*
PAST	3SG.M	create	3PL
'He created them' (Shenoute, cited in Shisha-Halevy 1988: 34).			

3.2.1 Indexing

In monotransitive clauses, A and P can be indexed on the verb. Argument indexing is not obligatory. A given monotransitive verb can occur with an A index (8), a P index (9), both (10), or neither (11). Bound A indexes are prefixed to the lexical verb (or an auxiliary verb), and if an overt TAM/Polarity prefix is present, the latter precedes the person index. In order to simplify the presentation, the following examples are taken from the Past tense, whose basic structure is presented in Table 3 above):

(8) Coptic (Besa 46:26)
a-u-sôtp *n-ne-u-hiooue*
PST-3PLA-choose ACC-POSS.PL-3PL-ways
'They have chosen their ways.'

(9) Coptic (Shenoute, cited in Shisha-Halevy 1988: 34)
a-p-čoeis *-tsto-ou* *ebol*
PST-DEF.M.SG-lord -reject-3PLP out
'The Lord rejected them.'

(10) Coptic (Besa 45:32)
a-u-tamo-n
PST-3PLA-inform-1PLP
'They informed us.'

(11) Coptic (Shenoute, cited in Shisha-Halevy 1988: 35)
a-n-daimonion *-soun-p-čoeis*
PST-DEF.PL-demon -know-DEF.M.SG-lord
'The demons knew the Lord.'

Coptic has DOI, since person indexes can either be suffixed to the verb (12) or case-marked (13), even for one and the same verb in the same verbal construction, e.g. the Past tense:

(12) Coptic (Matthew 13:48, cited in Layton 2004: 132)
n-et-hoou=de *a-f-noč-ou* *ebol*
DEF.PL-REL-bad\STAT=PTCL PST-3SG.M-cast-3PL out
'The bad ones, he cast them out.'

(13) Coptic (Luke 4:35, cited in Layton 2004: 132)
a-f-nouče=de *mmo-f*
PST-3SG.M-cast=PTCL ACC-3SG.M
'And he threw him down.'

At present, there is no account of Coptic DOI, so I will not speculate on the functions associated with it. What is important to establish in the present context is that P-indexes are suffixed to the lexical verb, and cannot occur elsewhere within the verbal bound group.

3.2.2 Case marking

Coptic has a cross-linguistically unusual case-marking system: both the Nominative (14) and the Accusative (15) are overtly marked by prefixed case markers, but neither of these is the citation form. The citation form is the bare noun form, which is simply a nominal stem without case markers or other inflectional material, such as (in)definiteness or number-gender markers. Such case-marking systems have been called 'marked A/S vs. marked P' by Creissels 2009 (see also Grossman 2015). Moreover, noun phrases are overtly case-marked only if they are postverbal; if they are preverbal or incorporated into the verb, they are not case-marked.

(14) Coptic (Luke 1:12)
a-f-štortr=de *nci-zakharias*
PST-3SG.M-be.troubled=PTCL NOM-Zacharias
'But Zacharias was troubled.'

(15) Coptic (Luke 1:36)
a-s-ô *n-ou-šêre*
PST-3SG.F-conceive ACC-INDEF-son
'She conceived a son.'

Examples (16) and (17) show the main constructions involved in Coptic DOM: lexical P must be either incorporated or overtly case-marked.

(16) Coptic (Mark 4:36)
a-f-ka-p-mêêše
PST-3SG.M-leave-DEF.M.SG-multitude
'He left the multitude.'

(17) Coptic (Matthew 13:36)
a-f-kô *m-p-mêêše*
PST-3G.M-leave ACC-DEF.M.SG-multitude
'He left the multitude.'

The conditions regulating Coptic DOM are complex, and involve both an aspectual split and discourse conditions that are still poorly understood and may vary from dialect to dialect and even from corpus to corpus (Engsheden 2008). However, there are some broad regularities.

First of all, in the Present tense and in verbal constructions built on the Present tense (e.g. the Imperfect), DOM is strictly regulated by what is traditionally seen as definiteness, but which could also be seen as a matter of referentiality: bare nouns stems, which tend to have non-referential semantics, are obligatorily incorporated into the verb; in (18), for example, the noun stem *daimonion* 'demon(s)' is non-referential. On the other hand, referential noun phrases of any sort are obligatorily case marked, as in (19), in which *daimonion* is referential and bears an indefiniteness prefix.

(18) Coptic (Luke 11:15, cited in Layton 2004: 132)
e-f-neč-daimonion *ebol* *hn-beelzeboul*
BG.PRS-3SG.M-cast-demon out in-Beelzebul
'He casts out demons by means of Beelzebul.'

(19) Coptic (Luke 11:14, cited in Layton 2004: 132)
ne-f-nouče=de *ebol* *n-ou-daimonion*
IMPF-3SG.M-cast=PTCL out ACC-INDEF.SG-demon
'He cast out a demon.'

This extends to bound person markers as well: since person markers are referential by nature, they cannot be indexed on the verb and must receive overt case marking, as in (20).

(20) Coptic (Acts 13:46, cited in Layton 2004: 236)
tetn-nouče *mmo-f* *ebol*
2PL.PRS-cast ACC-3SG.M out
'You cast it out.'

Outside of the Present tense and related constructions (e.g. the Imperfect), it is still the case that bare noun stems are obligatorily incorporated into the verb, i.e. they cannot bear overt accusative case (21). On the other hand, noun phrases can either be case-marked (22) or incorporated (23), the conditioning factors governing the alternation still being unclear.

(21) Coptic (1 Timothy 5:23)
mpr-se-moou
PROH-drink-water
'Don't drink water!'

(22) Coptic (Matthew 26:51)
a-f-tôkm *n-te-f-sêfe*
PST-3SG.M-draw ACC-POSS.F.SG-3SG.M-sword
'He drew his sword.'

(23) Coptic (Mark 14:47)
a-f-tekm-te-f-sêfe
PST-3SG.M-draw-POSS.F.SG-3SG.M-sword
'He drew his sword.'

3.2.3 Incorporation

As discussed in §3.2.2 above, lexical A, S, or P can be incorporated into the verb. A/S incorporation is unexpected from a cross-linguistic view[9] but it is unimportant for the present discussion; I will focus here on P-incorporation, which is highly productive in Coptic.

Nouns referring to body parts are often incorporated in Coptic, as in other languages (Mithun 1984; 1986; Mithun & Corbett 1999), and these body part terms often bear possessor indexes, as in (24) and (25).

(24) Coptic (Besa 10:24)
a-f-ka-toot-f
PST-3SG.M-put-hand-3SG.M
'He ceased.' (lit. 'he put his hand')

(25) Coptic (Besa 3:30)
n-tn-smn-toot-n
SEQ-1PL-establish-hand-1PL
'And let us agree.' (lit. 'let us establish our hand')

The free forms (Σ^1) of these verbs are, respectively, *kô* 'put' and *smine* 'establish.' What is noteworthy in these constructions is that the possessive suffixes can be analyzed as P-indexes, since incorporation of body parts produces new verbs whose meaning is not transparently predictable from the sum of the verbal and nominal roots. In other words, (24) and (25) above could be analyzed as follows in (26) and (27), with A and P being coreferential, and the construction as a whole being reflexive.

[9] An anonymous reviewer has drawn my attention to Zavala (2000), which argues that Olutec (Mixean) allows the incorporation of A.

(26) Coptic (Besa 10:24)
a-f-katoot-f
PST-3SG.M-cease-3SG.M
'He ceased' (lit. 'he put his hand').

(27) Coptic (Besa 3:30)
n-tn-smntoot-n
SEQ-1PL-agree-1PL
'And let us agree' (lit. 'let us establish our hand').

It is important to note that this reanalysis is plausible, since these possessive suffixes are a relic of an earlier head-marking possessive construction, in which possessor indexes are suffixed directly to the possessum, as in (28) (Egedi 2010; Haspelmath 2015b).

(28) Earlier Egyptian (Allen 2013: 102, 124)

rn-k	*pr-k*
name-2M.SG	house-2M.SG
'your name'	'your house'

In Coptic, however, these suffixes are nearly obsolete, and occur only on a small list of body parts and other inalienable nouns. The most frequent – and the only productive – possessive construction in Coptic comprises a possessive prefix, which in turn comprises a pronominal base that shows number (singular vs. plural), and gender (masculine vs. feminine) distinction in the singular, to which a possessor index attaches, as in (29).

(29) Coptic (Matthew 7:22, John 10:3)

pe-k-ran	*ne-u-ran*
POSS.M.SG-2M.SG-name	POSS.PL-3PL-name
'your name'	'their names'

Moreover, many of the nouns denoting body parts in the incorporation construction are themselves obsolete as independent lexical items, and they occur almost exclusively as parts of noun-verb compounds such as those in (24) and (25), or as parts of prepositions, as in (30). As such, they can be treated as 'obligatorily possessed nouns' (Nichols & Bickel 2005). A short list of forms used as bound roots are compared with the free forms in Table 4 (for a full list, see Layton 2004: 102–104).

(30) Coptic (Matthew 5:25)

etoot-f	*(<e-toot-f)*
to-3SG.M	to-hand-3SG.M
'to him'	'to his hand'

One can assume that at least arguably, the erstwhile possessor indexes have been reanalyzed as P suffixes, due to the following reasons: (a) the possessor suffixes are not a productive strategy for marking the possessor on nouns, (b) the noun roots to which

Table 4: Bound forms and free forms of nouns denoting body parts

MEANING	BOUND FORM	FREE FORM
'hand'	*toot-*	*cič*
'foot'	*rat-*	*ouerête*
'eye'	*eiat-*	*bal*
'head'	*čô-*	*ape*

they attach are not identifiable as free forms with a lexical meaning, and (c) the meaning of the incorporated constructions are not transparent. This is further corroborated by the fact that P-indexes of underived verbs are also suffixed to the lexical verb, which plausibly would have enhanced the likelihood of possessor indexes being reanalyzed as P-indexes.

These facts about Coptic will be used to explain the origin of infixed P-indexes that occur within the lexical verb. In the next section, it is shown that the Coptic possessor prefix developed, in part, from an earlier possessor suffix.

4 From suffix to prefix in the coding of possessors

The diachronic relationship between the two ways of indexing the possessor in a possessive phrase, i.e. via possessor suffixes (28) or possessor prefixes (29) is well-documented in the history of Ancient Egyptian. The head-marking construction with a possessor index suffixed to the noun denoting the possessum (28) is, historically speaking, the older construction, attested from the very beginning of the textual record.

A competing construction, which emerged relatively early in the textual record, comprises a demonstrative pronoun (*pꜣy*), to which the possessor index (e.g. *-f*) was suffixed. One of the earliest examples documented is shown in (31).

(31) Old Egyptian (cited in Sojic forthcoming)
pꜣy-f *hrw*
DEM-3SG.M day
'his day'

This newer construction rose in frequency over the course of Ancient Egyptian diachrony, but remained in variation with the older construction until thousands of years after the new construction is first documented (Gardiner forthcoming; Sojic forthcoming; Winand forthcoming). For example, in the 14th century BCE, we find the two constructions as variants at the same time in the same type of text. The earlier construction is found in (32), the innovative one in (33).

(32) Late Egyptian (cited in Sojic forthcoming)
mšʿ-f
army-3SG.M
'his army'

(33) Late Egyptian (cited in Sojic forthcoming)
pꜣy-f *mšʿ*
POSS.M.SG-3SG.M army
'his army'

By the time of Coptic, the latest stage of the language, the new construction has become bound to the possessum, becoming in effect a prefixed possessor index (Grossman forthcoming), as in (34):[10]

(34) Coptic (Matthew 1:23)
pe-f-ran
POSS.M.SG-3SG.M-name
'his name'

In brief, the diachronic change observed here can be represented schematically as in Table 5.

Table 5: The diachrony of possessor infixes in Ancient Egyptian-Coptic

	Possessor index
Stage 1	suffix only (*rn-k* name-2M.SG 'your name')
Stage 2	suffix productive (*rn-k*), preposed possessor index (*pꜣy-k rn*) begins to emerge
Stage 3	suffix and preposed possessor index in variation (*rn-k* vs. *pꜣy-k rn*)
Stage 4	(a) preposed possessor index becomes prefixed to noun (*pe-k-ran*) (b) prefix productive, suffix limited to a small set of nouns

We now turn to the development of an interposed P-index from the prefixed possessor index in (34).

5 From prefix to infix in the coding of P

As mentioned above in §3, Coptic has a productive noun incorporation construction, in which nouns in P role are attached to a bound form of the verb. Unusually from a cross-linguistic point of view, not only bare noun roots but also referential noun *phrases* can be incorporated in tenses other than the present.

[10]For a full account of the diachrony of the two possessive constructions in the history of Egyptian, see Gardiner (forthcoming), Sojic (forthcoming) and Winand (forthcoming), as well as Haspelmath (2015b) and Kammerzell (2000), which are typologically-oriented.

For one thing, incorporated nouns can bear overt (in)definiteness marking, as in (11) above, repeated here as (35) for convenience.

(35) Coptic (Shenoute, cited in Shisha-Halevy 1988: 35)
a-n-daimonion *-soun-p-čoeis*
PST-DEF.PL-demon -know-DEF.M.SG-lord
'The demons knew the Lord.'

Moreover, incorporated nouns can be quantified (36) or modified adjectivally (37).

(36) Coptic (Shenoute, cited in Shisha-Halevy 1988: 37)
mp-f-ka-ce-hôb
PST.NEG-3SG.M-put-another-thing
'He did not leave another thing.'

(37) Coptic (Mark 2:22, cited in Layton 2004: 132)

mere-laau	*-neč-êrp*	*b-brre*	*e-hôt*	*n-as*
AOR.NEG-anyone	-throw-wine	MOD-new	to-wineskin	MOD-old

'No one puts new wine into old wineskins.'

Incorporated noun phrases can be referred to anaphorically, as in (38).

(38) Coptic (Besa 9:31)

mp-ou-oueš-pe-smou	*a-f-pôt*	*ebol*	*mmo-ou*
PST.NEG-3PL-love-DEF.M.SG-blessing	PST-3SG.M-flee	out	OBL-3PL

'They did not love the blessing, and it fled away from them.'

Crucially, incorporated nouns can be marked as possessed in at least three ways. The first is when erstwhile possessive suffixes attach to incorporated body parts, as in (24)–(25) above. The second way is when the possessor is a lexical noun phrase, which follows the incorporated noun and is marked as dependent by the Genitive prefix *n-*, as in (39) and (40).

(39) Coptic (Besa 2:23)
mar-n-r-p-meeue *n-ne-nt-a-pe-n-eiôt*
JUSS-1PL-do-DEF.M.SG-thought[11] GEN-DEF.PL-REL-PST-POSS.M.SG-1PL-father
-čoo-u
-say-3PL
'Let us remember those things that our father has said' (lit. 'Let us do the thought of the things that our father has said').

[11]The lexical noun *meeue* means 'thought,' but the derived verb *rpmeeue* (lit. 'do the thought' means 'remember.'

(40) Coptic (Besa 4:19)
e-r-p-ôbš *n-n-entolê* *m-p-noute*
INF-do-DEF.M.SG-forget GEN-DEF.PL-commandment GEN-DEF.M.SG-god
'to forget the commandments of God' (lit. 'to do the forgetting of the commandments of God')

The third way is by means of the possessor prefix described in §4. In (41), the possessor prefix *pes-* is part of the incorporated nominal.

(41) Coptic (Hebrews 13:2, cited in Layton 2004: 142)
t-mntmaišmmo *mpr-r-pe-s-ôbš*
DEF.F.SG-hospitality PROH-do-POSS.M.SG-3SG.F-forget
'As for hospitality, do not forget it.'

The question is whether the verbs *rpmeeue* 'remember,' *rpôbš* 'forget,' and *cmpšine* 'visit' are synchronically analyzable as compositionally derived from a verb root and a possessive noun phrase, or whether they are better treated as distinct lexical items with no internal structure.

A point in favor of the former analysis is the fact that their derivational history is clear, and their component parts all exist as independent lexical items in Coptic. On the other hand, in favor of the latter is the fact that they have a distinct lexical meaning that is unpredictable from the original components. For example, the bound verb form (Σ^2) *r-* 'do'[12] is commonly used to derive verbs from nouns, e.g. *nobe* 'sin' vs. *r-nobe* 'to sin.' In the case of *rpmeeue*, it does not derive a verb from *meeue*, which means 'think, thought, opinion,' but rather from *pmeeue*, which means 'remembrance,' and *rpmeeue* means 'to remember, to be mindful of.'

Similarly, *cmpšine* is the result of the compounding of the verb '*cn-* (free form *cine*) 'find' and *pšine* 'visit,' itself derived from *šine*, which means 'to ask, to inquire, to visit,' or, 'inquiry, news, report.' In this case, the derived noun lexicalizes only a narrow part of the polysemy network of the underived noun. If *šine* means 'to ask, to inquire, to visit,' *pšine* lexicalizes only 'visit,' and the derived verb *cmpšine* lexicalizes this meaning. I take this as evidence that the meaning of the verbs derived via incorporation is not fully predictable from its components, and as such, that verbs like *rpmeeue* or *cmpšine* are synchronically distinct form-meaning pairings. This is typical of some types of incorporation (Mithun & Corbett 1999).

Another argument in favor of analyzing these derived verbs as synchronically simple verbs is that the genitive prefix that marks lexical noun possessors of the incorporated noun phrase is homonymous with the accusative case prefix. Compare the genitive prefix in (42) with the accusative prefix in (43). In (42), the original structure of the construction can be glossed as 'let us do the thought of those things that our father has said,' with the incorporation of *p-meeue* 'the-thought.' The genitive prefix *n-* marks the determined relative clause ('those things that our father has said'). In (43), the accusative prefix *n-* simply marks the P argument.

[12]The corresponding free form (Σ^1) is *eire*.

(42) Coptic (Besa 2:23)
mar-n-r-p-meeue ***n**-ne-nt-a-pe-n-eiôt*
JUSS-1PL-do-DEF.M.SG-thought GEN-DEF.PL-REL-PST-POSS.M.SG-1PL-father
-čoo-u
-say-3PL
'Let us remember those things that our father has said' (lit. 'Let us do the remembrance of those things that our father has said').

(43) Coptic (Besa 46:26)
a-u-sôtp ***n**-ne-u-hiooue*
PST-3PLA-choose ACC-POSS.PL-3PL-ways
'They have chosen their ways.'

These prefixes are diachronically distinct (Winand 2015), but in this particular environment, they are homonymous. This homonymy would plausibly lead to the reanalysis of the genitive prefix in this context as the accusative prefix, i.e.:

(44) Coptic (Besa 2:23)
mar-n-rpmeeue *n-ne-nt-a-pe-n-eiôt* *-čoo-u*
JUSS-1PL-remember ACC-DEF.PL-REL-PST-POSS.M.SG-1PL-father -say-3PL
'Let us remember those things that our father has said.'

If the verbs discussed here are analyzed as distinct lexical items, the person indexes in (45)–(47) are interpositions, occurring synchronically at an arbitrary position. Diachronically, however, they are simply in the position of earlier possessor indexes, which were prefixed to incorporated possessed nouns. For example, in (45)–(47), the P interposition is in the position of the earlier possessor index, which occurred between the earlier lexical verb and the possessed noun.

(45) Coptic (2 Timothy 2:14)
mar-ou-rpe<u>meeue
JUSS-3PLA-remember<3PLP>remember
'Let them$_i$ remember them$_j$.'

(46) Coptic (Besa 4:17)
n-se-tm-rpe<u>ôbš
SEQ-3PLA-NEG-forget<3PLP>forget
'that they$_i$ not forget them$_j$.'

(47) Coptic (Matthew 25:36)
a-tetn-cmp<a>šine
PST-2PLA-visit<1SGP>visit
'You visited me.'

The pathway of change sketched in this article shows one way that an affix can move without moving. The constellation of changes involved is complex, and involves the interaction of multiple grammatical systems. To summarize, I have argued that the following changes led to a suffix becoming a prefix, and this prefix becoming an infix, or more properly, an interposition:

1. First, an old head-marking possessive construction involving suffixed possessor indexes is superseded by a newer construction in which the possessor index is suffixed to a demonstrative, the entire construction grammaticalizing into a possessive prefix with the possessor index prefixed to the possessum noun.
2. Later on, noun phrases comprising the newer possessor prefix undergo incorporation, with the resulting derived verb being a synchronically distinct form-function pairing whose meaning is not fully predictable from its component parts.
3. Once incorporated, the possessor index is reanalyzed as a P-index, which is infixed, or more properly, interposed, within the lexical verb. The process of reanalysis was facilitated by the homonymy of the prefix *n-*, which marks both lexical possessors (GEN) and lexical P arguments (ACC). As such, the postverbal possessor of the incorporated noun was reanalyzed as a postverbal P.

This complex series of changes is represented schematically, and with much flattening out of actual diachrony, in Figure 1:

Construction	
possessor index suffixed to noun	*X-f* 'his X'
↓	
development of new preposed possessive article from DEMONSTRATIVE+POSSESSOR SUFFIX	pɜy-f *X* 'his X'
↓	
possessive article becomes bound to noun, possessor index becomes prefix on noun	*pef-X* 'his X'
↓	
possessed nouns incorporated into verbs	*V-pef-X* 'to V his X'
↓	
loss of compositional semantics, reanalysis of genitive as accusative	
↓	
reanalysis of verb as bipartite stem, reanalysis of possessor prefix as interposed P index	V_1-*f*-V_2 'to V him'

Figure 1: Schematic representation of the change from suffix to prefix to interposition

6 A broader view: P-drift?

Taking a broader view of the complex change here, it might be possible to speak of *P-drift* or *direct object drift*, in which certain non-P clause participants, given the right circumstances, are preferentially reanalyzed as P. This is, in a sense, inverting – but also broadening – the phenomena associated with "HAVE-drift" (Comrie 1981; Stassen 2009), in which intransitive predicative possession constructions gradually acquire properties associated with transitivity. Such a process also occurred in Ancient Egyptian-Coptic, in which existential-locative constructions gradually acquired DOM properties, i.e. the alternation between possessum incorporation and overt accusative marking.

In the first stage, the possessum noun occurred between a clause-initial existential marker and a clause-final locative preposition, as in (48).

(48) Late Egyptian (Late Ramesside Letters 19:15)
wn *ḥmt* *ỉm* *m-dỉ-k*
EXIST copper there LOC-hand-2M.SG
'You have copper' (lit. 'there is copper in your hand').

The existential marker *wn* and the locative preposition *m-dỉ-* ('in-hand_of') underwent univerbation, with the loss of the locative preposition, which left the possessum after the bound person marker, resulting in structures like that in (49).

(49) Late Egyptian (P. Moscow 120, 1,58)
ỉn *wn-dỉ-f* *ỉs.t* *ḫ3rw*
INT EXIST-in_hand=3SG.M crew Syrian
'Does he have a Syrian crew?'

By the time of Coptic, the possessor is bound to the possessive predicate *ounta-*, and the lexical possessum can be marked by the accusative prefix *n-*, as in (50).

(50) Coptic (John 10:16, cited in Layton 2004: 306)
ounta-i=on *mmau* *n-hen-ke-esoou*
POSS-1SG=also there ACC-INDEF.PL-other-sheep
'I have other sheep too.'

The possessum can also be incorporated, as in (51).

(51) Coptic (Matthew 8:20, cited in Layton 2004: 308)
n-bašor *ounta-u-ne-u-bêb*
DEF.PL-fox POSS-3PL-POSS.PL-3PL-hole
'As for foxes, they have their holes.'

In Coptic, these constructions also acquired the DSM properties of transitive clauses in Coptic (Grossman 2015), with lexical possessor incorporation (52) alternating with overt nominative marking on the lexical possessor (53). In (52), the noun phrase referring to

the possessor ('the servant') is incorporated into the possessive predicate *ounte-*, while in (53), the lexical possessor ('the son') occurs after the possessive predicate, which bears a person marker (*-f*) that indexes the possessor.

(52) Coptic (Luke 17:9, cited in Layton 2004: 307)
mê *ounte-p-hmhal* *hmot*
Q POSS-DEF.M.SG-servant thanks
'Does the servant have any thanks?'

(53) Coptic (Mark 2:10, cited in Layton 2004: 308)
ount-f-eksousia *mmau* *nci-p-šêre* *m-p-rôme*
POSS-3SG.M-authority there NOM-DEF.M.SG-son GEN-DEF.M.SG-man
e-ka-nobe *ebol*
INF-put-sin out
'The son of man has authority to forgive sins.'

Compare with A/S-incorporation (54) vs. nominative case marking (55) in monotransitive verbal clauses:

(54) Coptic (Mark 15:2)
a-pilatos *-čnou-f*
PST-Pilate ask-3SG.M
'Pilate asked him.'

(55) Coptic (Mark 13:3)
a-f-čnou-f *nci-petros*
PST-3SG.M-ask-3SG.M NOM-Peter
'Peter asked him.'

In other words, in terms of indexing and case-marking, Coptic possessors behave like A and possessums behave like P.

While the examples of Ancient Egyptian-Coptic 'HAVE-drift' sketched above provide additional data for an already established pathway, the present study shows yet another pathway in which possessors are reinterpreted as A and possessums as P, namely, via the incorporation of body parts with possessor indexes in the same position as P indexes in underived verbs. This in turn provides evidence that transitivization is not a single pathway, especially if we take into account pathways like those described in Gildea (1998) for Cariban languages, e.g. POSSESSOR > NOMINATIVE, and POSSESSOR > ERGATIVE. These changes, interestingly, involve nominalizations being reinterpreted as main clauses, which is strikingly different from what we find in Coptic.

However, since synchronic polysemies of case-markers as well as diachronic evidence indicate that other pathways are possible, POSSESSOR > ACCUSATIVE (also in Gildea 1998), the motivations and mechanisms of P-drift still remain in need of clarification. A possible explanation might be found in Seržant (2013: 303), which explains the development of

canonical subject coding, e.g. nominative case marking, by appealing to semantics, arguing that "the consistent endowment of a constituent with some functional properties of a prototypical subject is the main catalyst for the (re)assignment of subject coding and behavioral properties to that constituent; it is an adjustment of grammatical properties to function." Seržant formulates the diachronic universal as follows (2013: 303):

> Consistent functional-semantic overlap of an oblique case-marked constituent with the prototypical subject may trigger the (re)assignment of the subject coding and behavioral properties to that constituent if there are no other constituents in the construction that would show even greater overlap.

Since possessors often have the semantic and discourse properties of prototypical subjects (e.g. animacy, topicality), and possessums often have the semantic and discourse properties of prototypical objects (e.g. inanimacy, focality), the way is paved for the morphosyntactic coding properties of the possession construction to be 'adjusted' to fit its semantics. In the case of Coptic, these coding properties mainly involve the participation in DSM (the alternation between nominative marking and incorporation) and DOM (the alternation between accusative marking and incorporation).

7 Conclusions

The phenomenon of bipartite stems with person interpositions seems to be quite rare, cross-linguistically. Bipartite stems with person interpositions have been documented only in several language families spoken in a fairly small number of areas (Bickel & Nichols 2007; Hildebrandt 2005). The diachronic pathways through which bipartite stems develop are assumed to include relics of derivational morphology or compounding, or infixation that has become morphologized (Bickel & Nichols 2007: 199, DeLancey 1996), the movement and entrapment of clitics (Nichols 2003), or the copying of affixes from another construction type, e.g. head class markers from nouns to verbs (Nichols 2003). Ancient Egyptian-Coptic presents us with a particular pathway of development that is close to the reanalysis of compounding, since compounding and incorporation are related morphological processes, and in some views, incorporation is a particular type of compounding (Mithun & Corbett 1999).

However, actual diachronic studies – in documented historical corpora – of the development of bipartite stems and interpositions are few and far between; previous research on bipartite stems has leaned heavily on reconstruction. The present case study shows how complex the development of bipartite stems and interpositions can be, since it is the specific interaction of Differential Object Marking – the alternation between overt accusative case marking vs. incorporation of possessed nouns – and Differential Object Indexing – the complementary distribution between object marking and object indexing, that led to the reanalysis of possessor indexes as P indexes, and more specifically, to the reanalysis of possessor prefixes as P indexes interposed within a simplex verb stem.

Abbreviations

1	first person
2	second person
3	third person
A	agent-like argument of canonical transitive verb
ACC	accusative
AOR	aorist (habitual verb form)
ART	article
BG	backgrounder, prefix that marks the verb as topical/an adjunct as focal
CNVB	converb
DAT	dative
DEF	definite
DEM	demonstrative
DET	determiner
EXIST	existential
F	feminine
FOC	focus
GEN	genitive
INDEF	indefinite
INF	infinitive
INT	intransitive
IMPF	imperfect
JUSS	jussive
LOC	locative
M	masculine
MOD	modifier marker
NEG	negation, negative
NOM	nominative
P	patient-like argument of canonical transitive verb
PL	plural
POSS	possessive
PRS	present
PROH	prohibitive
PST	past
PTCL	particle
PTCP	participle
Q	question particle/marker
REL	relative
SG	singular
SEQ	sequential verb form
STAT	stative verb form

References

Aikhenvald, Alexandra Y. 2007. Typological distinctions in word-formation. In Timothy Shopen (ed.), *Language typology and syntactic description*, vol. III: Grammatical Categories and the Lexicon, 1–64. Cambridge: Cambridge University Press.

Allen, James. 2013. *The Ancient Egyptian language. A historical study*. Cambidge: Cambridge University Press.

Bickel, Balthasar & Johanna Nichols. 2007. Inflectional morphology. In Timothy Shopen (ed.), *Language typology and syntactic description: Grammatical categories and the lexicon*, vol. III: Grammatical Categories and the Lexicon, 169–240. Cambridge: Cambridge University Press.

Comrie, Bernard. 1981. *Language universals and linguistic typology*. Chicago: University of Chicago Press.

Creissels, Denis. 2009. Uncommon patterns of core term marking and case terminology. *Lingua* 119(3). 445–459.

DeLancey, Scott. 1996. Penutian in the bipartite stem belt: Disentangling areal and genetic correspondences. In David Librik & Roxane Beeler (eds.), *Proceedings of the 22nd*

meeting of the Berkeley Linguistic Society: Special session on historical issues in native American languages, 37–54. Berkeley: Berkeley Linguistics Society.
Donohue, Mark. 1999. *Warembori*. Munich: LINCOM Europa.
Egedi, Barbara. 2010. Possessive constructions in Egyptian and Coptic. Distribution, definiteness, and the construct state phenomenon. *Zeitschrift für Ägyptische Sprache und Altertumskunde* 137. 1–12.
Engsheden, Åke. 2008. Differential object marking in Coptic. In Folke Josephson & Ingmar Söhrman (eds.), *Interdependence of diachronic and synchronic analyses*, 323–344. Amsterdam: John Benjamins.
Gardiner, Shayner. Forthcoming. The spread of the new pronominal possessive construction: A variationist approach to the letters of the Middle and New Kingdom. In Eitan Grossman & Stéphane Polis (eds.), *Possession in Ancient Egyptian*. Berlin: De Gruyter Mouton.
Gildea, Spike. 1998. *On reconstructing grammar: Comparative Cariban morphosyntax*. Oxford: Oxford University Press.
Grossman, Eitan. 2015. No case before the verb, obligatory case after the verb in Coptic. In Eitan Grossman, Martin Haspelmath & Tonio Sebastian Richter (eds.), *Egyptian-Coptic linguistics in typological perspective*, 203–225. Berlin: De Gruyter Mouton.
Grossman, Eitan. Forthcoming. Noun (phrase) incorporation? A preliminary cross--linguistic survey.
Grossman, Eitan & Martin Haspelmath. 2015. The Leipzig-Jerusalem transliteration of Coptic. In Eitan Grossman, Martin Haspelmath & Tonio Sebastian Richter (eds.), *Egyptian-Coptic linguistics in typological perspective*, 145–153. Berlin: De Gruyter Mouton.
Grossman, Eitan & Tonio Sebastian Richter. 2015. The Egyptian-Coptic language: Its setting in space, time and culture. In Eitan Grossman, Martin Haspelmath & Tonio Sebastian Richter (eds.), *Egyptian-Coptic linguistics in typological perspective*, 69–101. Berlin: De Gruyter Mouton.
Haspelmath, Martin. 2011. On S, A, P, T, and R as comparative concepts for alignment typology. *Linguistic Typology* 15(3). 535–567.
Haspelmath, Martin. 2015a. A grammatical overview of Egyptian and Coptic. In Eitan Grossman, Martin Haspelmath & Tonio Sebastian Richter (eds.), *Egyptian-Coptic linguistics in typological perspective*, 103–143. Berlin: De Gruyter Mouton.
Haspelmath, Martin. 2015b. The three adnominal possessive constructions in Egyptian Coptic: Three degrees of grammaticalization. In Eitan Grossman, Martin Haspelmath & Tonio Sebastian Richter (eds.), *Egyptian-Coptic linguistics in typological perspective*, 261–287. Berlin: De Gruyter Mouton.
Hildebrandt, Kristine A. 2005. The Himalayan enclave hypothesis and bipartite stems. Paper presented at the Annual meeting of the Linguistic Society of America, Oakland.
Iemmolo, Giorgio. 2011. *Towards a typological study of differential object marking and differential object indexation*. Pavia: University of Pavia dissertation.
Jacobsen, William H. 1980. Washo bipartite verb stems. In Kathryn Klar, Margaret Langdon & Shirley Silver (eds.), *American Indian and Indoeuropean studies. Papers in honor of Madison S. Beeler*, 85–100. Berlin: De Gruyter Mouton.

Kammerzell, Frank. 2000. Egyptian possessive constructions: A diachronic typological perspective. *STUF - Language Typology and Universals* 53(1). 97–108.
Kuhn, Karl Heinz (ed.). 1956. *Letters and sermons of Besa (Corpus Scriptorum Christianorum Orientalium), translated by Karl Heinz Kuhn*. Vol. 158. Leuven: Peeters.
Layton, Bentley. 2004. *A Coptic grammar with chrestomathy and glossary: Sahidic dialect*. 2nd edn. Wiesbaden: Otto Harrassowitz Verlag. 519.
Lazard, Gilbert. 2002. Transitivity revisited as an example of a more strict approach in typological research. *Folia Linguistica* 36(3-4). 141–190.
Loprieno, Antonio. 1995. *Ancient Egyptian. A linguistic introduction*. Cambridge: Cambridge University Press.
Loprieno, Antonio & Matthias Müller. 2012. Ancient Egyptian and Coptic. In Zygmunt Frajzyngier & Erin Shay (eds.), *The Afroasiatic languages*, 102–144. Cambridge: Cambridge University Press.
Mithun, Marianne. 1984. The evolution of noun incorporation. *Language* 60(4). 847–894.
Mithun, Marianne. 1986. On the nature of noun incorporation. *Language* 62(1). 32–37.
Mithun, Marianne & Greville G. Corbett. 1999. The effect of noun-incorporation on argument structure. In Lunella Mereu (ed.), *Boundaries of morphology and syntax*, 49–71. Amsterdam: John Benjamins.
Nichols, Johanna. 2003. A bipartite verb stem outlier in Eurasia: Nakh-Daghestanian. In Pawel M. Nowak, Corey Yoquelet & David Mortensen (eds.), *Proceedings of the 29th Annual Meeting of the Berkeley Linguistics Society: General session and parasession on phonetic sources of phonological patterns: Synchronic and diachronic explanations*, 321–336. Berkeley Linguistics Society.
Nichols, Johanna & Balthasar Bickel. 2005. Possessive classification and obligatory possessive inflection. In Martin Haspelmath, Matthew Dryer, David Gil & Bernard Comrie (eds.), *The world atlas of language structures*, 242–245. Oxford: Oxford University Press.
Polotsky, Hans Jakob. 1960. The Coptic conjugation system. *Orientalia* 29. 392–422.
Reintges, Chris H. 2004. *Coptic Egyptian (Sahidic dialect): A learner's grammar*. Cologne: Rüdiger Köppe.
Seržant, Ilja A. 2013. Rise of canonical subjecthood. In Ilja A. Seržant & Leonid Kulikov (eds.), *The diachronic typology of non-prototypical subjects*, 283–310. Amsterdam: John Benjamins.
Shisha-Halevy, Ariel. 1986. *Coptic grammatical categories: Structural studies in the syntax of Shenoutan Sahidic*. Roma: Pontificium Institutum Biblicum.
Shisha-Halevy, Ariel. 1988. *Coptic grammatical chrestomathy*. Leuven: Peeters.
Sojic, Nathalie. Forthcoming. The emergence of the possessive determiner in Ancient Egyptian. In Eitan Grossman & Stéphane Polis (eds.), *Possession in Ancient Egyptian*. Berlin: De Gruyter Mouton.
Stassen, Leon. 2009. *Predicative possession*. Oxford: Oxford University.
Winand, Jean. 2015. The oblique expression of the object in Ancient Egyptian. In Eitan Grossman, Martin Haspelmath & Tonio Sebastian Richter (eds.), *Egyptian-Coptic linguistics in typological perspective*, 535–560. Berlin: De Gruyter Mouton.

Winand, Jean. Forthcoming. Pronominal non-predicative possession in Late Egyptian. In Eitan Grossman & Stéphane Polis (eds.), *Possession in Ancient Egyptian*. Berlin: De Gruyter Mouton.

Zavala, Roberto. 2000. *Inversion and other topics in the grammar of Olutec (Mixean)*. Eugene: University of Oregon dissertation.

Chapter 6

Verbal semantics and differential object marking in Lycopolitan Coptic

Åke Engsheden
Stockholm University, Department of Archaeology and Classical Studies

This paper seeks to clarify the role of affectedness for the marking of direct objects through an analysis of a corpus of Lycopolitan Coptic texts (4th to 5th centuries AD). Whereas previous research has shown the importance of definiteness for the use of the direct object marker *n* with the so-called imperfective tenses (present and imperfect), it has proven more difficult to establish why it alternates in the non-imperfective with a zero marker. An attempt is made here to correlate the two different object constructions to Tsunoda's verb-type hierarchy, which was conceived to capture the degree of affectedness. It appears that the more affected a direct object is, the more likely it is to receive the direct object marker; whenever the object is little affected or unaffected, the zero-marked construction is preferred.

1 Introduction

Most works that have tried to explain Differential Object Marking (DOM) have focused on the semantic and information-structural properties of the direct object (animacy, definiteness, specificity, or topicality). There are a few languages for which the identification of the triggering factor behind DOM may be quite straightforward, such as definiteness in Modern Hebrew (Danon 2001) or specificity in Turkish (Enç 1991), but more commonly a multidimensional DOM system results not from a single factor, but from several interacting factors

One language with a multidimensional DOM is Coptic (Afro-Asiatic, Egyptian branch, now extinct).[1] Coptic DOM has received far less attention one might expect, given that Coptic has a long tradition in academic studies. Indeed, it is still unclear what exact factors are operative and how they relate to each other. The present study aims to show how the verb type, which is defined through the degree of affectedness found with the object,

[1]Egyptian is divided into the following language stages: Old Egyptian (c. 3100–2000 BC), Middle Egyptian (2000–1350 BC), Late Egyptian (1350–700 BC), Demotic (700 BC–AD 452) and Coptic (AD 200–1400). For a useful grammatical overview see Haspelmath (2015). For a detailed diachronic description aimed at a linguistic readership, see Loprieno (1995).

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influences whether the object is marked as such or receives no marking. This will be done through a corpus-based study of Lycopolitan, an early literary variety (traditionally and henceforth "dialect") of Coptic that was prevalent in the 4th and 5th centuries AD. The analysis indicates that the overtly marked construction is favoured by the presence of a highly affected object, whereas the zero-marked construction is favoured whenever the object is little affected or unaffected by the verbal action. Beside the value of such a study for our understanding of argument marking in Coptic itself, a wider knowledge of Coptic data should be of interest to linguistics because Coptic presents a system that is markedly different from better-explored patterns of DOM.

This paper is structured as follows. §2 provides a synthesis of Coptic object marking, including a summary of previous research. §3 contains a short description of the corpus of Lycopolitan texts and presents some background data. §4 presents an overview of the role of verbal semantics in research into DOM, and introduces some theoretical work on how verbs can be arranged on semantic grounds in broad verb-type categories. In §5, statistics are provided for the realisation of the object in Lycopolitan Coptic in relation to the verb types. The analysis suggests that the distribution of two alternating object constructions depends on the degree of affectedness of the object. In §6, the relationship between affectedness and other factors is discussed. Finally, §7 contains a summary and preliminary conclusions.

2 Argument realisation in Coptic

Coptic DOM is of the asymmetric type (de Hoop & Malchukov 2008; Iemmolo 2013), in which the direct object is either overtly marked with a preposition or zero-marked. The marker before NPs is a preposition, *n* (before labials *m*), the origin of which is ultimately locative. A longer form, *mma*, is used preceding the clitic person markers.[2] Both are subsumed in the following under the term *n*-marking. Note that one often has a double marking of the transitive construction, because many verbs have separate allomorphs depending on which object construction is used. The verbal allomorphs are, by and large, distinguished by different vowels because of the shape of the syllable and stress rules. The *n*-marked object appears only after the regular stem of the verb with a full vowel carrying stress (e.g. *nouje* 'to throw', see Table 1). A zero-marked NP, on the other hand, can appear both after the regular stem and as an allomorph of the verb with a reduced vowel.[3] For some morphological classes of the verb only one allomorph is used before zero-marked NPs and personal pronouns. Thus, the verb 'to throw' can assume the form *naj* before NPs and personal clitics (exemplified in Table 1, through the 3 msg. pronoun *f*).

[2] In Sahidic, the supra-regional dialect of the south, the equivalent forms are *n* and *mmo*. Both forms derive from the preposition *m*, used in older Egyptian for location in something ('essive') as well as for motion away from something ('elative'), from whence derives the partitive meaning that seems to have given rise to object marking (Winand 2015).

[3] Only the latter is possible in many other dialects. I have deliberately not distinguished these two cases in the counts in the tables, because I wish to avoid a digression on the morphology of the verb classes.

Table 1: Verb allomorphs and object marking in Lycopolitan

n-marked O	*nouje n* NP /*nouje mma-f*	—
zero-marked O	*nouj* NP / —	*naj*-NP / *naj-f*

There are also verbs that have different allomorphs with zero-marked objects, depending on what follows them. For instance, the verb *eire* 'to make' or 'to do' assumes the form *r* in front of NPs, while it becomes *ee* alt. *eit* in front of personal clitics.

The rules governing the selection between the *n*-marked form and the zero-marked form are far from clear. A few important observations that have been made in the past are summarised here and in the following subsections (§2.1–§2.2).

Case marking occurs only in the post-verbal position (this also applies to subject marking, see Grossman 2015). When an object is fronted, a familiar strategy for topicalisation, it is then not case-marked but is resumed postverbally through the appropriate person marker. Both *n*-marked and zero-marked objects occur (1a–1b):

(1) a. *t-mnt-lilou* *a-i-t^{h}bio* *mma-s*
DEF.F-ABST-youth PST-1SG-subdue ACC-3F.SG
'Youth I subdued' (Psalm-book 88, 27)

b. *eis* *p-kah* *m-p-keke* *a-n-šab-f*
PTCL DEF.M-land GEN-DEF.M-darkness PST-1PL-devastate-3M.SG
'Look, the Land of Darkness we devastated' (Psalm-book 201, 23)

Object marking with *n*/*mma* is also found in some non-differential contexts. For example, *n*-marking must be used whenever the direct object is separated from the verb by any element. In the following example (2), the object (*tef-hikôn*) is preceded by *n* due to the placement of the verbal particle *abal*. Zero-marked objects are only allowed when the object directly follows the verb with no intervening element.

(2) *ša-p-sêu* *etere* *p-iôt* *na-côlp* *abal* *n-tef-hikôn*
until-DEF.M-time REL DEF.M-father FUT-reveal PTCL ACC-POSS.3M.SG-image
n-t-pe *mma-u* / *(*côlp* *abal* *tef-hikôn)*
ADV-DEF.F-sky PREP-them / *reveal PTCL POSS.3M.SG-image
'until the time when the Father will reveal his image above them' (Kephalaia 103, 6)

Furthermore, the majority of verbs borrowed from Greek have their objects introduced with *n*/*mma* (3). This is determined by the valency of the verb and is not a differential environment and, consequently, Greek loan-verbs are not treated in this paper.

(3) *a-s-panhoplize* *mma-f*
PST-3F.SG-arm ACC-3M.SG
'She armed him' (Kephalaia 39, 4)

It has long been recognised that *n*-marking is used with an NP only when the latter is determined by any of the articles (definite or indefinite), the possessive determiner, or a demonstrative. The *n*-marking is not used with a bare noun, which signals a generic and indefinite sense. It would thus seem as if Coptic DOM conforms to the definiteness hierarchy: personal pronoun > proper noun > definite NP > indefinite specific NP > non-specific NP (e.g. Aissen 2003: 437). The cut-off point along this scale differs between the main two TAM categories (imperfective vs. non-imperfective), but the lowest ranked category (non-specific NPs) is excluded in both. As definiteness is an all-pervasive feature (irrespective of TAM), it can be said to be the single most important factor for the selection of *n*-marking in Coptic (cf. Sinnemäki 2014: 309).

2.1 Imperfective tenses

There is a TAM-based split in the distribution of object marking, to the effect that the *n*-marked form is obligatory with the imperfective tenses (present and imperfect) when the object is grammatically definite, and optional, it seems, with all other tenses (see §2.2).[4] This means that the *n*-marked form was used with personal pronouns (4), demonstratives (5), and NPs preceded either by the definite article (6) or the indefinite article (7) whenever the verb is in the present or the imperfect:

(4) *etbe* *peei* *pa-eiôt* *maeie* *mma-i* / *(*merit-∅)*
because DEM.M POSS.1SG-father love ACC-1SG / *love-1SG
'Because of this my father loves me' (John 10: 17)

(5) *auô* *tes-ke-meeu* *ne-s-jou* *n-neei* / *(*je-neei)*
and POSS.3F.SG-also-mother IMPF-3FSG-say ACC-this.N / *say-this.N
'And also her mother was saying this' (Acts of Paul 11, 25)

(6) *anak* *ti-saune* *m-pa-eiôt* / *(*souôn-pa-eiôt)*
1SG 1SG-know ACC-POSS.1SG-father / *know-POSS.1SG-father
'I know my father' (John 10: 15)

(7) *p-et-šôl* *n-ou-ônh* *abal* / *(*šal-ou-ônh)*
DEF.M-RELshed ACC-INDF-life out / *shed-INDF-life
'He who sheds a life' (Psalm-book 39, 26)

The rule of obligatory marking also holds true for the possessive determiner (8) that is formed from the definite article marking the gender and number of the possessee, to which the appropriate personal marker for the possessor is affixed.

[4] The rules governing object marking with the imperfective tenses were first described by Ludwig Stern (1880) before being elaborated by Pëtr Viktorovič Ernštedt (Jernstedt 1927), for which reason they are known as the Stern-Jernstedt rule in Coptological jargon.

(8) *hama=nde* *an* *ne-s-maeie* *n-tes-šêre*
at.the.same.time=but also IMPF-3F.SG-love ACC-POSS.3F.SG-daughter
phalkônilla / *(*meri-tes-šêre)*
Falconilla / *love-POSS.3F.SG-daughter
'at the same time she also loved her daughter Falconilla' (Acts of Paul 22, 17)

Grammatically definite objects are marked irrespective of specificity. In general, both specific and non-specific NPs are *n*-marked. Exceptions to this occur whenever a light verb forms a verbal expression together with its syntactical object, as in the following example (9), with *r-p-meeue* 'to remember' (lit. 'to do the remembrance'). *N*-marking is attested with light verbs in other dialects and texts (Layton 2000: 133).

(9) *ntaf* *n-šarp* *p-et-hn-plêrouma* *p-et-ah-tôbh* *mmaf*
3M.SG ADV-first DEF.M-REL-in-Pleroma DEF.M-REL-PST-pray ACC-3M.SG
auô *e-f-r-p-meeue*
and CIRC-3M.SG-do-DEF.M-memory
'The one who is in the Pleroma was what he first prayed to and remembered' (Tripartite tractatate 81, 30–32)

There is one lexical exception to this pattern, where the definite article has no influence on object marking with the imperfective tenses. The verb *ouôš* 'to want' is always used with a zero-marked definite object, as seen in (10):[5]

(10) *e-u-jpo* *m-p-et-⟨ou⟩-ouaš-f* / *(*ouôš* *mma-f)*
CIRC-3PL-give.birth ACC-DEF-3PL-wish-3M.SG / *wish ACC-3M.SG
'they begetting what they wish' (Tripartite tractate 64, 15)

Language history has been evoked to explain this exception. It has been suggested that the distinction between the two different frames – *wḫ3 n* O 'to look for', contrasting with *wḫ3* O, 'to wish' – was made at the earlier stage of the language (Demotic), and is preserved here (Depuydt 1993). In §5 I will offer an alternative functional explanation, which is based on an observation of Coptic data.

When no determiner is present, the object is zero-marked (11). In such a case the noun is non-referential and non-specific, and does not reappear in the discourse. Zero-marking usually applies to indefinite pronouns as objects, but there are counter-examples, such as the one found in the first part of the sentence quoted in (12).[6]

(11) *ti-šp-hmat* *n-toot-k* / *(*šôp* *n-hmat)*
1SG-receive-grace from-hand-POSS.2MSG / *receive ACC-grace
'I receive grace from your hand [i.e. 'I thank you'] (John 11: 41)

[5] In accordance with the Leiden Conventions for Papyrology, I use square brackets for restorations, and angled brackets for text omitted by the ancient scribe.

[6] One may try to attribute a specific reading to the object in (12), which would be awkward, or else one can explain the use of *n*-marking with *saune* 'to know' in morphological terms (see §5.3).

(12) *f-saune* *n-laue* *en* / *(?f-senouôn-laue* *en)* *oude*
3M.SG-know ACC-something NEG / *3M.SG-know-something NEG nor
f-r-laue *n-hôf* *en* *an*
3M.SG-do-something GEN-thing NEG also
'It [sc. the fruit] knows nothing, nor does it do anything' (Gospel of Truth 28, 9–10)

I have not found in my corpus of Lycopolitan Coptic any example of a proper noun as an object with the imperfective tenses, but data from other dialects show that *n*-marking must be used in such cases. As is apparent from the above, semantic and morphological definiteness triggers the marking of the object.

Note that object marking is an innovation in the evolution of the Egyptian language. Afroasiatic case has not left any indisputable traces. Differential marking with the preposition *n* started to appear around 1000 BC, first in the imperfective as a marker of the unbounded aspect (Winand 2015; cf. Engsheden 2006: 218–219), but it spread to the non-imperfective tenses in the first millennium AD.

2.2 Non-imperfective tenses

The rationale behind the alternating use of *n*/∅ with non-imperfective tenses is less clear. Coptic is rich in various TAM forms that are often labelled in an idiosyncratic way. What I call non-imperfective TAM forms covers every verbal form other than the present and the imperfect.[7]

The non-imperfective is a negatively-defined term that is used here as a label only: it encompasses the perfective as well as aspectually neutral forms. I include the future among the non-imperfective tenses. This differs from the tradition in Coptic linguistics to include the future, which is characterised by the infix *na-* (traditionally known as the 'first future'), along with the present and the imperfect, among the imperfective tenses.[8]

With the non-imperfective tenses (including the future), *n*-marking appears optionally with personal pronouns and NPs that have any of the three determiners: the indefinite, definite, or possessive articles. The common view of non-imperfective tenses among Coptologists is that "non-zero objects fluctuate (by speaker's stylistic choice)" (Layton 2000: 132). One leading Coptologist has even stated that *n*-marking and zero-marking of the object "are generally understood to be functionally equivalent" (Emmel 2006: 41). At first glance, this appears to be true, because both constructions are found in more or less identical contexts, as in (13a)–(13b), where both phrases have the same verb in a terminative subordinate clause:

[7] The group comprises past, future, optative, jussive, aorist, conditional, imperative, and a verb form called conjunctive that is used for subsequent action, etc.

[8] There are historical reasons for dividing Coptic TAM forms into two groups: the so-called adverbial/bipartite/durative pattern (i.e. my imperfective) vs. the verbal/tripartite/non-durative pattern (my non-imperfective). As the future tense form mostly appears in non-imperfective contexts, and shares its argument realisation strategies with non-imperfectives, I believe that the Coptic future is better classified among the non-imperfective tenses (following Quevedo Álvarez 2001). For this reason, counts for the future are included among the non-imperfective tenses in this article.

(13) a. *šant-i-jak-pa-agôn*
until-1SG-complete-POSS.1SG-struggle
'until I complete my struggle' (Psalm-book 93, 9)

b. *šant-i-jôk* *m-pa-agôn*
until-1SG-complete ACC-POSS.1SG-struggle
'until I complete my struggle' (Psalm-book 149, 19)

It should be noted that employing DOM with non-imperfective tenses is a relatively late phenomenon. There are no unequivocal examples of it from Demotic, the language stage that immediately preceded Coptic. Object marking in Demotic is restricted to the imperfective tenses, so that the extension of DOM into the non-imperfective tenses must be considered as being only a little older than the oldest texts in Coptic.

2.3 Previous research on DOM with the non-imperfective tenses

To find out whether the two alternating constructions really are functionally equivalent, it is best to undertake a corpus-based statistical investigation. I have in two previous papers (Engsheden 2006; 2008) analysed the canonical gospels in Sahidic Coptic (the supra-regional dialect of the south). I argued that Coptic can indeed be analysed as an example of a language with DOM, and that the selection of the *n*-marked form was determined by both referentiality (or specificity) and topicality (Engsheden 2006: 209–212; Engsheden 2008: 329–335), while further possible factors included semantic features such as degree of affectedness and causation. No evidence was found for Coptic DOM being sensitive to animacy.

A pertinent example for demonstrating that the marked form corresponds to the topic is found in the story of John the Baptist, whose head is what the story is about. Here, as elsewhere in this study, I mean by topic an aboutness topic, i.e. "the presupposed part of which pieces of information are conveyed" (Iemmolo 2010: 262), operating on sentence level. I cite here my original Sahidic example since the Gospel of Matthew is not preserved in Lycopolitan. Immediately before this passage, Salome has asked her stepfather the king to give her the head of John the Baptist (14a–14g):

(14) a. *a-f-lupei* *nci-p-rro* *emate*
PST-3M.SG-grieve AGT-DEF.M-king much

b. *etbe* *n-anauš=de* *mn* *n-et-nêj* *nmma-f*
because DEF.PL-oath.PL=PTCL with DEF.PL-REL-recline.STATE with-3M.SG

c. *a-f-ouehsahne* *e-ti* *mmo-s* *na-s* *a-f-joou*
PST-3M.SG-command to-give ACC-3F.SG to-3F.SG PST-3M.SG-send

d. *a-f-fi* *n-t-ape* *n-iôhannês* *hm-pe-šteko*
PST-3M.SG-carry ACC-DEF.F-head GEN-John in-DEF.M-prison

e. *a-u-eine* *mmo-s* *hijm* *p-pinaks*
PST-3PL-bring ACC-3F.SG on DEF.M-platter

f. *a-u-taa-s* *n-t-šeere* *šêm*
PST-3PL-give-3F.SG to-DEF.F-girl little

g. *a-s-eine* *mmo-s* *n-tes-maau*
PST-3F.SG-bring ACC-3F.SG to-POSS.3M.SG-mother

'The king grieved much. Because of the oaths and those who lay at table with him, he commanded to give it (sc. the head) to her, (and) he sent and beheaded John in the prison. It was brought on a platter and given to the little girl, (and) she brought it to her mother' (Matthew 14: 9–11)

The head is reactualised in (14c) through an *n*-marked pronoun. In (14d) it is referred to by means of the repetition of the NP, and mentioned next in (14e) with an *n*-marked pronoun before it appears in (14g), once more with an *n*-marked pronoun. Note that the original Greek text here does not have any object pronoun, so there is no influence from the original on the use of *n*-marking. The omission of pronouns for the object in Ancient Greek correlates to high topicality (Luraghi 2003), which lends support to my analysis.

The identification of topicality as a factor for the marking of the direct object was made by observing pronominal anaphora, and how they contribute to the discourse coherence. It is more difficult to demonstrate a similar topical function for full NPs. As with extinct languages in general, it is often difficult to investigate discourse-pragmatic features because the competence of native speakers is replaced by a closed corpus of texts. It is however not surprising to discover that topicality is a factor for DOM, because it has been recognised as such in a wide range of languages (Dalrymple & Nikolaeva 2011: 125–139; Escandell-Vidal 2009; Iemmolo 2010; Shain & Tonhauser 2010). Accordingly, I posit that the identification of topicality as a factor in DOM, as suggested for Sahidic Coptic in my previous articles, is also relevant for Lycopolitan Coptic.[9]

Topicality relates to definiteness in such a way that topics are mostly definite, whereas it is less likely that indefinites appear as topics in discourse. It is often taken for granted that topics are specific, even though this is not a necessary condition, at least in Romance languages (Leonetti 2013: 138–140). The idea that topicality is *the* trigger for DOM in the non-imperfective tenses is made problematic because marking varies in frequency depending on the semantic verb type, as will be illustrated below in §5. Topicality cannot account fully for the variation *n*/∅, since there is no reason for some verbs to never be followed by a topical object. Of those verb types that disprefer *n*-marking with non-imperfective tenses, simple zero-marked nouns must also be able to function as topics as one would not expect to encounter any lexical restrictions on verb, depending on the topical function of the object. A similar uneven distribution of the marker *a* in Spanish led Delbecque to state "if the discourse function were the *raison d'être* of the prepositional frame, then, the preposition should be able to appear after any transitive verb" (Delbecque 2002: 85). Consequently, topicality must work in conjunction with other factors in order to produce DOM in Coptic.

[9]Lycopolitan had a closer relationship to Sahidic than to any other Coptic dialect (Funk 1988; Kasser 2002: 343).

Specificity also plays an important role for *n*-marking in the non-imperfective tenses. In the example in (15), the definite article is used in a generic sense without reference to any specific individuals and, hence, there is no marking on the object:

(15) *tehm-n-hêke* *mn-n-et-mokh* *mn-n-cale* *mn*
invite-DEF.PL-poor and-DEF.PL-REL-afflicted and-DEF.PL-lame and
n-blle
DEF.PL-blind
'Invite the poor, the afflicted, the lame and the blind' (Luke 14: 13)

This example is from Sahidic, but it is not difficult to find examples also in Lycopolitan Coptic (see 20).

3 Data and methodology

Lycopolitan Coptic (Nagel 1991) was rediscovered at the beginning of the 20th century through the discovery of manuscripts from Middle Egypt that date to the 4th and 5th centuries AD. Lycopolitan can be divided into the following subdialects (Table 2), for which conventional labels are used (cf. Kasser 2006: 418–420).

Table 2: Lycopolitan subdialects

L4	Manichaean texts from Medinet Madi (including Homilies; Kephalaia; Psalm-book)[10]
L5	Gospel of John (only Chapters 2–20)
L6	Gnostic texts from Nag Hammadi; Acts of Paul
L9	Manichaean texts from the Dakhla oasis

Orthographical/phonological criteria form the basis of these subdivisions, with less attention being paid to grammatical features. L4 is the most important subdialect by size, and makes up almost two-thirds of the entire Lycopolitan text corpus. It is expected to grow as there is still unpublished material. The main representative of L5 is largely derived from a Sahidic *Vorlage* of the Gospel of John (Askeland 2012: 195–207). L9, known from texts discovered as late as in the 1980s, is the only subdialect to include original documentary material, whereas all preserved texts from the other subdialects seem to be translations from Greek, even though a translation directly from Syriac is sometimes invoked for some of the L4 texts. I have deliberately omitted two fragmentary leaves of the Pauline epistles, which have been classified as L3 (Kasser 2006: 419). Not only is the dialectal identification controversial, but the texts offer too little in matters of object marking to warrant their inclusion in this study. It should be noted that the internal

[10] I have used the older editions (Allberry, Böhlig, Polotsky), but these differ little with regard to objects from the still-incomplete re-edition in *Corpus fontium manichaeorum*.

relationships of the Lycopolitan varieties and their background are still a matter of discussion. Some commentators have even questioned whether they should be classified as a discrete group among the Coptic dialects (Funk 1985, cf. Kasser 2002).

To undertake a quantitative analysis of this corpus, I have built a relational database that includes all instances of the *n*/∅ variation from published Lycopolitan texts (with the exception of L3),[11] which contains 7244 entries. The database contains only those syntactic contexts that would potentially allow DOM marking, so cases where the *n*-marking is part of the valency, such as *amahte* 'to seize' or loans from Greek (see 3 above), are not included in the counts in Table 3–Table 6. Heavily restored passages have been omitted. The fact that the corpus comes from a limited period and is relatively large, including several longer texts, makes Lycopolitan appealing for the study of Coptic DOM.

Table 3 illustrates the difference between the number of attestations of *n*-marked constructions in imperfective (present and imperfect) and non-imperfective tenses. As noted above, the *n*-marked construction is obligatory when the verb is imperfective (cf. §2.1) with personal pronouns, proper nouns, and grammatically definite nouns.[12] The number of *n*-marked objects vs. the total number of occurrences is given in parentheses.

Table 3: Percentage of marked objects in Lycopolitan in DOM-sensitive contexts (affirmative sentences only)

	Personal pronoun	Proper noun	Poss. det. + NP	Def. art. + NP	Idf. art. + NP
Imperfective	100% (640/642)	- -	97% (63/65)	96% (100/104)	96% (22/23)
Non-imperfective	5% (206/3793)	54% (21/39)	37% (162/442)	36% (321/889)	32% (89/282)

The low figure for *n*-marked non-imperfective pronouns is a result of the preference for direct affixation of the clitic pronoun to the verb. The *n*-marking clearly dominates among proper nouns, whereas the zero-marked construction dominates among markers of definiteness. The proportion of *n*-marked constructions lessens slightly between definite and indefinite articles, but it is unclear whether any significance should be attributed to this. It is questionable whether these categories should even be arranged in a hierarchy.

When the data is broken down into Lycopolitan subdialects (Table 4) substantial differences become apparent, not only between the subdialects themselves, but also between texts and even within texts. For example, only 29% of direct objects in the Manichaean *Kephalaia* (L4) that are preceded by a determiner (indefinite, definite, or possessive) have *n*-marking, whereas 75% are so marked in the *Tripartite Tractate* (L6). One should note that the mean for L9 is negatively influenced by the very low number of *n*-marked objects in non-literary texts.

[11] Lycopolitan texts make up only a tiny fraction of all existing Coptic texts; only 2.5% according to one estimate (Diebner & Kasser 1989: 59).

[12] The few exceptions include cases such as those mentioned in respect to example (9), involving light verbs, but likely also include simple errors in textual transmission.

Table 4: Frequency of *n*-marked construction with NP determined by (in)definite article or possessive determiner in non-imperfective contexts in Lycopolitan subdialects (affirmative sentences)

	Poss. det. + NP		Def. art. + NP		Idf. art.+ NP		Mean
L4 Homilies	37%	(15/40)	31%	(20/65)	33%	(5/15)	34%
L4 Kephalaia	30%	(32/107)	35%	(110/311)	22%	(25/114)	29%
L4 Psalm-book	41%	(68/166)	31%	(82/264)	30%	(20/66)	34%
L5	29%	(14/49)	39%	(22/56)	52%	(13/25)	40%
L6	65%	(26/40)	67%	(73/109)	74%	(23/31)	69%
L9	18%	(7/38)	18%	(18/98)	10%	(3/29)	15%

The reason for the differences in marking between the various subdialects is currently unclear, but see the discussion in §6 for the possibility of a diachronic explanation.

4 Semantic verb categories and DOM

From the discussion above, it is clear that no single factor determines DOM in Coptic. Despite the general importance of definiteness and topicality in the non-imperfective domain, neither is able to account for the phenomenon, and one is left with a great many *n*-marked direct objects for which an interpretation as a topic seems unwarranted. One way out of this dilemma is to extend the analysis to the immediate environment of the object, to inquire whether there was any lexical preference for one construction or the other, and whether such preferences had any semantic motivation. One should bear in mind that in the event of a disorderly spread of the *n*-marked construction from the imperfective tenses into the non-imperfective tenses, there should be no significant differences in frequency of *n*-marked vs. zero-marked constructions between the various verb types. As will be seen in §5, however, such differences are precisely what are observed in the corpus. The two constructions of the object are unevenly distributed and largely in agreement with the degree of affectedness in correlation to the verb types, which demonstrates that DOM in Coptic cannot be interpreted as a matter of style, as mentioned in §2.2. Similarly, in a discussion on object marking in Hindi and Ostyak, Dalrymple & Nikolaeva (2011: 13) reached the conclusion that the degree of affectedness does not play a role in DOM in those languages because "[o]ptionality is observed with exactly the same subjects and exactly the same verbs." Nor would one expect there to be lexical restrictions for the use of the marked construction in the optional marking of objects. Note that optionality does not mean free variation, and it is doubtful whether any free variation involving case-marking vs. zero-form really exists (cf. McGregor 2010: 1615). Coptic is an example of what has been termed "semantically enabled optionality" (Kittilä 2005: 505).

The degree to which the semantic relationship between the verb and its arguments can contribute to the understanding of DOM has been shown in several studies of Spanish.

It is generally held that animacy in conjunction with specificity triggers the use of the prepositional accusative *a* before the direct object in standard European Spanish. This explains the different object encoding in Spanish sentences where an animate definite object is preceded by *a* (16a), and an inanimate definite object is not (16b).

(16) a. *Vi* *a* *la* *mujer.*
see.PST.1SG ACC DEF.F woman
'I saw the woman.'

b. *Vi* *la* *mesa.*
see.PST.1SG DEF.F table
'I saw the table.' (von Heusinger & Kaiser 2003: 41)

This traditional approach does not adequately explain the not-infrequent use of *a* before inanimate objects (cf. von Heusinger & Kaiser 2003: 51). One way to explain such irregularities is to employ a model that takes account of the whole predicate frame, including the relationship between subject and object (Delbecque 2002; García García 2007). Thus, in case of a dynamic verb that is used transitively, one can note a two-sided approach in which the agentive subject is conceived as reacting to the object, not only acting upon it (Delbecque 2002: 103). Marking vs. non-marking constructions represent different event structures. Differences in meaning can be approximated through translation, as illustrated by *abandonar* ∅ DO 'to desert, drop, give up' vs. *abandonar a* DO 'to leave behind, abandon' (Delbecque 2002: 93).

In their now-classic study, Hopper and Hopper & Thompson (1980) described transitivity as a scalar concept consisting of different parameters that can be arranged from high to low. Thus, telic action characterises a transitive clause more than an atelic action does, a volitional agent is more typical for transitivity than a non-volitional one, affirmative sentences are more likely to be transitive than negative sentences, and so forth. Another component in the original model was 'affectedness of O', which is characterised as total vs. partial affectedness. The idea of transitivity as a scalar concept was elaborated in a study by Tsunoda (1985), in which he arranged verbs in seven categories, and correlated these with case-frames from many unrelated languages and the degree of affectedness. The hierarchy can be reformulated as a scale: effective action > perception > pursuit > knowledge > feeling > relationship > ability. Verbs of effective action can be further divided into subtypes, depending on whether the verb is resultative ('to kill', 'to break', 'to bend') or non-resultative ('to hit', 'to shoot', 'to kick', 'to eat'). Perception verbs can likewise be divided into two subtypes, one more attained by verbal action, and the other less attained: 'to see', 'to hear', and 'to find' are considered more attained; 'to listen' and 'to look' as less attained. The model predicts that any category will be considered for object marking if any higher ranked (to the left in the scale) category is marked for transitivity. It has been said that the hierarchy correlates with both control and affectedness (Testelec 1998). These parameters were further studied by Malchukov (2005), who deconstructed Tsunoda's original hierarchy in two dimensions. The first (sub-)hierarchy notes decreased patienthood (break > hit > look for > search >

go) and the second (sub-)hierarchy decreasing agenthood (break > see/know > like/fear > freeze/be cold). Such divisions of verb types following semantic principles are of interest for the present paper because they provide points of comparison for testing, to see whether the statistical arrangement in Table 5 can be matched to semantic features.

It is probable that one can correlate DOM with the verb-type hierarchy. Some languages for which affectedness has been claimed as an important factor for DOM are: Abui (Kratochvíl 2014), Ancient Greek (Riaño 2014), Djapu (Næss 2007: 205), Mongolian (Guntsetseg 2008: 64–65), and Spanish (von Heusinger & Kaiser 2003; 2011). The difference between the partitive and the accusative in Finnish has also been explained in terms of partly affected vs. highly affected object (Hopper & Thompson 1980: 262; Næss 2004: 1203; critically Iemmolo 2013: 381). A practical application of verb-type hierarchies in relation to the argument realisation strategies in DOM can be found in a study by von Heusinger & Kaiser (2007), in which the authors were able to show how the frequency of the prepositional accusative increased over time, from Old Spanish up to modern Spanish, based on an analysis of successive translations of the Bible. In that article, only three verbal prototypes were chosen for analysis: (a) to hurt/kill, (b) to see/find, (c) to put/take. The authors found it plausible that the lexical semantics of the verb were a driving force in the diachronic development of Spanish DOM, and they carried the analysis a step further in a subsequent study of twelve verbs, which represented the first five verb types from Tsunoda's verb-type hierarchy (von Heusinger & Kaiser 2011). They discovered that the Spanish data did not entirely agree with the hierarchy, inasmuch as verbs of feeling (*querer* 'to love', *temer* 'to fear'), contrary to expectation, take a more transitive case-frame than verbs of perception, such as *ver* 'to see' or *mirar* 'to look at' (von Heusinger & Kaiser 2011: 612). The competition for agentivity between the participants in the event was mentioned as a possible cause for this (von Heusinger & Kaiser 2011: 613).

In Coptic, the object of perception verbs is typically introduced by a preposition, mostly *a* (Sahidic *e*), which also has a directional meaning 'to'. This explains why verbs of perception are poorly represented in the material analysed in §5.3. However, verbs of feeling are lower ranked than verbs of perception, and take a zero-marked object. This disagrees with Malchukov's two-dimensional model (2005: 81), which predicts that any intermediate verb-type category will display the same case-frame if both higher- and lower-ranked categories do so. Among the verbs of perception are *neu* 'to see' (e.g. 17) and *sôtme* 'to hear'.[13] There is no TAM-based split for perception verbs, as can be seen in a comparison between (17a), which has a verb in the imperfective tense, and (17b), which has a non-imperfective verb.

(17) a. *tn-neu* *ara-k* *tinou* *p-makarios*
1PL-see at-2M.SG now DEF.M-blessed
'We see you now, o blessed one' (Psalm-book 26, 12)

[13] A thorough study of the valency of this verb is found in Emmel (2006). The occasional alternation between *e* and the usual construction with *n*/*mma* is different from the *n*-marked vs. zero-marked construction, and is not pertinent to the present study.

b. *a-u-neu* *a-u-ouaine* *n-brre*
PST-3PL-see at-INDF-light GEN-new
'They saw a new light' (Psalm-book 196, 18)

The preposition *a* also occurs before the object with some speech verbs, such as *smou*, 'to bless' or *moute* 'to call'. This correlation of argument realisation and verb type is so strong that is also used with loan verbs from Greek, such as the mental verb *pisteue* 'to believe'.[14]

(18) *ari-pisteue* *a-p-ou*[*aein*]
do.IMP-believe to-DEF.M-light
'Believe in the light' (John 12: 36)

The government of perception verbs has historical roots in earlier phases of the Egyptian language. Indeed, the Coptic verbs introducing their object with the preposition *a* originally had diverse object marking strategies. It might be that the semantic development of late hieroglyphic *nw* 'to look at' (Depuydt 1988: 6–7), which later became a neutral verb of vision in Lycopolitan *neu* (Sahidic *nau*) 'to see', had operated on other perception verbs while retaining its government *r* (older Egyptian) > *a* (Coptic).

5 Analysis

In this section, I will review the ways that verb types relate to DOM in Lycopolitan Coptic. The data, which is drawn from the texts discussed in §3, is presented as a simple frequency list of verbs with *n*-marked and determined NPs, for which see Table 5. Very few proper nouns as objects with non-imperfective forms are attested, so conclusive results can rarely be obtained from them, so proper nouns have been omitted from the analysis and the discussion. For convenience, I use the verb-type hierarchy proposed by Tsunoda (§4). Tsunoda's division of verbs of effective action into two sub-categories, of resultative and non-resultative action, has also been expanded to include other categories, although for the purposes of this paper I refer mainly to change-of-state verbs. I also use Tsunoda's classification of verbs as a heuristic tool without any attempt to refine the verb-type hierarchy itself. Of course, it is an oversimplification to make verbs fit into a single category without paying attention to how the presence of other arguments in the sentence can lead to recategorisation.

All the transitive verbs listed in Table 5 are attested at least ten times in affirmative sentences of the Lycopolitan Coptic corpus. I define a verb as transitive (bi- or trivalent) if its object can be coded with the imperfective tenses in at least some contexts through *n*-marking or zero-marking. The table therefore only lists those verbs that participate in the *n*/∅ variation. As noted above, verbs of perception code their objects through the preposition *a*, and are therefore omitted. The object NP is always preceded by one of the determiners (definite article, indefinite article, or possessive determiner). The lemmas are listed in the first column in their Lycopolitan form (which differs only slightly from

[14] In Greek, the object takes the dative and so cannot be explained as a calque of the source language.

Sahidic). The second column shows the number of the morphological verb class according to a modern standard grammar (Layton 2000: 153–157). Where no number is provided, it means that the verb should be considered irregular. The third column presents a standard translation. The fourth column contains the percentage of *n*-marked constructions out of the total number of occurrences, and the ratio between *n* vs. ∅ is shown in parentheses. The fifth column provides the subdialect from which the attestations come; the dominance of L4 (Manichaean texts) is evident. The final column lists the subsection in this paper where examples of the verb in question may be found.

Table 5 shows that the range of *n*-marking with determined NPs that take non-imperfective tenses ranges from 0% to 92%, with a median of 36%. Even a quick perusal reveals

Table 5: Distribution of *n*-marking with non-imperfective tenses and determined NPs for most common transitive verbs in Lycopolitan Coptic (affirmative sentence only)

Verb	Class	Translation	Percentage (ratio)		Subdialect	Section
tôhme	1	to call	92%	(11/12)	L4	5.1.
hôtbe	1	to kill	91%	(10/11)	L4	5.1.
t^{h}bio	5	to humiliate (subdue)	75%	(21/28)	L4, L9	5.1.
kôt	2	to build	70%	(7/10)	L4	5.1.
sôtp	1	to choose	67%	(6/9)	L4	5.2.
jôk	2	to complete, finish	64%	(16/25)	L4, L5, L6, L9	5.1.
pôrš	1	to spread out	60%	(6/10)	L4	5.2.
teko	5	to destroy	54%	(7/13)	L4, L6	5.1.
jpo	5	to beget	53%	(8/15)	L4, L5, L6	5.1.
smine	7	to establish	48%	(12/25)	L4, L6, L9	5.1.
tôbh	1	to implore, pray	44%	(8/18)	L4, L5, L6	5.2.
ji	-	to take	41%	(74/179)	L4, L5, L6, L9	5.2.
teho	5	to reach, set up	36%	(8/22)	L4, L6	5.2.
nouje	2	to throw	36%	(4/11)	L4, L5, L6	5.2.
tnnau	5	to send	28%	(6/21)	L4, L5, L6, L9	5.2.
saune	-	to know	27%	(5/21)	L4, L6, L9	5.3.
mour	2	to bind	22%	(4/18)	L 4, L6	5.2.
eire	-	to do	22%	(37/168)	L4, L5, L6, L9	5.2.
ti	-	to give	21%	(30/141)	L4, L5, L6, L9	5.2.
cine	7	to find	21%	(19/91)	L4, L5, L6, L9	5.3.
shei	-	to write	20%	(3/18)	L4, L9	5.1.
teouo	5	to send, produce, utter	20%	(11/58)	L4, L5, L6, L9	5.2.
kô	2	to put, leave	17%	(12/71)	L4, L5, L6, L9	5.2.
fi	-	to bear, carry	14%	(10/69)	L4, L6	5.2.
eine	7	to bring	3%	(1/37)	L4, L5, L6, L9	5.2.
šine	7	to seek, ask	0%	(0/24)	L4	5.4.
meie	-	to love	0%	(0/20)	L4, L5, L6	5.5.

that the distribution of verbs shows agreement with semantically-defined verb types, ordered according to the affectedness hierarchy, especially at the upper and lower ends. There are considerable differences between the individual verbs with some (e.g. *hôtbe* 'to kill') predominately having the *n*-marked construction, while others (e.g. *meie* 'to love') exclusively take the zero-marked construction. In the imperfective tenses, all the listed verbs must take the *n*-marked construction with determined NPs (see §2.1). Morphology does not trigger the selection of the object construction. Most importantly, it contradicts the idea, first expressed by Steindorff (1894: 165), that the zero-marked construction is typical for the category of the fifth class, which contains etymological causatives. The Lycopolitan data show that verbs belonging to this class are subject to the effect of lexical semantics to the same degree as other verb types.

5.1 Verbs of effective action (resultative)

There is a strong correlation between marking and verbs of effective action. The subject is highly agentive and volitional, exercising full control over the action. The object is fully affected and undergoes a change of state. Among them one finds *hôtbe* 'to kill', *jôk* 'to complete', and *teko* 'to destroy', but verbs of creation are included in this group as well. The median for *n*-marked verbs of effective action is 64%, which means that resultative verbs of effective action are predominantly *n*-marked. A representative example of *n*-marking with a verb of effective action is (19):

(19) *a-u-hôtbe* *n-n-sabeue*
PST-3PL-kill ACC-DEF.PL-wise.PL
'They killed the wise men' (Homilies 80, 30)

It seems significant that the only example of a zero-marked object with *hôtbe* 'to kill', which is quoted in (20), has a generic referent. As noted at the end of §2, non-specific objects take the zero-marked construction.

(20) *n-t-he* *n-hn-rôme* *e-u-na-hatbe-hn-moui*
ADV-DEF.F-manner GEN-INDF.PL-man CIRC-3PL-FUT-kill-INDF.PL-lion
'in the manner of men who are about to kill lions' (Psalm-book 205, 30)

At first sight, the verb *tôhme* 'to call', which scores highest in selecting the *n*-marking in Table 5, does not seem to be an ideal candidate for demonstrating the relevance of affectedness; under normal circumstances the object of 'to call' is not affected by the verb action. However, Manichaean cosmogony provides a likely explanation for this deviance from the expected pattern. The call directed at the various Aeons is a metaphor for them being called into existence as a counter-measure against the approaching advent of Evil. This creational aspect can be highlighted by the translation 'call forth' (cf. Kasser 1991).

(21) *pa-iôt* *p-ouaine* *et-talêl…* *a-f-tôhme* *n-n-aiôn*
POSS.1SG-father DEF.M-light REL-be.glad PST-3M.SG-call ACC-DEF.PL-aeon
m-p-ouaine… *a-f-tôhme* *n-n-aiôn* *n-t-eirênê…*
GEN-DEF.F-light PST-3M.SG-call ACC-DEF.PL-aeon GEN-DEF.F-peace

a-f-tôhme *n-n-aiôn* *m-p-scraht…* *se-[h]atp*
PST-3M.SG-call ACC-DEF.PL-aeon GEN-DEF.M-rest 3PL-be.in.peace.STATE
têr-ou *se-ti-mete*
all-3PL 3PL-give-satisfaction

'My father, the glad Light… He called forth the Aeons of the Light into existence… He called forth the Aeons of the Peace… He called forth the Aeons of the Rest… They are all in peace and satisfied' (Psalm-book 203, 3–23)

Note that the sequence in (21) contains inanimate objects, whereas animates are normally expected with this verb, but it is unclear whether animacy has any significance for the selection of the object construction. This cannot easily be resolved because the boundaries between animate and inanimate were not sharp in the Manichaean universe. One might also wish to consider the topical status of the objects, which is was announced in the title of the psalm: "Concerning the Father and all his Aeons and the Stirring of the Enemy." The Aeons appear again in the discourse as a plural subject in the last line quoted above.

Related to this are examples of *n*-marking with the verb *t^{h}bio*, the usual translation of which is 'to humiliate', but are better translated in examples such as (22) as 'to subdue' (cf. 1a) when followed by an *n*-marked NP, to signal a higher degree of affectedness.

(22) *a-u-t^{h}bio* *m-p-keke*
PST-3PL-subdue ACC-DEF.M-darkness

'They have subdued the darkness' (Kephalaia 35, 5)

This does not prevent zero-marked constructions from appearing with similar meanings (23): one cannot readily identify the two Coptic predicate frames with different verbs in translation, as one might by using Delbecque's model for Spanish (see §4).

(23) *n-t-he* *je* *a-p-šarp* *n-rôme* *t^{h}bio-p-keke*
ADV-DEF.F-way PTCL PST-DEF.M-first GEN-man subdue-DEF.M-darkness

'in the way the first man subdued the darkness' (Kephalaia 49, 4)

In some cases, such as in (24), not even the combination of a definite reference and an affected object produces *n*-marking. The object *hôb* (lit. 'thing'), which does not recur in the discourse, can be regarded as synonymous to the head of an indefinite relative clause "that which [lit. the thing] you have given to me to do." What the work consisted of is not explained. Whether discourse factors play a role is unclear. The object is in this case non-topical.

(24) *a-ei-jak-p-hôb* *abal* *nt-a-k-tee-f* *nêi*
PST-1SG-finish-DEF.M-thing PTCL REL-PST-2MSG-give-3M.SG TO.1SG
a-tr-a-ee-f
TO-CAUS-1SG-do-3M.SG

'I have finished the thing you have given me to do' (John 17: 4)

Even though the general trend is clear, there are significant differences between the verbs in this group that require explanation. It is difficult to see any reason why *hôtbe* 'to kill' and *teko* 'to destroy' would take 91% and 54% of *n*-marked objects respectively.

5.2 Verbs of effective action (non-resultative)

Many of the verbs listed in Table 5 are action verbs where the actor retains control of the action expressed by the verb. The object is little affected, but may undergo limited physical movement (e.g. 'to spread out', 'to take', 'to throw', 'to set up', 'to bring'). The median percentage of *n*-marking in this group is 25%, so *n*-marking is clearly the exception. This group could be further divided into subcategories on semantic grounds, but this would obscure the relevant point, which is the overall dependency of object marking on the affectedness hierarchy.

It can be difficult to identify where the difference between the *n*-marked construction vs. the zero-marked construction lies. These difficulties are illustrated in (25a–25b).

(25) a. *a-f-nouje* *n-hn-jôr*[*me*] *ha* *te-f-staurôsis*
PST-3M.SG-throw ACC-INDF.PL-allusion concerning POSS.3M.SG-crucifixion
'He made allusions to his crucifixion' (Homilies 44, 17)

b. *a-u-nouj-ou-halu*[*sis*] *a-pe-f-mout*
PST-3PL-throw-INDF-chain to-POSS.3M.SG-neck
'They put a chain around his neck' (Homilies 48, 21)

Both examples are from the same text, which tells how Mani, the founder of the religion named after him, suffered martyrdom in AD 277. In the first example (25a), the *n*-marked object ('allusions') is inanimate and indefinite, and does not seem to be more affected than the object in (25b). Pragmatic factors may be relevant, because the 'allusions' in (25a) may be a reference to Mani's comments on his martyrdom in the following line. The marking would then indicate that the indefinite noun 'allusions' should be regarded as specific, serving as a referential anchor (cf. von Heusinger 2002). In (25b), on the other hand, the 'chain' does not appear again in the following discourse. To understand the importance of extent discourse-informational factors for *n*/∅ variation, one would need to explore discourse persistence in a systematic fashion, which would require time-consuming manual processing. Due to the non-narrative character of most texts in the corpus, there is little referential persistence with regard to the direct object, so that referential tracking becomes difficult.

Within this group are a few verbs for which the subject exercises full control over the action, and that have a non-affected object, such as *sôtp* 'to choose', *tôbh* 'to implore', and *teouo* 'to utter'. In this context, the verb *tôbh* 'to implore' has different case-frames depending on the animacy of the object. On the one hand, when the object is inanimate, such as in (26), *n*-marking is clearly preferred. On the other hand, zero-marking is used with animate objects, as in (27), in a way that is reminiscent of other speech verbs (cf. *teouo* 'to utter' and *šine* 'to ask').

(26) *e-u-a-tôbh* *m-p-kô* *abal* *n-n*[*ou-nabe*] *n-tot-f*
FUT-3PL-FUT-ask ACC-DEF.M-give away GEN-POSS.3PL-sin from-hand-3M.SG
m-p-noute
GEN-DEF.M-god
'They will ask for the forgiveness of their sins from God' (Homilies 23, 8)

(27) *a-k-tabh-pek-iôt*
PST-2MSG-ask-POSS.2MSG-father
'You have asked your father' (Psalm-book 44, 11)

It is also worth mentioning the verb *eire* 'to do'. It frequently occurs as a light verb in a few common expressions, such as *r-p-meue* 'to remember' (lit. 'to do the remembrance'), where the incorporation of the object underlines its low referential status (see 9). The compound is understood synchronically as a verb, and can even be followed by an *n*-marked object, as in (28).

(28) *e-s-na-r-p-meue* *mma-ou* *nci-ti-ekklêsia*
FOC-3F.SG-FUT-do-DEF.M-memory ACC-3PL AGT DEF.F-church
'the Church will remember them' (Tripartite Tractate 135, 25)

The presence of an object changes the telicity of the verb, which is another factor for high transitivity according to Hopper & Thompson (1980). One may contrast examples with a nuance 'to do s.o.'s wish', i.e. to fulfill it (29), against other examples where the activity is unbounded, as is the case of 'spending (lit. doing) time' (30).

(29) *hn* *ou-špnšôpe* *mn-ou-*[*c*]*lam* *ša-u-eire* *m-p-ôk*
in INDF-sudden and-INDF-rapid AOR-3PL-do ACC-DEF.M-delight
n-hêt *m-pou-jais*
GEN-heart GEN-POSS.3PL-lord
'Suddenly and rapidly they fulfill the desire of their lord' (Kephalaia 51, 16–17)

(30) *alla* *a-u-r-pou-kairos* *têr-f* *e-u-šôpe* *hn-*⟨*ou-thli*⟩*psis*
but PST-3PL-do-POSS.3PL-time all-3M.SG CIRC-3PL-become in-INDF-distress
'But they spent all their time falling in distress' (Kephalaia 150, 29)

Although the general trend between resultative and non-resultative action seems clear, there are considerable differences between the Lycopolitan subdialects regarding the frequency of the *n*-marked construction, as seen for a selection of verbs in Table 6.

This reveals very different proportions of *n*-marking in the various subdialects of Lycopolitan Coptic. It is notable that *n*-marking is virtually non-existent in L9, especially in non-literary texts. It is difficult to tell what this signifies. There are also remarkably low *n*-marking percentages for several verbs in L4. In this subdialect, zero-marking appears to constitute the normal transitive construction for verbs of non-resultative action. It seems as if *n*-marking is more common in L5, but the totals are rather low for that subdialect. By contrast, the percentage of *n*-marking is high in L6, with no real distinction

Table 6: Subdialectal variation in *n*-marking for a selection of verbs

	L4	L5	L6	L9
ji 'take'	30% (29/98)	72% (13/18)	88% (29/33)	10% (3/29)
eire 'do'	23% (26/115)	50% (4/8)	25% (6/24)	5% (1/18)
ti 'give'	10% (9/92)	50% (2/4)	82% (18/22)	5% (1/21)
kô 'put'	6% (3/53)	44% (4/9)	83% (5/6)	0% (0/3)
fi 'carry'	7% (3/46)	10% (1/10)	86% (6/7)	0% (0/5)

in treatment between resultative (as in §5.1) and non-resultative action verbs. Thus, *n*-marking is clearly the norm in the L6 dataset, the only clear deviation from the trend being *eire* 'to do', partly due to its frequent use as a light verb. If one omits objects as complements in complex predicates, which are zero-marked (as in 28), one still does not arrive at more than 46% *n*-marking with *eire*.

5.3 Verbs of perception/cognition

As stated above (end of §4), the object of perception verbs is mostly introduced by the preposition *a*. This explains why Table 5 only lists two examples of perception verbs participating in the *n*/∅ variation (*saune* 'to know', *cine* 'to find'). The agent exerts no control on the action and the object is unaffected.

The behaviour of *saune*, which has 27% *n*-marking, is unique to Lycopolitan: I do not know any examples of a *n*-marked object together with this verb in any dialect other than Lycopolitan. In the imperfective (31) the stem is *saune* (Sahidic *sooun*):

(31) [*e*]*peidê* *f-saune* *n-t-gnôsis*
since 3M.SG-know ACC-DEF.F-gnosis
'Since he knows the gnosis' (Kephalaia 233, 26)

The verb *saune* is evidently a secondary form, having developed out of a verb form often called the stative, which expresses a resultative state (Peust 2013: 163). The morphology of this verb is quite complex and presents many variants (overview in Vycichl 1983: 202). The verb *saune* itself, like similar verbs expressing knowledge in earlier Egyptian dialects, was originally an inchoative mental verb, not a verb of state, that had the basic meaning 'get to know'. It is only through the spread of the stative form that the verb evolved into a verb of state, similar to one meaning of the English 'to know'. In dialects other than Lycopolitan, *saune* (and predictable variants thereof) is used indiscriminately with imperfective and non-imperfective tenses. With non-imperfective TAM forms, NPs as direct objects are almost invariably zero-marked (and thus different from Lycopolitan). Originally, the stem may have been *souôn*/*snouôn*, and it appears as such in Lycopolitan with non-imperfective tenses, with either *n*-marking (32) or zero-marking (33).[15] In other dialects, this allomorph is used with zero-marking.

[15] *Saune* is also possible with a non-imperfective, when there is no object.

(32) *a-i-snouôn* *n-ta-psuchê*
PST-1SG-know ACC-POSS.1SG-soul
'I have known my soul' (Psalm-book 56, 26)

(33) *tote* *e-u-šan-souôn-p-iôt*
then COND-3PL-COND-know-DEF.M-father
'Then if they know the father' (Gospel of Truth 24, 31)

A comparatively high percentage (21%) of *n*-marked objects are found with *cine* 'to find'. In Tsunoda's original model, the verb 'to find' was listed among perception verbs based on the argument realisation of 'to find' in, for example, North Caucasian languages (cf. Ganenkov 2006), though 'to find' can also be a verb of perception in English (Simon-Vandenbergen 1999: 423). It is not easy to see which semantic reason could favour either one object marking strategy over another for this verb. Compare the following, where the objects are near synonyms expanded through a genitive adjunct, and both times have a verb in the past tense.

(34) a. […] *a-f-cine* *n-t-šbiô* *m-pf-his*[*e*]
PST-3M.SG-find ACC-DEF.F-requital GEN-POSS.3M.SG-toil
'… he has found the requital for his toil' (Homilies 83, 19)

b. *je* *a-i-cn-p-beke* *m-pa-hise*
for PST-I-find-DEF.M-reward GEN-POSS.1SG-toil
'for I have found the reward of my toil' (Psalm-book 93, 30)

The fragmentary context of (34a) makes it impossible to observe anaphoric behaviour. The selection seems to be truly optional.

Four instances where the object of *cine* is *n*-marked can be interpreted as being topical. This interpretation follows from the repetition of the object each time in short, explanatory nominal sentences.

(35) *a-i-cine* *n-t-mrô* *t-mrô* *te* *t-entolê…*
PST-1SG-find ACC-DEF.F-harbour DEF.F-harbour COP DEF.F-command
a-i-cine *n-n-ejêu* *n-ejêu* *ne* *p-rê*
PST-1SG-find ACC-DEF.PL-ship DEF.PL-ship COP.PL DEF.M-sun
mn-p-ooh *a-i-cine* *n-ou-hêu* *e-mn-ase* [*nhêt-f*]
and-DEF.M-moon PST-1SG-find ACC-INDF-gain CIRC-NEG-loss in-3M.SG
'I found the harbour. The harbour is the Commandment… I found the ships. The ships are the sun and the moon… I found a gain wherein there is no loss…' (Psalm-book 168, 1–9)

There is a further consideration, because the second consonant in *cine* is identical to the object marker *n*, and this could play a role for the common use of zero-marking. It is true that phonology can sometimes override semantic-pragmatic parameters, as happens sometimes with the Spanish *a* (Kliffer 1995: 108), in order to promote the zero-marked

form. But the percentage of attestations for the *n*-marked construction differs between *cine* (21%) and *šine* (0%), which has the same rhyming pattern, so the idea of phonological influence is unlikely.

5.4 Verbs of pursuit

In this category the subject has a low degree of control and the object is unaffected. The list comprises a single verb of pursuit, *šine* 'to ask', which here is zero-marked (36). In other dialects (Akhmimic, Mesokemic), where the percentage of *n*-marking is higher, the object of this verb can be *n*-marked.

(36) *a-ke-mathêtês* *šn-p-apostolos*
PST-other-disciple ask-DEF.M-apostle
'Another disciple asked the apostle' (Kephalaia 208, 15)

5.5 Verbs of feeling

Here the subject lacks control, the object is not affected, and the verb expresses a state. The verb *meie* (Sahidic *me*) 'to love' is incompatible with *n*-marking in the non-imperfective tenses, a feature that appears to be shared by all Coptic dialects.[16] See (4) and (8) for examples with the imperfective. Its antonym *maste* 'to hate', not included in the list above, also avoids *n*-marking in the non-imperfective.

(37) *a-u-mrre-p-eau* *gar* *n-n-rôme*
PST-3PL-love-DEF.M-glory for GEN-DEF.PL-man
'for they loved the glory of men' (John 12: 43)

In this context, it is appropriate to consider *ouôš* 'to want', 'to wish'. As mentioned at the end of §2.1, this verb is the sole exception to the rule that definite objects must be *n*-marked with the imperfective tenses. A problem for the historical explanation referred to earlier is that the difference between *wḫ3 n* O 'to look for' and *wḫ3* O 'to wish' is found only in Demotic (Depuydt 1993), meaning that it had disappeared before the spread of *n*-marking into the non-imperfective. Once the former expression had disappeared, it would have been possible for *ouôš* to have taken part in the expansion of object marking. A semantic analysis based on affectedness offers an alternative, functional explanation, which holds true synchronically. Thus, semantics may have blocked *ouôš* from acquiring object marking in the non-imperfective, and it may have had a similar effect on the imperfective.

[16] I know of only one possible example of this verb with a marked direct object: *p-e-ša-u-ka-ou-koui de na-f ebol e-ša-f-me n-ou-koui* 'The one to whom little is forgiven, he loves only a little' (Sahidic Luke 7: 57), in which the object is focalised by means of the preposition. It therefore does not seem to be an example of a differential context.

6 Discussion

The foregoing section lends support to the idea that Coptic DOM can be successfully analysed, based upon a view of transitivity as a scalar concept involving several semantic features (Hopper & Thompson 1980). In Coptic, definiteness, specificity, topicality, and affectedness seem to act together to create a high degree of transitivity, and interact in triggering *n*-marking. How the various factors contributing to DOM in Coptic relate to each other is open to question. The study of the development of DOM in Coptic is still in its formative stages, and the following remarks are therefore preliminary, and have no immediate bearing on Coptic dialects other than Lycopolitan.

Definiteness is a factor for object marking with all TAM forms, although in the non-imperfective tenses it leads only to optional DOM (cf. §4). I posit that marking spread across definite NPs more-or-less simultaneously, and not stepwise from one definite category to the next, because the difference in percentages of *n*-marked nouns seems negligible when compared to determined NPs (see Table 3). This last fact speaks against a spread along the definiteness hierarchy scale as claimed, *inter alia*, for the Spanish prepositional accusative (Aissen 2003). The topical status of the marked objects may have been a secondary development, which followed from semantic definiteness. A topical function is best visible in the phonologically heavier form *mma*, which was used for pronouns (see 14) that are semantically definite. The *n*-marked object would receive separate stress from the verb, and thus in an iconic way reflect the saliency of the object. If so, *n*-marking might be described as a topicalisation strategy through right-dislocation, even though the right periphery is not recognised as a position for topics in Coptic. It is, however, difficult to identify topicality in NPs as objects by studying referential coherence, because the non-narrative character of most Lycopolitan texts is such that objects, once mentioned, do not commonly persist over several sentences, and their behaviour cannot be observed. Substitution or question tests for topicality are difficult to apply without a native speaker's intuition. It can be expected that the effect of topicality for overruling the expected selection of *n* vs. ∅ would be greatest for non-effective action verbs (see §5.2), because this is the only group in which one notes significant differences between the subdialects (see Table 6). These differences, ultimately affecting the percentage and their placement in the list in Table 5, indicate that not all factors operated in an identical manner in all subdialects.

The frequency list of Lycopolitan transitive verbs and their construction with non-imperfective tenses, in Table 5, shows that object marking was generally in agreement with Tsunoda's affectedness hierarchy, particularly at the upper and lower ends. Over 90% of examples of a typical action verb with an affected object (§5.1), such as 'to kill', take *n*-marked objects, while a typical verb of feeling (§5.5), 'to love', takes 0%. The more the object is affected, the more likely it is to receive *n*-marking. It is more difficult to assess the large group of non-effective action verbs (§5.2).

The correlation between marking, which is an innovation of Egyptian-Coptic language history, and the affectedness hierarchy with the non-imperfective, must reflect synchronic priorities. It is conceivable, a priori, that the marking spread randomly from

the imperfective to the non-imperfective without any functional basis. However, the difference in marking frequency by verb type suggests that this was not the case. If it was, one would be at a loss to explain why some verbs do not have the marker with the non-imperfective tenses, but uniformly do with the imperfective ones. Note that my interpretation of Lycopolitan DOM is a counter-example against the generalisation that asymmetric DOM systems are not regulated by affectedness (Iemmolo 2013). The TAM-based split that has differing rules for the imperfective and non-imperfective tenses under similar syntactic conditions (obligatory vs. pragmatic-semantically determined DOM) already speaks against the general validity of this hypothesis.

At first glance, there seems to be no particular information-structural reason why the Manichaean texts (L4) should have far fewer *n*-marked direct objects than the Gnostic texts (L6). The difference between L4 and L6 is significant, as indicated by a chi-square test with Yates' correction that yields a statistical significance at $p < 0.001$. Since the *n*-marked construction was an innovation, one may feel inclined to assume that the difference between the percentages in L4 and L6 would reflect an ongoing spread of the marker into the non-imperfective tenses. This would, in principle, mean that texts with a low incidence of the *n*-marked construction are from an older stage of language development, and texts with a high incidence of the *n*-marked construction are from a more recent stage. It is plausible to conceive that the use of *n* as a topic-marker was extended to non-topical contexts, so that more and more determined and specific expressions would ultimately receive the marker within the non-imperfective domain (cf. Dalrymple & Nikolaeva 2011: 208). Affectedness may have been the path along which the construction spread. It might be argued, on the basis of the more frequent use of *n*-marking in L6, that the role of affectedness was then gradually diminished as definiteness alone, irrespective of any eventual topical role of the object, would often trigger marking. This seems to move towards a clearer separation of a group of verbs (action verbs) that favoured *n*-marking from verbs of feeling that favoured zero-marking, indicating a lexically-based selection of object construction (cf. Iemmolo 2013: 390).

It is difficult to offer support for such an assumed diachronic scenario, or to refute it through independent criteria, since the dating of manuscripts, let alone of the texts themselves, is very insecure. But diachronic studies on DOM in Spanish show a similar span in object marking as that observed between the Lycopolitan subdialects, and these appear to have evolved over two centuries. Thus, in *El Cantar de mio Cid* from the 13th century, only 36% of animate direct objects are overtly marked (data from Brenda Laca, quoted in von Heusinger & Kaiser 2011: 602, yet two centuries later objects are marked under identical conditions at 70%–90% (von Heusinger & Kaiser 2011: 610). Conversely, such variation does not need to be understood as a reflex of language diachrony. This can be seen in Old Japanese, where NPs from contemporary prose texts of 10th century are marked at 44%–72% (Sadler 2002: 248). Data from Portuguese also show that there can be substantial quantitative differences between contemporary texts (Delille 1970: 85, 119–120). Furthermore, the letters from L9, in which object marking is sparingly attested, are originals and can be securely dated to the latter half of the 4th century AD. This makes them, for all practical purposes, contemporary with the text copies of L6, in which

n-marking is the dominant pattern. Thus, variation in object marking was acceptable concurrently. Such cases are a reminder that differences between subdialects should not necessarily be interpreted as a reflex of diachronic development. Despite this, the blurry picture of Coptic DOM is likely to reflect an evolving DOM system.

It is worth reasserting the lack of any role for animacy in Coptic DOM, to judge from the Lycopolitan corpus used in this paper. It is not possible to find any parallel alignment between verb hierarchy and animacy that is in a way similar to what von von Heusinger & Kaiser (2007) suggested in their analysis of Spanish. They observed a decrease in object marking from the verbs 'to kill', 'to see', 'to consider', and 'to have', which were analysed as representatives of different verb classes. Their conclusion that "the particular ranking depends on the animacy requirement imposed by the verb on the direct object" (von Heusinger & Kaiser 2011: 605) is not cogent because it was based on a study of no more than four to six verbs. Searching the animate vs. inanimate objects listed in this database reveals no such animacy ranking. Rather, the Coptic data indicate that the affectedness scale is parallel to the decrease of control by the actor on the process of the verb. Furthermore, Coptic DOM calls into question the general validity of any theory that relies on the need for disambiguation, on syntactic or semantic grounds, between the agent and object as a motivation for DOM (e.g. Aissen 2003; de Swart 2005; Primus 2012). The word order SVO means that there was no need for disambiguation of the core participants.

7 Conclusion

The present study supports the claim that Coptic DOM in the non-imperfective domain has a functional motivationand is not arbitrary. I do not claim to have formulated a set of inviolable rules. Instead, I have shown tendencies that seem to be shared by all Lycopolitan subdialects (except for L9), for which the *n*-marking number is too low to permit any satisfactory conclusions. The clear differences in *n*-marking percentages between the Lycopolitan subdialects does, however, confirm their relative independence. It is apparent from the analysis that semantic factors act in conjunction with discourse-structural factors in Lycopolitan Coptic. The quantitative analysis in §5, on the alternation of marking of NPs as objects through *n*/∅ with non-imperfective tenses, has revealed striking differences in marking between the semantic verb categories. There is an overall agreement with Tsunoda's verb-type hierarchy: a highly-affected object with a dynamic action verb (e.g. *hôtbe* 'to kill') is likely to receive *n*-marking; a little-affected object is less likely to receive *n*-marking (e.g. *nouje* 'to throw'). A low *n*-marking percentage is found for the few verbs of perception/cognition that take the *n*/∅ variation (*saune* 'to (get to) know', *cine* 'to find'). Verbs of feeling (e.g. *meie* 'to love') uniformly have a zero-marked construction.

Although generalised findings from an analysis of Lycopolitan cannot be extended to Coptic as a whole, it should be apparent that it is relevant to examine the semantics of verb types is a relevant subject in future studies of DOM in that language.

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Abbreviations

ABST	Abstract noun formative	FUT	Future
ACC	Object marker	GEN	Genitive
ADV	Adverb	IMP	Imperative
AGT	Agent preposition	IMPF	Imperfect
AOR	Aorist	INDF	Indefinite
CAUS	Causative	M	Masculine
CIRC	Circumstantial clause marker	NEG	Negative
		PL	Plural
COND	Conditional	POSS	Possessive article/pronoun
COP	Copula	PREP	Preposition
DEF	Definite article	PST	Past
DEM	Demonstrative pronoun	PTCL	Particle
F	Feminine	REL	Relative
FOC	Focalizer	STATE	Resultative state

References

Aissen, Judith. 2003. Differential object marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21(3). 435–483.

Askeland, Christian. 2012. *John's gospel. The Coptic translation of its Greek text*. Berlin: De Gruyter Mouton.

Dalrymple, Mary & Irina Nikolaeva. 2011. *Objects and information structure*. Cambridge: Cambridge University Press.

Danon, Gabi. 2001. Syntactic definiteness in the grammar of Modern Hebrew. *Linguistics* 39(6). 1071–1116.

de Hoop, Helen & Andrej L. Malchukov. 2008. Case-marking strategies. *Linguistic Inquiry* 39(4). 565–587.

de Swart, Peter. 2005. Noun phrase resolution: The correlation between case and ambiguity. In Mengistu Amberber & Helen de Hoop (eds.), *Competition and variation in natural languages. The case for case*, 205–222. Amsterdam: Elsevier.

Delbecque, Nicole. 2002. A construction grammar approach to transitivity in Spanish. In Kristine Davidse & Béatrice Lamiroy (eds.), *The nominative & accusative and their counterparts*, 81–130. Amsterdam: John Benjamins.

Delille, Karl Heinz. 1970. *Die geschichtliche Entwicklung des präpositionalen Akkusativs im Portugiesischen*. Bonn: Romanisches Seminar der Universität Bonn.

Depuydt, Leo. 1988. Die "Verben des Sehens": Semantische Grundzüge am Beispiel des ägyptischen. *Orientalia* 57. 1–13.

Depuydt, Leo. 1993. For the sake of *ouôš*, 'love': An exception to the Stern-Jernstedt rule and its history. *Journal of Egyptian Archaeology* 79. 282–286.

Diebner, Bernd Jörg & Rodolphe Kasser. 1989. *Hamburger Papyrus Bil. 1. Die alttestamentlichen Texte des Papyrus Bilinguis 1 der Staats- und Universitätsbibliothek Hamburg*. Geneva: Patrick Kramer éditeur.

Emmel, Stephen. 2006. Coptic grammatical terminology before and after Polotsky: Transitivity and case. *Lingua Aegyptia* 14. 31–54.

Enç, Mürvet. 1991. The semantics of specificity. *Linguistic Inquiry* 22(1). 1–25.

Engsheden, Åke. 2006. Über die Markierung des direkten Objekts im Koptischen. *Lingua Aegyptia* 14. 199–222.

Engsheden, Åke. 2008. Differential object marking in Coptic. In Folke Josephson & Ingmar Söhrman (eds.), *Interdependence of diachronic and synchronic analyses*, 323–344. Amsterdam: John Benjamins.

Escandell-Vidal, M. Victoria. 2009. Differential object marking and topicality: The case of Balearic Catalan. *Studies in Language* 33(4). 832–884.

Funk, Wolf-Peter. 1985. How closely related are the Subakhmimic dialects? *Zeitschrift für Ägyptische Sprache und Altertumskunde* 112(1-2). 124–139.

Funk, Wolf-Peter. 1988. Dialects wanting homes: A numerical approach to the early varieties of Coptic. In Jacek Fisiak (ed.), *Historical dialectology. Regional and social*, 149–192. Berlin: Mouton de Gruyter.

Ganenkov, Dmitry. 2006. Experiencer coding in Nakh-Daghestanian. In Leonid Kulikov, Andrej L. Malchukov & Peter de Swart (eds.), *Case, valency and transitivity*, 179–201. Amsterdam: John Benjamins.

García García, Marco. 2007. Differential object marking with inanimate objects. In *Proceedings of the workshop "Definiteness, specificity and animacy in Ibero-Romance languages"*, 63–84. Universität Konstanz: Fachbereich Sprachwissenschaft (Arbeitspapier 122).

Grossman, Eitan. 2015. No case before the verb, obligatory case after the verb in Coptic. In Eitan Grossman, Martin Haspelmath & Tonio Sebastian Richter (eds.), *Egyptian-Coptic linguistics in typological perspective*, 203–225. Berlin: De Gruyter Mouton.

Guntsetseg, Dolgor. 2008. Differential object marking in Mongolian. In Florian Schäfer (ed.), *SinSpec: Working Papers of the FSB732 'Incremental Specification in Context'*, vol. 1, 53–69. Stuttgart: Online Publikationsverbund der Universität Stuttgart.

Haspelmath, Martin. 2015. A grammatical overview of Egyptian and Coptic. In Eitan Grossman, Martin Haspelmath & Tonio Sebastian Richter (eds.), *Egyptian-Coptic linguistics in typological perspective*, 103–143. Berlin: De Gruyter Mouton.

Hopper, Paul J. & Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56(2). 251–299.

Iemmolo, Giorgio. 2010. Topicality and differential object marking. Evidence from Romance and beyond. *Studies in Language* 34(2). 239–272.
Iemmolo, Giorgio. 2013. Symmetric and asymmetric alternations in direct object encoding. *STUF – Language Typology and Universals* 66. 378–403.
Jernstedt, Peter. 1927. Das koptische Präsens und die Anknüpfungsarten des näheren Objekts. *Doklady Akademii Nauk SSSR* 3. 69–74.
Kasser, Rodolphe. 1991. Le premier chant de Thôm, perle de l'hymnologie manichéenne. In Alois Van Tongerloo & Søren Giversen (eds.), *Manichaica Selecta. Studies presented to Professor Julien Ries on the occasion of his seventieth birthday*, 141–148. Leuven: Brepols.
Kasser, Rodolphe. 2002. Le lyco-diospolitain en sa complexité, vestiges régionaux, altérés, devenus polymorphes, de la langue véhiculaire pré-copte utilisée en Haute-Égypte? In Hans-Gebhard Bethge (ed.), *For the children, perfect instruction. Studies in honor of Hans-Martin Schenke on the occasion of the Berliner Arbeitskreis für koptisch-gnostische Schriften's thirtieth year*, 341–351. Leiden: Brill.
Kasser, Rodolphe. 2006. Kat'aspe aspe. Constellations d'idiomes coptes plus ou moins bien connus et scientifiquement reçus, aperçus, pressentis, enregistrés en une terminologie jugée utile, scintillant dans le firmament égyptien à l'aube de notre troisième millénaire. In Louis Painchaud & Paul-Hubert Poirier (eds.), *Coptica – gnostica – manichaica. Mélanges offerts à Wolf-Peter Funk*, 389–492. Quebec: Presses de l'Université Laval Québec.
Kittilä, Seppo. 2005. Optional marking of arguments. *Language Sciences* 27. 483–514.
Kliffer, Michael D. 1995. El "a" personal, la kínesis y la individuación. In Carmen Pensado (ed.), *El complemento directo preposicional*, 93–111. Madrid: Visor Libros.
Kratochvíl, František. 2014. Differential argument realization in Abui. *Linguistics* 52(2). 543–602.
Layton, Bentley. 2000. *A Coptic grammar*. Wiesbaden: Harrassowitz.
Leonetti, Manuel. 2013. Information structure and the distribution of Spanish bare plurals. In Johannes Kabatek & Albert Wall (eds.), *New perspectives on bare noun phrases in Romance and beyond*, 121–156. Amsterdam: John Benjamins.
Loprieno, Antonio. 1995. *Ancient Egyptian. A linguistic introduction*. Cambridge: Cambridge University Press.
Luraghi, Silvia. 2003. Definite referential null objects in Ancient Greek. *Indogermanische Forschungen* 108. 167–194.
Malchukov, Andrej L. 2005. Case pattern splits, verb types and construction competition. In Mengistu Amberber & Helen de Hoop (eds.), *Competition and variation in natural languages. The case for case*, 73–117. Amsterdam: Elsevier.
McGregor, William B. 2010. Optional ergative case marking systems in a typological-semiotic perspective. *Lingua* 120(7). 1610–1636.
Næss, Åshild. 2004. What markedness marks: The markedness problem with direct objects. *Lingua* 114(9–10). 1186–1212.
Næss, Åshild. 2007. *Prototypical transitivity*. Amsterdam: John Benjamins.

Nagel, Peter. 1991. Lycopolitan (or Lyco-Diospolitan or Subakhmimic). In Aziz M. Atiya (ed.), *Coptic encyclopedia*, vol. 8, 151–158. New York: Macmillan.

Peust, Carsten. 2013. Bemerkungen zur berberischen Etymologie des spätägyptischen Verbs *swn / sooun* 'wissen'. *Lingua Aegyptia* 21. 159–165.

Primus, Beatrice. 2012. Animacy, generalized semantic roles, and differential object marking. In Monique Lamers & Peter de Swart (eds.), *Case, word order and prominence: Interacting cues in language production and comprehension*, 65–90. Dordrecht: Springer.

Quevedo Álvarez, Alberto J. 2001. El futuro I copto: Un tiempo de aspecto perfectivo. In Josep Cervelló Autori & Alberto J. Quevedo Álvarez (eds.), *… Ir a buscar leña. Estudios dedicados al Prof. Jesús López*, 161–167. Barcelona: Aula Ægyptiaca.

Riaño, Rufilanchas Daniel. 2014. Differential Object Marking in Ancient Greek. *Linguistics* 52(2). 513–541.

Sadler, Misumi. 2002. From a pragmatic marker to a direct object marker: The Japanese particle *o* in written discourse. *Studies in Language* 26(2). 243–281.

Shain, Cory & Judith Tonhauser. 2010. The synchrony and diachrony of differential object marking in Paraguayan Guaraní. *Language Variation and Change* 22(3). 321–346.

Simon-Vandenbergen, Anne-Marie. 1999. The semantics of English *find* in contrast with Dutch *vinden*. In Guy A. J. Tops, Betty Devriendt & Steven Geukens (eds.), *Thinking English grammar: To honour Xavier Dekeyser, Professor Emeritus*, 409–421. Leuven: Peeters.

Sinnemäki, Kaius. 2014. A typological perspective on Differential Object Marking. *Linguistics* 52(2). 281–313.

Steindorff, Georg. 1894. *Koptische Grammatik*. Berlin: Reuther und Reichard.

Stern, Ludwig. 1880. *Koptische Grammatik*. Leipzig: T. O. Weigel.

Testelec, Yakov G. 1998. On two parameters of transitivity. In Leonid Kulikov & Heinz Vater (eds.), *Typology of verbal categories. Papers presented to Vladimir Nedjalkov on the occasion of his 70th birthday*, 29–45. Tübingen: Max Niemeyer.

Tsunoda, Tasaku. 1985. Remarks on transitivity. *Journal of Linguistics* 21(2). 385–396.

von Heusinger, Klaus. 2002. Specificity and definiteness in sentence and discourse structure. *Journal of Semantics* 19. 245–274.

von Heusinger, Klaus & Georg A. Kaiser. 2003. The interaction of animacy, definiteness and specificity in Spanish. In Klaus von Heusinger & Georg A. Kaiser (eds.), *Proceedings of the Workshop "Semantic and Syntactic Aspects of Specificity in Romance Languages"*, 41–65. Universität Konstanz: Fachbereich Sprachwissenschaft (Arbeitspapier 113).

von Heusinger, Klaus & Georg A. Kaiser. 2007. Differential object marking and the lexical semantics of verbs in Spanish. In Georg A. Kaiser & Manuel Leonetti (eds.), *Proceedings of the Workshop "Definiteness, Specificity and Animacy in Ibero-Romance Languages"*, 83–109. Universität Konstanz: Fachbereich Sprachwissenschaft.

von Heusinger, Klaus & Georg A. Kaiser. 2011. Affectedness and differential object marking in Spanish. *Morphology* 21. 593–617.

Vycichl, Werner. 1983. *Dictionnaire étymologique de la langue copte*. Leuven: Peeters.

Winand, Jean. 2015. The oblique expression of the object in Ancient Egyptian. In Eitan Grossman, Martin Haspelmath & Tonio Sebastian Richter (eds.), *Egyptian-Coptic linguistics in typological perspective*, 535–560. Berlin: De Gruyter Mouton.

Chapter 7

A diachronic perspective on differential object marking in pre-modern Japanese: Old Japanese and Early Middle Japanese

Bjarke Frellesvig
University of Oxford

Stephen Horn
University of Oxford

Yuko Yanagida
University of Tsukuba

An exhaustive search of Old Japanese object NPs associated with weak floating quantifiers and question-focussed object NPs containing interrogative words confirms the suggestion made in Yanagida & Whitman (2009), confirmed by Frellesvig et al. (2015), that Old Japanese had differential object marking (DOM) with specificity (defined by Frellesvig et al. 2015 as D-linking) as a necessary condition. Testing the same hypothesis on Early Middle Japanese, however, shows that this condition no longer obtained by the Heian Period. The resources for the expression of specificity and the set of conditions for differential object marking clearly changed over this span of the history of the Japanese language.

1 Introduction

Throughout its attested history Japanese has exhibited variable object marking: Some object NPs are marked by the accusative case particle *wo*,[1] others are not. We give two

[1]The accusative case particle *wo* has been in use through the history of the language. Its phonemic shape changed to /o/ around the year 1000 AD due to regular sound change; we will refer to the Japanese accusative particle as *'wo'* throughout the paper, except when citing examples, which have *'wo'* or *'o'* depending on the age of the source. Like accusatives in many other languages, the Japanese accusative has functions in addition to marking direct objects, mainly: marking adjuncts (path and source) and marking subjects raised to object and subjects in a few absolute constructions.

Bjarke Frellesvig, Stephen Horn & Yuko Yanagida. A diachronic perspective on differential object marking in pre-modern Japanese: Old Japanese and Early Middle Japanese. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *Diachrony of differential argument marking*, 183–207. Berlin: Language Science Press. DOI:10.5281/zenodo.1228255

simple examples from Old Japanese in (1)–(2).[2,3]

(1) [$_{NP}$ *kwomatu* *ga* *sita* *no* *kaya* *wo*] *kara-sane*
small.pine GEN under GEN grass ACC cut-RESP.OPT
'(I) want (you) to cut some of the grass under the small pine.' (MYS 1.11)

(2) *akami-yama* [$_{NP}$ *kusane* *Ø*] *kari-soke*
Akami-mountain grass cut-remove
'cutting and removing grasses at Mount Akami…' (MYS 14.3479)

Phenomena suggesting the existence of differential object marking (DOM) in Old Japanese (OJ) have long been noted, and hypotheses about the trigger for DOM in OJ have been developed and refined in recent decades (Motohashi 1989; Yanagida 2006; Yanagida & Whitman 2009) to the point where a robust formulation of a condition on DOM in OJ has now been proposed and tested in a survey of OJ object noun phrases of a few selected types Frellesvig et al. (2015).

In the present study we present an expanded and exhaustive survey of OJ along the same lines as in Frellesvig et al. (2015), and then proceed to extend these same techniques to a body of texts representative of the immediately following historical variant of Japanese, Early Middle Japanese (EMJ), in order to ascertain whether the DOM system of the Japanese of the Asuka and Nara periods (as represented by texts from 712 CE to 797 CE) persists into the Heian period (as represented by texts from 900 CE to 1110 CE).

First we define the necessary condition for triggering DOM in OJ, viz. specificity defined as D-linking (see §2 below). Next we describe how we used the Oxford Corpus of Old Japanese Frellesvig et al. (2014) to determine that reference to this condition contributes to an observationally adequate description of DOM in OJ. Next we present the methods and results of a similar survey of EMJ using the Historical Corpus of Japanese National Institute for Japanese Language and Linguistics (NINJAL) (2014), which show clear and significant differences in object marking between Old Japanese and the immediately following period of Early Middle Japanese. In the discussion in §4, we summarize and discuss these findings and identify areas for further research.

2 The conditions for DOM in OJ

In the data set used for the study on DOM in OJ (described in more detail below) there are in total 4094 direct object noun phrases (NPs). Of these object NPs, 1946 (47.5%) are

[2]Like modern Japanese, Old Japanese is head-final, has postposed particles, verbal suffixes in derivational and inflectional morphology, and pervasive pro-drop (whence many of the examples we cite have no overt subject). Old Japanese has an extensive inventory of inflecting verbal suffixes, which are not found in modern Japanese, expressing aspect, tense and mood. Old Japanese does not have a nominative case particle; subjects are sometimes bare and sometimes marked by one of the two genitive case particles *no* and *ga*. In modern Japanese *ga* has become a nominative case particle, whereas *no* remains a genitive in modern Japanese. See further Frellesvig (2010) about premodern Japanese.

[3]Examples are transcribed in a time-appropriate phonemic transcription (see Frellesvig 2010: 33, 176 for simple transcription guidelines).

marked with the accusative case particle *wo*. It is evident that there is variation in object marking (cf. also (1), (2) above), and the initial question is whether that is dependent on some factor or combination of factors. Following Frellesvig et al. (2015), we find that the alternation found in Old Japanese is related to a non-inherent discourse-based argument property. In this respect the distribution of OJ accusative case marker *wo* is similar in many respects to that of the Turkish accusative case suffix *-i* for direct objects (Enç 1991). Also note that object marking alternation in OJ is found in wh-NPs under question focus (e.g. *idure wo ka wakite sinwopamu* 'Which (of them) shall I praise, separating it out?'), which means that *wo*-marking does not imply topichood. Rather, we find that a necessary condition for DOM in OJ is a weak form of *specificity* which we define in terms of D-linking, the working definition of which we set out as follows:

(3) *D-linking:* A relationship between an NP and a definite discourse referent, whereby the possible reference of that NP is restricted.

Pesetsky (1987) used the term D(iscourse)-linking to characterize *wh*-NPs such as 'which student' as having a special property due to their membership in a definite superset, this being, moreover, a property with consequences for syntax. Generally, *X* in *which X* is linked with a definite discourse entity insofar as 'which' is uninterpretable without a presupposed superset, thus such D-linked *wh*-NPs are weakly 'specific' (Cinque 1990; É. Kiss 1993). As an example with an overt superset rather than a merely presupposed one, consider the expression *Among the students in this year's cohort, which is the best?*

Extending this idea, it is clear that this weak specificity can accrue to *wh*-NPs other than those containing 'which': For example, the contextual material accompanying the *wh*-NP 'whom' in the expression *Among the students in this year's cohort, whom should we trust?* is sufficient to render that *wh*-NP D-linked. The phrase 'what else' in the expression *What else do you want?* is D-linked to a definite discourse entity by the relation of exclusion, as that narrows the possible reference of the NP 'what else'.[4]

Further extending the idea, we see that the same kind of weak specificity can be a significant property of indefinite NPs that do not contain *wh*-words at all, established through the same kinds of D-linking relations, a typical example being that of a definite possessive NP complement, as in *the farm's products*, but potentially established in a variety of ways (e.g. *a man on the bus*, *a limb off the tree, another glass of beer*, etc.). We also stipulate that D-linking is not an irreflexive relation. Thus a definite NP is D-linked through the relation of identity it has with itself. By this we also include co-indexing through previous mention and pronominal reference as a way to establish D-linking. Thus we account for the distribution of accusative case marking on both definite objects and indefinite specific ones by reference to one principle.

Needless to say, there are also many ways for the definite discourse referents upon which these various relations depend to find their way into the common ground: pre-

[4]It follows that DOM conditioned by D-linking can trigger an interpretation of weak specificity in a *wh*-NP that would otherwise be construed as non-specific (as Dalrymple & Nikolaeva 2011: 210–211 observe for Persian). While all of the examples of *wo*-marked *wh*-NPs in our OJ data are accompanied by contextual material for D-linking (see §2.2), this is valuable new information for the interpretation of *wo*-marked objects in general in Old Japanese texts.

vious mention, ostension, presupposition accommodation, uniqueness, etc. In OJ, the effect of weak specificity can be seen in the near-minimal pair (1) and (2) given above. The object NP in (1) is modified by an NP complement containing the NP *kwomatu* 'small pine' and is marked by accusative case particle *wo*. Because *kwomatu* ('the small pine') is definite, as the context in the poem shows, the reference of the object NP *kaya wo* 'grass' is at least weakly specific due to the D-linking relation which maps the whole object NP to the definite discourse entity denoted by the NP complement. Accordingly, we translate the object NP here as a having at least a partitive relation: *some of the grass under the small pine,* but the NP also could potentially refer to *all the grass under the small pine.* The marking of the object NP conforms to the fact that it has at least weak specificity, which property satisfies a necessary condition for object marking. By contrast, the object NP in (2) *kusane* 'grass' is unmodified and unmarked, consistent with non-specific reference, which we translate here with an English plural common noun 'grasses'. When we look at the wider context of the expression in (2) we see that a non-specific amount of grasses are cut in order to open a space for lying down. The presence and absence of object case marking seen respectively in (1) and (2) corresponds to the presence and absence of specificity in the reference of the NPs.

This analysis is supported by Yanagida's (2006) observation that a great preponderance of unmarked object noun phrases in OJ are composed of unmodified common nouns, while *wo*-marked object NPs are frequently modified by NP complements as in (1) or by relative clauses. Overt modification, while restricting the possible reference of the NP so modified, does not by itself ensure a D-linking relationship, but reference to a definite discourse entity within the modifying material is one way to establish D-linking, which in turn licenses object marking. Needless to say, stronger types of specificity, including epistemic specificity and definiteness, also license object marking in OJ.

Furthermore, as observed by many (Matsuo 1944; Matsunaga 1983: 48; Miyagawa 1989; Yanagida 2006), object-marking in OJ is associated with leftward movement, so that, for example, in this SOV language, *wo*-marked object NPs co-occurring with genitive-marked subject NPs appear to the left of those subject NPs (e.g. example (16) below), with extremely few exceptions. Yanagida & Whitman (2009) identify this as a movement to a position outside of the domain of existential closure in the verb phrase. This is a phenomenon common to specific object NPs, as described by Diesing (1992), *inter alia*. In contrast, bare, unmodified, common noun-headed object NPs in OJ commonly appear adjacent to the verb (Yanagida 2006; Yanagida & Whitman 2009). These distributions conform very well with what we observe here.[5]

We also note that object NPs composed of personal pronouns (Wrona & Frellesvig 2010, *inter alia*) and NPs modified by demonstratives are also fairly regularly object marked. However, we also find clearly specific object NPs that are unmarked. For example, we found 47 object NPs containing demonstrative *ko* 'this' at some structural level. All of these NPs are specific, and indeed many of them are definite, but while 25 are accusative case marked as predicted, e.g. (4), 22 of them are bare, e.g. (5).

[5]Note, however, that there are rare examples of unmodified *wo*-marked NPs that appear adjacent to the selecting verb (possibly cases of vacuous movement). Conversely leftward movement does not imply specificity, as *wh*-items in question focus are regularly left-shifted, and many of these are non-specific.

(4) ***ko no miki wo*** *kami-kyemu pito pa*
this GEN wine ACC chew-must.have person TOP
'as for the person who must have brewed **this wine**' (KK 40)

(5) *Yamato no womura no take ni sisi pusu to tare ka*
Yamato GEN Womura GEN peak DAT game lie COMP who FOC
ko no koto *opomapye ni mawosu?*
this GEN content Emperor DAT say
'That deer lie on the peaks in Womura in Yamato —who is it that says **this thing** to His Majesty?' (NSK 75a, b)

The pattern for object marking in OJ outlined above may be summarized as follows:

(6) a Accusative case marked objects are specific;
b non-specific objects are not accusative case marked;
c not all specific objects are accusative case marked.

This leads us to form the following hypothesis:

(7) *Condition on DOM in OJ:* Specificity is a necessary condition for object marking in OJ, the weakest form of specificity being D-linking. However, specificity is not a sufficient condition for object marking in OJ.

In this paper we focus on this condition and its falsifiability, but do not to any significant extent discuss the – important – issue of when specific objects in OJ are not accusative case marked. See, however, §4 for some remarks on this.

The hypothesis that some kind of specificity is a necessary but not sufficient condition for DOM is falsifiable by finding an unambiguously non-specific NP which is also accusatively marked. Unfortunately, there is no linguistic pattern in OJ that can be said to be an unambiguous and categorical marker of non-specificity, making it difficult to search for counterevidence to our hypothesis on the basis of linguistic forms in an electronic corpus. But there are at least two classes of object NPs which, other things being equal, have reference that is normally non-specific: (i) object NPs associated with weak Floating Quantifiers (FQs) of the form [numeral + classifier],[6] and (ii) object NPs containing *wh*-words (except for *idure* 'which', discussed in more detail below) and having question focus.[7] As it is, variable object marking is attested among both of these classes of NPs, suggesting that under marked conditions both types of NP can have specific reference. In order to establish a systematic and exhaustive method which can also be

[6]For example, in the Modern Japanese (NJ) expression *Dooro de sika o rop-piki mita* 'On the road I saw six deer', a non-specific object NP *sika* 'deer' is associated with the FQ *rop-piki* 'six-animal'. For this first class of object NPs, in special cases the reference can be specific, and indeed even definite, but the function of the FQ ceases to be weakly quantifying in such cases (discussed in more detail below) (Kim 1995, *inter alia*).

[7]For example, in the NJ expression *Mado kara dare o mimasita ka* 'From the window, whom did you see?' the object NP *dare o* 'whom' is under question focus. For this second class of object NPs, the reference is at most only weakly specific, and that only under special conditions (discussed in more detail below).

applied to following stages of the language, with much larger volumes of material available, we therefore examined all attestations of these two classes of object NPs using the *Oxford Corpus of Old Japanese* (OCOJ, Frellesvig et al. 2014), with the aim of demonstrating whether a D-linking relation would be retrievable for the *wo*-marked object NPs. If not, such examples could constitute counterevidence to the hypothesis about DOM.

The data set we used for the OJ survey was extracted from the September 2014 version of the OCOJ (Frellesvig et al. 2014), which primarily uses sources from the *Nihon koten bungaku taikei* (Iwanami shoten, 1957–1962) as critical editions. We used a sub-corpus comprising all extant poetic texts from 712 CE to 797 CE, drawing material from the following sources: *Kojiki kayō, Nihon shoki kayō, Fudoki kayō, Bussokuseki-ka, Shoku nihongi kayō, Manyōshū*. It is thought that some of the poetic texts in these works are considerably older than the earliest date of compilation. The volume of the corpus is 4,979 poems, comprising 89,419 words.

We looked at the two types of NPs which would under normal, unmarked conditions be non-specific. As predicted, the exhaustive examination of these object NPs showed that:

(8) a There is a correspondence between accusative case marking and specific interpretations for these two types of NPs (corroborated by the presence of contextual clues); and
b NPs of these two types receiving unambiguously non-specific interpretations (again corroborated by contextual clues) are bare.

Details for both types of NP are presented together with examples in the sections that follow. In the remarks that follow we only discuss the reference of marked object NPs, as only these serve as potential counterevidence to the hypothesis for a condition on DOM in OJ (7).

2.1 Specificity of object NPs associated with weak floating quantifiers in OJ

Out of the attested 100 expressions with the form of weak FQs in the data set, we found 4 attestations of FQs both indexed with *wo*-marked object NPs and functioning as adverbial modifiers of the predicate selecting their respective host NPs (see examples (9)–(11)). In all cases the reference of the host NP was in fact definite. When an FQ that, other things being equal, would be interpreted as weakly quantifying (e.g. a cardinal FQ) is paired with a definite host NP, the resulting expression is construable in two ways; either as meaning '*n*-members of a definite superset,' (i.e. '*n* of them', where the FQ behaves as what we might call a partitive quantifier), or as a cardinally specified universal quantifier (e.g. 'both', i.e. 'all of them, with a cardinality of 2'). The interpretations presented in the examples below are derived accordingly. We present all four examples in the following.

The definiteness of the host NP in example (9) derives from the fact that the relative clause modifying the head noun *kamwi* 'god' serves to define a definite superset: 'those

gods known as Chinese Tigers'.[8] The FQ *ya-tu* 'eight-thing' functions as a partitive quantifier 'eight members of the superset'.

(9) ***karakuni*** ***no*** ***twora*** ***to*** ***ipu*** ***kamwi*** ***wo*** *ikedorini*
China GEN tiger COMP say god ACC live.take.as
ya-tu *tori-moti-ki*
eight-thing take-hold-come
'…taking and bringing by capturing live **eight of those gods called Chinese Tigers**…' (MYS 16.3885)

In (10) the definiteness of the host NP *sinokipa* 'arrow' derives from a combination of metaphor and previous mention, explained in detail in Frellesvig et al. (2015). The FQ functions as a cardinally specified universal quantifier 'both'.

(10) *…adusa-yumi* *yu-bara* *puri-okosi* ***sinokipa*** ***wo*** ***puta-tu***
catalpa-bow bow-belly swing-raise arrow ACC two-thing
ta-basami *panati-kyemu* *pito* *si* *kuti-wosi*
hand-pinch loose-must.have person RES mouth-regrettable
'Deplorable, the person who (…) must have raised a bow, pinched **both those arrows**, and shot them away!' (MYS 13.3302)

The definiteness of the two host NPs in example (11) *u* 'cormorant' is inferred from the method of fishing referred to in this poem, which involves using exactly eight cormorants carried four to a basket, two baskets to a pole (see Frellesvig et al. 2015: 202). Thus, the two FQs function as cardinally specified universal quantifiers 'all eight'.

(11) *kami* *tu* *se* *ni* ***u*** ***wo*** ***ya-tu*** *kaduke* *simo*
upper GEN stream DAT cormorant ACC eight-thing make.dive lower
tu *se* *ni* ***u*** ***wo*** ***ya-tu*** *kaduke*
GEN stream DAT cormorant ACC eight-thing make.dive
'…making **all eight of [my] cormorants** dive in the upper reaches, making **all eight of [my] cormorants** dive in the lower reaches…' (MYS 13.3330)

Again, the reference for every *wo*-marked host NP of FQ is definite. Given our definition of D-linking in (3) and the stipulation that definite NPs are D-linked by reflexive identity, we determine that all *wo*-marked object NPs associated with FQs in OJ are at least weakly specific in reference. Accordingly, for this class of NPs, no counter-evidence to the hypothesis is found.

[8] It is well-known that NPs of the form *X to iu Y* 'Y which is called X' regularly form definite descriptions.

2.2 Specificity of object NPs containing *WH*-words with question focus

The set of *wh*-words in OJ is as follows:

(12) *WH-words in OJ: ta, tare* 'who'; *idu* 'where'; *iduku* 'where'; *idura* 'where (abouts)'; *idupye* 'which direction'; *idure* 'which'; *idusi* 'which side'; *iduti* 'which direction'; *ika* 'how'; *iku* 'how many'; *ikubaku* 'how much'; *ikuda* 'how much'; *ikupisa(sa)* 'how long ago'; *ikura* 'how much'; *ikutu* 'how much'; *itu* 'when'; *nado, ado* 'why'; *na, nani* 'what'; *ani* 'how'; *uremuso* 'why'

The OCOJ has 469 occurrences of *wh*-words. Out of these, we identified 70 that are contained in object NPs, of which 21 are *wo*-marked. Of these *wo*-marked NPs containing *wh*-words, there are 18 which have question focus (i.e. are themselves *wh*-NP objects). As for the remaining 3 object NPs, they do not have question focus, either due to the focus being discharged within a complement clause embedded in a relative clause, or due to the *wh*-word functioning as a quantifier, or both. For example, in (13) below, the *wh*-word (*itu* 'when') is contained in an adverb NP (*itu si ka mo*) of a complement clause (*itu … mimu to*) embedded in a relative clause (*itu … omopisi*) modifying the head (*apasima*) of an object NP. The force of the *wh*-word is discharged at the level of the complement clause. The whole utterance forms a yes/no question.

(13) [$_{NP}$ ***itu*** ***si*** ***ka*** ***mo*** ***mi-mu*** ***to*** ***omopi-si*** ***apa-sima*** ***wo***]
when RES FOC ETOP see-will COMP think-SPST Awa-island ACC
yoso *ni* *ya* *kwopwi-mu*
afar DAT FOC yearn-will
'Shall [I] have to yearn from afar for **Awa Island**, **about which [I] thought**, **"When will [I] see it?"**?' (MYS 15.3631)

Non-question focus object NPs such as these are excluded from consideration, because they can easily have definite reference, as does in fact the example in (13).

Out of the *wh*-words in OJ, listed above, only the following appear in the formation of *wo*-marked object *wh*-NPs: *ika* 'how'; *ta, tare* 'who'; *nani* 'what'; *idure* 'which'. Under normal, unmarked conditions, NPs containing such *wh*-words (with the exception of *idure* 'which') would be non-specific. However, significantly, in these 18 examples, the NPs containing them are *wo*-marked and in fact weakly specific in reference. For example, in (14) immediately below, the reference of the *wh*-NP headed by *yosi* 'opportunity' is associated with a definite event that occurred by chance, the D-linking established through the relationship of exclusion: 'what manner of opportunity other than by chance'. In all 18 examples (14)–(31), the *wo*-marked object *wh*-NP is accompanied by contextual material by which that NP is construable as related to a definite discourse entity. While we cannot include here all the considerations by which the judgments on reference status were made due to lack of space, we reflect as much as possible in the translations.

2.2.1 *ika* 'how'

(14) *tamasakani wa ga mi-si pito wo* ***ika*** ***nara-mu***
by.chance I GEN see-SPST person ACC how COP-will
yosi ***wo*** *motite ka mata pito-me mi-mu*
opportunity ACC holding FOC again one-glimpse see-will
'The person whom I met by chance –having **what other manner of opportunity is it that [I] will see a glimpse of her again?'** (MYS 11.2396)

2.2.2 *ta/tare* 'who'

(15) *yamato no takasazinwo wo nana yuku wotomye-domo* ***tare*** ***wo***
Yamato GEN Takasazino ACC seven go girl-PL who ACC
si *maka-mu*
RES wrap-will
'As for the seven maidens walking along the plain Takasazi in Yamato – **whom (of them)** will [you] wed?' (KK 15)

(16) *nagatukwi no sigure no ame no yama-gwiri no asibuseki*
9th.month GEN shower GEN rain GEN mountain-mist as fretful
a ga mune ***ta*** ***wo*** *miba yama-mu*
I GEN breast who ACC see.if stop-will
'As for my breast which is fretting like the mountain mist of the rain showers of the 9th month, if [I] see **whom (other than you)** shall it quieten?' (MYS 10.2263a)

(17) *maywone kaki* ***tare*** ***wo*** ***ka*** *mi-mu to omopitutu*
eyebrow scratch who ACC FOC see-will COMP think.while
ke-nagaku kwopwi-si imo ni ap-yeru kamo
days-long yearn-SPST beloved DAT meet-STAT SFP
'Scratching [my] eyebrow, thinking, "**Whom (other than you)** am [I] about to see?" here [I] am meeting my beloved (i.e. you) whom [I] have longed for day in and day out!' (MYS 11.2614b)

(18) *kapyeru beku toki pa nari-kyeri miyakwo nite* ***ta*** ***ga***
return ought time TOP become-MPST Capital COP who GEN
tamoto ***wo*** ***ka*** *wa ga makuraka-mu*
sleeve ACC FOC I GEN lie.upon-will
'The time has come for [us] to return. In the capital, **the sleeve of whom (other than my departed wife)** shall I use as my pillow?' (MYS 3.439)

(19) *asigara no ya-pye-yama kwoyete imasi-naba* ***tare*** ***wo***
Ashigara GEN eight-fold-mountain Crossing come-PFV.if who ACC
ka *kimi to mitutu sinwopa-mu*
FOC lord COMP seeing praise-will
'If [you] cross the eight-fold mountains of Ashigara, then **whom (else)** shall [I], thinking [it] to be my lord, admire?' (MYS 20.4440)

2.2.3 *nani* 'what'

(20) *kasuga.nwo no pudi pa tiri-nite* ***nani wo ka mo***
Kasuga.field GEN wisteria TOP scatter-PFV.GER what ACC FOC ETOP
mi-kari no pito no worite kazasa-mu
PFX-hunt GEN person GEN breaking.off don-will
'The wisteria flowers on Kasuga fields having scattered, **what else** shall the hunters break off and wear on their heads?' (MYS 10.1974)

(21) *kokoro sape matur-eru kimi ni* ***nani wo ka mo*** *ipa-zu*
heart even offer.up-STAT lord DAT what ACC FOC ETOP say-NEG
ipi-si to wa ga nusumapa-mu
say-SPST COMP I GEN steal-will
'To you whom [I] have given the very meaning (my very heart), **what (else)** would I steal from you by saying, "[It] is a thing which was said without speaking"?' (MYS 11.2573)

(22) *moti no pi ni sasi-iduru tukwi no takatakani kimi*
mid.month GEN day DAT direct-come.out moon as refinedly lord
wo imasete ***nani wo ka*** *omopa-mu*
ACC making.come what ACC FOC think-will
'Having you come resplendently like the moon that comes out on the 15th of the month, **what (else)** could [I] wish for?' (MYS 12.3005)

(23) *yama-gapi ni sak-yeru sakura wo tada*
mountain-saddle DAT bloom-STAT cherry.blossom ACC just
pito-me kimi ni mise-teba ***nani wo ka*** *omopa-mu*
one-glimpse lord DAT show-PFV.if what ACC FOC think-will
'If [I] managed to show my lord just once the cherry blossoms that bloom in the saddle of the mountain, **what (else)** could [I] wish for?' (MYS 17.3967)

(24) *ipye ni yukite* ***nani wo*** *katara-mu asipikwino*
home DAT going what ACC recount-will (pillow.word)
yama-pototogisu pito-kowe mo nakye
mountain-cuckoo one-chirp ETOP cry.IMP
'Mountain cuckoo, sing even one note! Going home, **what (other than that)** shall [I] recount?' (MYS 19.4203)

(25) *ima-sarani* ***nani wo ka*** *omopa-mu uti-nabiki kokoro pa kimi*
now-newly what ACC FOC think-will PFX-lie.down heart TOP lord
ni yori-ni-si monowo
DAT depend-PFV-SPST given.that
'At this late date, **what more** could [one] ask for, given that [my] heart, lying down, has given itself over to you?' (MYS 4.505)

(26) *ame-tuti* *wo* *terasu* *pi-tukwi* *no* *kipami* *naku* *aru*
heaven-earth ACC illuminate sun-moon as limit lacking be
beki *monowo* ***nani*** ***wo*** ***ka*** *omopa-mu*
ought given.that what ACC FOC think-will
'Given that [it] must have no limit, just as the sun and moon which illuminate heaven and earth, **what else** could [one] wish for?' (MYS 20.4486)

(27) *sipo* *pwi-naba* *tama-mo* *kari-tume* *ipye* *no* *imo* *ga*
tide ebb-PFV.if jewel-weed cut-gather.IMP home GEN beloved GEN
pama-dutwo *kopaba* ***nani*** ***wo*** *simyesa-mu*
beach-souvenir beg.if what ACC proffer-will
'When the tide goes out, cut and gather some jewel-seaweed. If my darling at home asks for a beach souvenir, **what (other than that)** would [we] proffer?' (MYS 3.360)

2.2.4 *idure* 'which'

The *wh*-word *idure* 'which' is inherently specific, and NPs headed by *idure* (e.g. in (29) below) or with *idure* as a direct NP complement to the head (e.g. in (28), (30), (31) below) are specific. There are 4 examples of an object *wh*-NP formed with *idure* as a head or as a direct NP complement, and as expected all are *wo*-marked.

(28) *asipikwino* *tama-kadura* *no* *kwo* *kyepu* *no* *goto* ***idure*** ***no***
(pillow.word) jewel-vine GEN child today GEN like which GEN
kuma ***wo*** *mitutu* *ki-ni-kyemu*
bend ACC seeing come-PFV-must.have
'Oh child of the jewel-vine, seeing **which bends in the mountain road** must [you] have come here, as [I come] today?' (MYS 16.3790)

(29) ***idure*** ***wo*** ***ka*** *wakite* *sinwopa-mu*
which ACC FOC separating praise-will
'…**Which** shall [I] praise, separating [it] out? …' (MYS 18.4089)

(30) ***watatumi*** ***no*** ***idure*** ***no*** ***kamwi*** ***wo*** *inoraba* *ka* *yuku*
sea.god GEN which GEN god ACC supplicate.if FOC go
sa *mo* *ku* *sa* *mo* *pune* *no* *paya-kye-mu*
way ETOP come way ETOP boat GEN fast-be-will
'**Which god of the sea** is it that, if [I] beseech it, the boat will be fast both on the way out and the way back?' (MYS 9.1784)

(31) ***ame-tusi*** ***no*** ***idure*** ***no*** ***kami*** ***wo*** *inoraba* *ka* *utukusi*
heaven-earth GEN which GEN god ACC beseech.if FOC dear
papa *ni* *mata* *koto-twopa-mu*
mother DAT again word-ask-will
'**Which of the gods of heaven and earth** is it that, if [I] beseech it, [I] will speak again to my dear mother?' (MYS 20.4392)

Thus, for object NPs containing *wh*-words and having question focus, which under normal, unmarked conditions would be expected to have non-specific reference, all *wo*-marked examples are demonstrably D-linked and thereby specific, so that no counter-evidence to the hypothesis about the condition on DOM in OJ (7) is found.

3 Does the DOM system of OJ persist into EMJ?

In this section we will address the question of whether Early Middle Japanese (EMJ, 900 CE to 1110 CE) exhibits the same system of DOM as OJ, concluding that it does not. We will show that in EMJ both specific and nonspecific objects may be *wo*-marked or bare, unlike OJ which disallows non-specific *wo*-marked objects. We will first show three examples (all taken from *Makura no Sōshi*) which show that EMJ, like OJ, had *wo*-marked specific objects (32), bare specific objects (33), and bare non-specific objects (34). Following that we will present the results of an investigation of whether EMJ had non-specific *wo*-marked objects.

In (32) the object denotes particular body parts of previously mentioned people, and as such the reference is D-linked and specific. The object NP is *wo*-marked.

(32) **Specific, *wo*-marked object NP**
uta-rezi *to* *youi* *site* *tuneni* ***usiro*** ***o***
hit-PASS.will.not COMP preparation doing constantly behind ACC
kokoro-dukawi *si-taru* *kesiki*
heart-dispatch do-STAT sight
'the sight of [them] constantly guarding **[their] behinds** taking care lest [they] be struck' (Makura no sōshi, 3, Shinpen Zenshū, vol. 18, p. 28)

In (33) previous mention of *augi* 'fan' and *putokorogami* 'pocket paper' is seen in the immediately preceding context, establishing D-linking through the relation of previous mention, and yet both object NPs are bare.

(33) **Specific, bare object NP**
augi ***tatau-gami*** ***nado*** *yobe* *makura-gami* *ni*
fan folding-paper etc. last.night pillow-head DAT
oki-sikado *onodukara* *pika-re* *tiri-ni-keru* *o* *motomuru*
put-SPST.although naturally pull-PASS scatter-PFV-MPST ACC search
ni *kurakereba* *ikade* *ka* *wa* *mi-mu* *idura* *idura*
DAT dark.because how FOC TOP see-will where where

tataki-watasi	*mi-idete*	***augi***	*putaputato*	*tukawi*	***putokoro-gami***
pat-cross	see-putting.out	fan	(mimetic)	use	pocket-paper

sasi-irete	*makari-na-mu*	*to*	*bakari*	*koso*	*iu*	*rame*
stick-put.in	go.home-PFV-will	COMP	RES	FOC	say	EXT

'Although [he] had put **[his] fan and folded paper and such** at the head of his pillow the night before, when [he] searches [for them] among the things that naturally became disturbed and scattered, it being dark, how shall [he] ever find them?— saying, "Where? Where?" patting the whole area, and finding them, [he] uses **[his] fan**, "woosh-woosh," and sticking **[his] pocket-paper** in, what [he] would surely say is something like, "[I'll] be going now".' (Makura no sōshi, 61, Shinpen Zenshū, vol. 18, p. 117)

The example in (34) is the first entry in a list entitled "Despicable things". There is no previous context other than the title of the list, and given the public nature of the list and the negative evaluations levied on the items therein, anything more than a non-specific reference would be unthinkable. The object NP is bare.

(34) **Non-specific, bare object NP**

nadeu	*koto*	*naki*	*pito*	*no*	*we-gati*	*nite*	***mono***
any.in.particular	thing	lacking	person	GEN	laugh-tending	COP	thing

itau	*iwi-taru*
extremely	say-STAT

'A person who has nothing to commend himself, smugly saying **things** volubly.' (Makura no sōshi, 26, Shinpen Zenshū, vol. 18, p. 65)

As mentioned, (32)–(34) conform to the observed OJ distribution of specificity and case marking. In order to examine whether the DOM system of OJ is also found in EMJ we investigated systematically the existence of *wo*-marked non-specific objects, which were disallowed in OJ. We used the methodology outlined above and examined object NPs associated with weak FQs and object *wh*-NPs with question focus, using the Heian Japanese sub-corpus of the Historical Corpus of Japanese (NINJAL 2014) in conjunction with the Chūnagon search application available from the National Institute of Japanese Language and Linguistics. The Heian Japanese sub-corpus of the Historical Corpus of Japanese represents prose and poetry in texts produced between 900 CE to 1110 CE, using texts from the *Shinpen Nihon koten bungaku zenshū* (Shogakkan, 1994) as critical editions. The Heian sub-corpus is composed of the following texts: *Kokin wakashū, Tosa nikki, Taketori monogatari, Ise monogatari, Ochikubo monogatari, Yamato monogatari, Makura no sōshi, Genji monogatari, Murasaki Shikibu monogatari, Izumi Shikibu monogatari, Sarashina nikki, Sanuki no suke nikki, Heichū monogatari, Kagerofu nikki, Tutumi Chūnagon monogatari.* The texts are primarily prose, with some poetry. The sub-corpus contains 738,153 words.

Exhaustively examining NPs in EMJ fitting the same description as that for OJ outlined above, we found that the Condition on DOM in OJ in (7) does not hold for EMJ. The evidence for this conclusion comes in the form of *wh*-marked non-specific object NPs.

In a situation where there are no overt forms that can be used to unambiguously mark NPs as having non-specific reference, a demonstration of this evidence relies on close examination of the previous context, and various considerations about the most plausible interpretations of NPs that appear in the text.

3.1 Specificity of object NPs associated with weak floating quantifiers in EMJ

A search of the sub-corpus for object NPs associated with weak FQs in EMJ yielded results from texts produced between 900 CE (*Taketori monogatari*) and 1010 CE (*Genji monogatari*). We found 512 expressions of the form [numeral+classifier] in Heian texts. Among these we found 80 examples associated with object NPs. Of these 80 object NPs, 8 are accusative case marked, and if the OJ system of DOM were to persist in EMJ, we would expect all 8 *wo*-marked object NP hosts of FQs to be specific in reference. However, of the 8 *wo*-marked objects, 3 are arguably non-specific. We give all three examples below. For example, in (35) below, a simile is drawn to a hypothetical situation in which two plums are stuck in the place where eyes should be. There is no mention of these plums in previous context, and they have no links to definite discourse referents.

(35) *karouzite* *oki-agari-tamap-eru* *wo* *mireba* *kaze* *ito* *omoki*
barely sit.up-rise-RESP-STAT ACC see.when illness very heavy
pito *nite* *para* *ito* *pukure* *konata* *kanata* *no* *me* *ni*
person COP belly very swell this.side that.side GEN eye DAT
pa ***sumomo*** ***wo*** ***puta-tu*** *tukeru* *yau* *nari*
TOP plum ACC two-thing attach appearance COP
'… looking at [him] as [he] barely managed to raise himself, [he] was like someone with a terrible cold, [his] belly swelled up and it was as if [someone] had stuck **two plums** to [his] eyes on the one side and the other.' (Taketori monogatari, Shinpen Zenshū, vol. 12, p. 48)

In (36) below, there is no previous mention of bridges in relation to the place called Yatsuhashi. They are newly introduced and are unlinked to any definite discourse referent.

(36) *Mikapa* *no* *kuni* *yatupasi* *to* *ipu* *tokoro* *ni* *itari-nu*
Mikawa GEN country Yatsuhashi COMP say place DAT arrive-PFV
soko *wo* *yatupasi* *to* *ipi-keru* *pa* *midu* *yuku* *kapa*
this.place ACC Yatsuhashi COMP say-MPST TOP water go river
no *kumo-de* *nareba* ***pasi*** ***wo*** ***ya-tu*** *watas-eru* *ni*
GEN spider-hand COP.because bridge ACC eight-thing cross-STAT DAT
yorite *namu* *yatupasi* *to* *ipi-keru.*
depending FOC Yatsuhashi COMP say-MPST
'[They] came to a place called Yatsuhasi. As for its being called Yatsuhashi, it was due to the fact that [they] spanned **eight bridges** over it, because the river of

water divided into spider legs, that [they] called it "Yatuhashi".' (Ise monogatari, Shinpen Zenshū, vol. 12, p. 120)

In (37) below, the main character is depicted as doing something unexpected and marvelous: releasing fireflies into a woman's bedchamber. Both the fireflies and the cloth panel he used to conceal them are newly introduced into the scene and have no links to a definite discourse referent.

(37) *yori-tamawite* ***mikityau*** ***no*** ***katabira*** ***wo*** ***pito-pe***
depend-RESP.GER standing.blind GEN panel ACC one-layer
uti-kake-tamau *ni* *awasete* *sa.to* *pikaru* *mono* *ga*
PFX-hang-RESP DAT matching suddenly glow thing GEN
'…and just as [Otodo], drawing near, draped **a panel from a standing blind** (over the crossbeam), suddenly something glowing …' (Genji monogatari: 'Hotaru', Shinpen Zenshū, vol. 22, p. 200)

Non-specific expressions of this form are unattested in OJ and violate the condition on DOM (7), indicating that the OJ system of DOM is no longer operative in EMJ.

3.2 Specificity of object NPs containing WH-words in EMJ

Given the fact that the EMJ sub-corpus does not include mark-up of constituents larger than the unit 'word', and has made no provision for the annotation of grammatical role, it is impossible to mechanically identify object NPs in general, including those associated with FQs (as above) and those containing *wh*-words (as below). Rather, attestations of the distinguishing part of speech have to be examined individually to determine their syntactic position and to determine the grammatical roles of the constituents which they distinguish. Given the difficulties of working with the EMJ sub-corpus, for this study we restricted our search to just variants of two *wh*-words for comparison with OJ: *ta, tare* 'who' and *na, nani* 'what'. It will be recalled that the *wh*-words in OJ which figure in the formation of *wo*-marked object *wh*-NPs are the following: *ika* 'how'; *ta, tare* 'who'; *na, nani* 'what'; *idure* 'which'.

3.2.1 WH-word *tare* 'who'

A search of the sub-corpus for object NPs containing *wh*-word *ta, tare* 'who' yielded results from texts produced between 900 CE (*Taketori monogatari*) and 1110 CE (*Sanuki no suke nikki*). We found 553 NPs containing the *wh*-word *tare, ta* 'who'. Of those, 21 are grammatical objects. Of the 21 grammatical objects, 18 are accusative marked. Again, if the OJ system of DOM were to persist in EMJ, we would expect all 18 accusative marked examples to be specific. However, of these 18, 7 have question focus, and thus would have a non-specific interpretation under normal, unmarked circumstances. Upon inspection, we find no evidence to indicate that the reference for these is indeed anything but non-specific. For example, in the question in (38), there is a background assumption that no

one is supposed to know the things that the addressee speaks about as a matter of course. Accordingly it is extremely unlikely that there is assumed in the question a definite set of people from whom the addressee might learn such things.

(38) ***tare*** ***ga*** ***osiwe*** ***o*** *kikite* *pito* *no* *nabete* *siru*
who GEN teaching ACC hearing people GEN lining.up know
beu *mo* *ara-nu* *koto* *o-ba* *iu* *zo*
should ETOP exist-NEG word ACC-TOP say FOC
'Having heard **whose teachings** is it that [you] say these things which people invariably aren't supposed to know?' (Makura no sōshi, 131, Shinpen Zenshū, vol. 18, p. 248)

In (39) below, the combination of question particle *ka* and topic particle *wa* form a rhetorical question: there is no expectation of a concrete answer, so the reference of *tare* is arguably non-specific.

(39) *ima* *wa* *katazikenaku* *mo* ***tare*** ***o*** ***ka*** ***wa*** *yoru-be* *ni*
now TOP regrettably ETOP who ACC FOC TOP depend-place COP
omowi-kikoe-tamawa-n
think-RESP-RESP-will
'From here on — and [I] am terribly sorry to be saying this, but — **whom(ever)** might [you] consider as a benefactor?' (Genji monogatari, 'Yūgiri', Shinpen Zenshū, vol. 23, p. 451)

In (40)–(42), the questions focus on previously unintroduced third-person entities. There is no obvious source of any basis for D-linking.

(40) *aki.kaze* *ni* *patu.kari* *ga* *ne* *zo* *kikoyu* *naru* ***tare***
autumn.wind DAT first.goose GEN cry FOC be.audible EXT who
ga ***tamaadusa*** ***wo*** *kakete* *ki-tu* *ramu*
GEN missive ACC hanging come-PFV EXT
'The voices of the first geese can be heard on the autumn wind. **Whose missives** do [they] come bearing?' (Kokin wakashū, Shinpen Zenshū, vol. 11, p. 101)

(41) *momidiba* *no* *tirite* *tumor-eru* *wa* *ga* *yado* *ni* ***tare*** ***wo***
red.leaves GEN scatter pile.up-STAT I GEN dwelling DAT who ACC
matu.musi *kokora* *naku* *ramu*
await.insect around.here cry EXT
'In my dwelling on which autumn leaves, falling, have piled up — **whom** must the matsumushi be awaiting? — the matsumushi cries around here' (Kokin wakashū, Shinpen Zenshū, vol. 11, p. 100)

(42) *puna.ko-domo* *no* *araarasiki* *kowe* *nite* *uraganasiku* *mo* *tooku*
boat.man-PL GEN rough voice COP mournfully ETOP from.afar
kana *to* *ki-ni-keru* *utau* *o* *kiku* *mama* *ni* *puta-ri*
SFP COMP come-PFV-MPST singing ACC listen thus COP two-people

sasi-mukawite *naki-keri* *puna.bito* *mo* ***tare*** ***o*** *kou* *to*
direct-face cry-MPST boat.man ETOP who ACC yearn.for COMP
ka *oo-sima* *no* *ura* *kanasi-geni* *kowe* *no* *kikoyuru*
FOC Ō-island GEN bay sad-appearing voice GEN be.audible

'Even as [they] heard the boatmen in their rough voices singing, "Heartlorn, [we]'ve come so far!" the two faced each other and cried. So **whom** do the boatmen long for? Voices from Ō Island Bay sound so heartsick.' (Genji monogatari, 'Tamakazura', Shinpen Zenshū, vol. 22, p. 90)

Finally in (43)–(44), there is no mention in the previous context of a definite superset of suitors out of which one specific suitor might be picked. It may be argued that the social context might delimit a definite set of candidates, so the claim of non-specificity for these two examples is not as strong as that for the previous five.

(43) *medetaki* *ya* ***tare*** ***wo*** ***ka*** *tori-tamau* *to* *notamaweba*
fortunate SFP who ACC FOC take-RESP COMP say.when
sa.daisyau.dono *no* *sakon.no.seusyau* *to* *ka*
Left.Major.Captain GEN Minor.Captain COMP FOC

'As [he] said, "That's fortunate. **Whom** is [she] receiving (as a groom)?" [she] replied, "(I am given to understand) that it is the son of the Major Captain of the Left, the Minor Captain," …' (Ochikubo monogatari, Shinpen Zenshū, vol. 17, p. 89)

(44) *omuko* *no* *seusyau* ***tare*** ***wo*** *tori-tamau* *zo* *to*
groom GEN Minor.Captain who ACC take-RESP FOC COMP
towi-kereba *sa.daisyau* *no* *sakon.no.seusyau.dono* *to*
say-MPST.when Left.Major.Captain GEN Left.Minor.Captain COMP

'As the husband, Minor Captain Kurauto, asked, "**Whom** will [she] take (as a groom)?" [she] replied, "(Mother says) [it] is the son of the Major Captain of the Left, the Minor Captain of the Left,"…' (Ochikubo monogatari, Shinpen Zenshū, vol. 17, p. 147)

Again, non-specific expressions of this form are unattested in OJ and violate the condition on the OJ system of DOM, providing further evidence that the OJ system of DOM is no longer operative in EMJ.

3.2.2 WH-word *nani* 'what'

A search of the sub-corpus for object NPs containing *wh*-word *na, nani* 'what' yielded results from texts produced between 900 CE (*Taketori monogatari*) and 1110 CE (*Sanuki no suke nikki*). We found 825 NPs containing the *wh*-word *na, nani* 'what'. Of those, 113 are grammatical objects. Of the 113 grammatical objects, 39 are accusative marked. Of the 39 *wo*-marked grammatical objects, 13 have question focus and are arguably non-specific in reference. For example, in (45) below the speaker is expressing dismay at not being summoned in time for a funeral. The underlying assumption in the question is that there

could only have been some unknown sort of prohibition preventing the addressee from sending an invitation. There is no mention of prohibitions in the previous context, nor does the speaker actually wait for an answer to the question, suggesting the absence of any presupposed superset related to *nani no monoimi o* 'what manner of prohibition?'. Similarly, in the remaining examples, open-ended questions are asked: 'what in heaven's name?'; 'whatever?'

(45) *ana kokoro u ya rei-sama ni mi-pirake-tamai-tu ran*
Ah heart despondent SFP usual-way COP see-open-RESP-PFV EXT
o ima pito-tabi mi-maira-se-zu nari-nuru kokoro usa
ACC yet one-time see-HUM-CAUS-NEG become-PFV heart despondency
o ***nani no monoimi o*** *site yobi-tamawa-zari-turu zo*
ACC what COP prohibition ACC doing call-RESP-NEG-PFV FOC
' … "Oh, how sad! In the face of the sadness of the fact that [we] will never again be able to see his honourable face with his eyes open, observing **what prohibitions** was it that [you] didn't call [me]?" …' (Sanuki no suke nikki, Shinpen Zenshū, vol. 26, p. 420–421)

(46) *moto no sina toki yo no oboe uti-awi yamu-goto naki*
original GEN class time age GEN lesson PFX-meet stop-fact lacking
atari no uti-uti no motenasi kewawi okure-tara-mu wa
spot GEN inside-inside GEN demeanour bearing be.late-STAT-will TOP
sarani mo iwa-zu ***nani o*** *site iki-owi-ide-kyemu*
newly ETOP say-NEG what ACC doing live-grow-come.out-must.have
to iu kawi naku oboyu besi
COMP say point lacking be.thought.of ought
' … "There is nothing more to be said about those who, while coming from a venerable home where the original class and the repute of the world at large are in accord, nonetheless are lacking in the demeanor and bearing appropriate thereto. Doing **what** must it have been that [they] were raised, (I wonder)? [They] should be thought of as not worth mention." …' (Genji monogatari, 'Hahakigi', Shinpen Zenshū, vol. 20, p. 60)

(47) ***nani wo*** *site mi no itadura ni oi-nu ramu tosi*
what ACC doing body GEN in.vain COP grow.old-PFV EXT year
no omopa-mu koto zo yasasiki
GEN think-will content FOC embarrassing
'Doing **what** must it be that [my] body has grown old in vain? How shameful [to me], what the years must be thinking!' (Kokin wakashū, Shinpen Zenshū, vol. 11, p. 404)

(48) *tati-wi no kewawi tawe-gata-geni okonau ito*
stand-sit GEN bearing withstand-hard-appearing undertake very

aware ni asa no kiri ni koto nara-nu yo o
pitiful COP morning GEN mist DAT otherwise be-NEG world ACC
nani o *musaboru mi no inori ni ka to kiki-tamau*
what ACC gobble.up body GEN prayer COP FOC COMP listen-RESP

'Standing up and sitting down in a manner that appeared unbearable, (the old man) carried out the rites in a way that was so truly pitiful, [he] listened (to the old man), thinking, "Given that this world is no different than morning mist, these are the prayers of an earthly body hoarding up **what**, (I wonder)?" …'
(Genji monogatari, 'Yūgao', Shinpen Zenshū, vol. 20, p. 158)

(49) *kono miko ni mawosi-tamapi-si pourai no tama no eda*
this aristocrat DAT say-RESP-SPST Hōrai GEN jewel GEN branch
wo pito-tu no tokoro ayamata-zu motite opasimas-eri ***nani***
ACC one-thing GEN place differ-NEG having come-STAT what
wo *motite to.kaku mawosu beki*
ACC having that.this say ought

'[He] has brought the branch with the jewels of Hōrai that [you] spoke to this lord about, with not a point of difference [in it]. Having **what** (as grounds) am [I] supposed to tell [him] this and that (as excuses)?' (Taketori monogatari, Shinpen Zenshū, vol. 12, p. 29)

(50) *saru koto ni wa* ***nani no irawe o ka*** *se-mu nakanaka*
such thing DAT TOP what GEN reply ACC FOC do-will awkward
nara-mu
be-will

'With respect to such a thing, **what reply** am [I] to make? [It] will be awkward.'
(Makura no sōshi, 131, Shinpen Zenshū, vol. 18, p. 248)

(51) *kakerite mo* ***nani wo ka*** *tama no kite mo mi-mu*
flying ETOP what ACC FOC soul GEN coming ETOP see-will
kara pa ponopo to nari-ni-si monowo
shell TOP ember as become-PFV-SPST given.that

'Even flying, **what** would [my] soul, coming here, see? Given that [her] remains are already turned to embers.' (Kokin wakashū, Shinpen Zenshū, vol. 11, p. 418)

(52) *ausaka no seki pa yoru koso mori-masare kurureba*
Ōsaka GEN checkpoint TOP night FOC guard-excel grow.dark.when
nani wo *ware tanomu ramu*
what ACC I rely EXT

'It is at night that [they] guard the Osaka checkpoint more strongly. When the day ends, **what** shall I rely on?' (Heichū monogatari, Shinpen Zenshū, vol. 12, p. 459)

(53) *miya.no.omawe* *ni* *uti.no.otodo* *no* *maturi-tamaw-eri-keru*
empress DAT Minister.of.the.Centre GEN give-RESP-STAT-MPST
o *kore* *ni* ***nani*** ***o*** *kaka-masi* *uwe.no.omawe* *ni* *wa*
ACC this DAT what ACC write-SBJV emperor DAT TOP
siki *to* *iu* *pumi* *o* *namu* *kaka-se-tamaw-eru*
chronicle COMP say text ACC FOC write-CAUS-RESP-STAT
'On the occasion of the Minister of the Centre giving [them] to the Empress, (she said), "**What** shall [I] write on these? On the Emperor's part, [he] is writing texts called 'Chronicles'." …' (Makura no sōshi, 327, Shinpen Zenshū, vol. 18, p. 467)

(54) *ka* *bakari* *kokoro.zasi* *oroka* *nara-nu* *pito.bito* *ni*
this.way RES resolve negligent be-NEG person.person COP
koso *a* *mere* *kaguya.pime* *no* *ipaku* ***nani*** ***bakari*** ***no***
FOC exist EXT Shining.Princess GEN saying what RES GEN
pukaki ***wo*** ***ka*** *mi-mu* *to* *ipa-mu* *isasaka* *no* *koto* *nari*
depth ACC FOC see-will COMP say-will trifling GEN thing be
'… "It seems that [they] are people not lacking feeling to this degree." The Shining Princess's reply: "[I] shall tell [you]: **What degree of depth** do [I] want to see? [It] is a mere trifling."…' (Taketori monogatari, Shinpen Zenshū, vol. 12, p. 23)

(55) *aware-gari* *medurasi-garite* *kaweru* *ni* ***nani*** ***o*** ***ka***
impression-exhibit rareness-exhibiting return DAT what ACC FOC
tatematura-mu *mamemamesiki* *mono* *wa* *masa* *nakari* *namu*
give-will practical thing TOP appropriateness lacking SFP
'… making many signs of delight and interest (in me), when it was time [for me] to go home (she said), "**What** shall [I] give to you? Something practical just won't do." …' (Sarashina nikki, Shinpen Zenshū, vol. 26, p. 298)

(56) *ware* *wa* *to* *omowi.agareru* *tiuzyau.no.kimi* *zo* *kanete* *zo*
I TOP COMP presuming Chūjō FOC from.before FOC
miyuru *nado* *koso* *kagami* *no* *kage* *ni* *mo*
be.visible and.the.like FOC mirror.cake GEN image DAT ETOP
katarawi-paberi-ture *watakusi* *no* *inori* *wa* ***nani*** ***bakari*** ***no***
talk-HUM-PFV private COP prayer TOP what RES GEN
koto ***o*** ***ka*** *nado* *kikoyu*
word ACC FOC and.the.like say
'(The one to speak was) Chūjō, who presumed (to herself that if anyone has something to wish for, then) surely myself! "[I] was saying to [your] image in the mirror-cake, '(your thousand-year image) appeared from earlier,' and so on. As for prayers for myself, **how much of a boon** (could I possibly ask)?" [she] continued in this vein.' (Genji monogatari, 'Hatsune', Shinpen Zenshū, vol. 22, p. 144)

(57) *yoki* *kakemono* *wa* *ari-nu* *bekeredo* *karugarusiku* *wa*
good wager TOP exist-PFV ought.however lightly TOP
e-watasu *maziki* *o* ***nani*** ***o*** ***ka*** ***pa*** *nado*
can-hand.over impossible given.that what ACC FOC TOP and.the.like
notamawa-suru *mi-kesiki* *ikaga* *miyu* *ranee*
say-RESP PFX-visage how be.visible EXT
'…However must the sight [of him] saying such things as "Though there ought to be a good wager, [I] can't be handing anything over too lightly, so **what** (shall I wager)?" have appeared (to others)?' (Genji monogatari, 'Yadorigi', Shinpen Zenshū, vol. 24, p. 378)

Our evidence for the non-specificity of these items is perforce negative in nature: there is no positive way to rule out the possibility of a D-linking relationship for any of the *wh*-NP objects in the examples above, and the strength of the grounds for our judgments of reference status varies for some of the examples we present here.[9] However, most of our judgments carry a high degree of confidence. Given that non-specific expressions of this form are unattested in OJ and violate the condition on DOM (7), the evidence shows that the OJ system of DOM is no longer operative in EMJ.

4 Discussion and conclusion

Like all other attested stages of Japanese, both OJ and EMJ have variable object marking. However, the results reported in this paper show clearly that EMJ does not share the OJ system of DOM in which a correlation between accusative case marking of objects and specificity is observed. As described through §2, we examined NPs in OJ which under normal (unmarked) conditions were predicted to be non-specific in reference, namely object NP hosts of FQs and *wh*-object NPs with Q-focus. The distribution of object NP hosts of FQs in OJ (Table 1) gives a good reflection of the more general situation with regard to specificity and *wo*-marking:

Table 1: Object NP hosts of FQs in OJ.

	wo-marked	zero-marked
specific	10	1
non-specific	0	4

In general, OJ *wo*-marked objects are specific (e.g. (1)), unspecific objects are bare (e.g. (2)), and some specific objects are bare (e.g. (5)), but there are no *wo*-marked objects which are non-specific. This distribution is summarized in Table 4 further below.

[9] For example, there are conceivably exclusion relationships available to the object *wh*-NPs in (51)–(52).

In EMJ, by contrast, the distribution of object NP hosts of FQs (see §3.1) is as summarized in Table 2.[10] This reflects the general situation in EMJ, where both specific and nonspecific objects may be *wo*-marked or bare, as shown in §3, where we demonstrated that EMJ has ample attestation of non-specific *wo*-marked object NPs.

Table 2: Object NP hosts of FQs in EMJ.

	wo-marked	zero-marked
specific	5	72
non-specific	3	

In general, the values for specificity and those for *wo*- or zero-marking on objects are seen to cross-classify in EMJ. This distribution is summarized in Table 5 below. That pattern is not found in OJ and is in direct contrast to the system seen in OJ, which disallows *wo*-marked non-specific objects.

Thus, this paper identifies a major grammatical difference between OJ and EMJ shown by the absence of non-specific *wo*-marked objects in OJ, but their presence in EMJ. We observe a change from the OJ system with morphological expression (accusative marking on direct objects) of specificity in some contexts, to the EMJ system with no morphological expression (through case marking) of specificity, that is, to a system where specificity is determined exclusively by context or NP modification or by the semantics of the head noun (e.g. proper noun, relational noun, etc.). This is an important descriptive finding.

This does not mean, of course, that EMJ does not have some form of rule governed DOM, but it does show that the OJ system of DOM, which takes part in expressing specificity, is not found in EMJ. For EMJ, the variability in case marking must be investigated throughout the large amount of available data in order to identify a system which governs the observable variable case marking of objects.

Now, in this paper we have not addressed the – important – issue of specific object NPs in OJ which are not *wo*-marked (3), and which therefore show that there is no simple one-to-one correlation between specificity and *wo*-marking on objects in OJ. In Frellesvig et al. (2015) we discuss this briefly and outline some of the hypotheses which have been or may be proposed for absence of accusative case marking on some specific objects, including conditions which may be formulated in terms of clause types (e.g. main (disfavoring *wo*-marking), embedded, relative, nominalized (favoring *wo*-marking)), or other factors which may play a role, such as phonological form, or lexical idiosyncrasy (of both verbs and nouns). While a number of tendencies and individual factors may be identified, it remains clear that no strong condition or set of conditions for the absence of accusative case marking on some specific objects in OJ has been established yet.

[10]Note that Table 2 does not break down the bare objects into specific and non-specific. As the point of interest for the comparison with OJ was the reference of *wo*-marked objects, we did not classify and quantify the reference of the bare objects. But as we already demonstrated by examples (33) and (34), the category of bare objects in EMJ contains both specific and non-specific NPs.

Much work remains to be done on this for OJ, empirically involving careful scrutiny of the more than 2,000 bare objects in the OJ corpus. An important part of the interpretation of the data will be to consider whether the distribution observed in OJ, summarized in Table 4, represents a stable system with (combinations of) conditions for absence of accusative case marking on specific objects, which so far has proven too complex to be described; or whether in fact the distributional facts of OJ in Table 4 reflect a system in transition, from a stable, simple pre-OJ DOM system with straightforward rules for expression of the specificity of direct objects, such as that hypothesized in Table 3, to the system of variable object marking we see in EMJ, summarized in Table 5, which takes no part in the expression of specificity.

Table 3: Possible system of case marking and specificity of objects in pre-OJ.

	wo-marked	zero-marked
specific	+	–
non-specific	–	+

Table 4: Accusative case marking and specificity of objects in OJ.

	wo-marked	zero-marked
specific	+	+
non-specific	–	+

Table 5: Accusative case marking and specificity of objects in EMJ.

	wo-marked	zero-marked
specific	+	+
non-specific	+	+

This would mean that OJ represents a stage in the actualization of the change from a system like that in Table 3 (pre-OJ) to that in Table 5 (EMJ) and that in itself would provide a ready explanation for the fact that we observe variability in case marking of specific objects in OJ. Much further research will be needed to determine whether that is the case, and if so, what governed the progression of the actualization of this change. A clearer understanding of the factors bearing on variable object marking in post-OJ stages of Japanese would be of enormous help, but this too needs much further research. Determination and interpretation of markedness values in a wide range

of contexts will undoubtedly play an important role in investigating these questions (cf. Andersen 2001a,b).

Abbreviations

ACC	accusative	OPT	optative
COM	comitative	PASS	passive
COMP	complementizer	PFV	perfective
COP	copula	PFX	prefix
DAT	dative	PL	plural
ETOP	emphatic topic	RES	restrictive particle
EXT	extension	RESP	respect
FOC	focus particle	SBJV	subjunctive
GEN	genitive	SFP	sentence final particle
GER	gerund	SPST	simple past
HUM	humble	STAT	stative
IMP	imperative	SUBJ	subject
MPST	modal past	TOP	topic
NEG	negative		

The following abbreviations indicate sources:
KK *Kojiki Kayō*; MYS *Man'yōshū*; NSK *Nihon Shoki*.

References

Andersen, Henning. 2001a. Actualization and the (uni)directionality of change. In Henning Andersen (ed.), *Actualization: Linguistic change in progress*, 225–249. Amsterdam: John Benjamins.

Andersen, Henning. 2001b. Markedness and the theory of change. In Henning Andersen (ed.), *Actualization: Linguistic change in progress*, 21–59. Amsterdam: John Benjamins.

Cinque, Guglielmo. 1990. *Types of A′-dependencies*. Cambridge, MA: MIT Press.

Dalrymple, Mary & Irina Nikolaeva. 2011. *Objects and information structure*. Cambridge: Cambridge University Press.

Diesing, Molly. 1992. *Indefinites*. Cambridge, MA: MIT Press.

É. Kiss, Katalin. 1993. WH-movement and specificity. *Natural Language and Linguistic Theory* 11(1). 85–120.

Enç, Mürvet. 1991. The semantics of specificity. *Linguistic Inquiry* 22(1). 1–25.

Frellesvig, Bjarke. 2010. *A history of the Japanese language*. Cambridge: Cambridge University Press.

Frellesvig, Bjarke, Stephen W. Horn & Yuko Yanagida. 2015. Differential object marking in Old Japanese: A corpus based study. In Dag T. T. Haug (ed.), *Historical linguistics 2013: Selected papers from the 21st International Conference on Historical Linguistics, Oslo, 5–9 August 2013*, 195–212. Amsterdam: John Benjamins.

Frellesvig, Bjarke, Stephen Wright Horn, Kerri L. Russell & Peter Sells. 2014. *The Oxford corpus of Old Japanese*. http://vsarpj.orinst.ox.ac.uk/corpus/ojcorpus.html (24 July, 2017). http://vsarpj.orinst.ox.ac.uk/corpus/ojcorpus.html, accessed 2017-07-24.

Kim, Alan Hyun-Oak. 1995. Is quantifier-floating in Japanese a recent innovation? – Contextual analysis of the numeral quantifier construction in Old Japanese. In John Charles Smith & Delia Bentley (eds.), *Historical Linguistics 1995: Selected Papers from the 12th International Conference on Historical Linguistics, Manchester, August 1995*, vol. 1: General issues and non-Germanic Languages, 169–190. Amsterdam: John Benjamins.

Matsunaga, Setsuko. 1983. *The development of case marking in Japanese*. Columbus: Ohio State University dissertation.

Matsuo, Osamu. 1944. Kyakugo hyōji no joshi 'o' ni tuite. In Hashimoto Hakase Kanreki Kinenkai (ed.), *Kokugogaku ronshū*, 617–644. Tokyo: Iwanami.

Miyagawa, Shigeru. 1989. *Structure and case marking in Japanese*. San Diego: Academic Press.

Motohashi, Tatsushi. 1989. *Case theory and the history of the Japanese language*. Tucson: University of Arizona dissertation.

National Institute for Japanese Language and Linguistics (NINJAL). 2014. *Historical Corpus of Japanese: Heian period*. http://www.ninjal.ac.jp/corpus_center/chj/ (24 July, 2017). http://www.ninjal.ac.jp/corpus_center/chj/, accessed 2017-07-24.

Pesetsky, David. 1987. Wh-in-situ: Movement and unselective binding. In Eric Reuland & Alice G. B. ter Meulen (eds.), *The representation of (in)definiteness*, 98–129. Cambridge, MA: MIT Press.

Wrona, Janick & Bjarke Frellesvig. 2010. The Old Japanese case system: The function of *wo*. *Japanese/Korean Linguistics* 17. 565–580.

Yanagida, Yuko. 2006. Word order and clause structure in Early Old Japanese. *Journal of East Asian Linguistics* 15(1). 37–68.

Yanagida, Yuko & John Whitman. 2009. Word order and alignment in Old Japanese. *Journal of East Asian Linguistics* 18(2). 101–144.

Chapter 8

Nominal and verbal parameters in the diachrony of differential object marking in Spanish

Marco García García
University of Cologne

This paper deals with the influence that nominal and verbal parameters have on DOM in the diachrony of Spanish. Comparing selected corpus studies, I will focus first on the different nominal parameters that build up the animacy and referentiality scales, in particular on animacy and definiteness. In order to clarify how far DOM has diachronically evolved, special attention will be paid to inanimate objects, which can be viewed as the alleged endpoint in the development of DOM in Spanish. Secondly, I will provide a systematic overview of the relevant verbal parameters, which include aspect, affectedness and agentivity. The study will show a complex interaction of nominal and verbal parameters, revealing some unexpected correlations: Obligatory object marking is not only found with human and strongly affected objects involved in a telic event, but also with inanimate, non-affected and agentive objects embedded in a stative event. In other words, in Spanish DOM patterns with both extremely high and extremely low transitivity. These findings sharply contrast with traditional accounts concerning the development as well as the explanation of DOM.

1 Introduction

Differential object marking (DOM) is a well-attested phenomenon within Romance languages (for an overview see Bossong 1998: 218–230). While in some Romance languages, such as Catalan or Modern Portuguese, DOM is confined to a reduced number of contexts, in others, such as Sardinian or Spanish, it is found in many more contexts. This paper will focus on Spanish, where DOM seems to have reached a greater stage of development than in any other Romance language.

As in most of the other Romance languages, DOM in Spanish is signaled by *a*, which goes back to the Latin preposition *ad* 'to'. From its beginnings as a preposition with an exclusively locative-directional meaning, this preposition was firstly grammaticalized into a marker for indirect objects, i.e. datives. However, even in early Hispano-Romance,

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the *a*-marker was already regularly used not only with indirect objects, but also with certain direct objects, in particular with those showing typical dative properties such as strong personal pronouns referring to humans (cf. Pensado 1995: 184–185 and Company Company 2002b: 205). Since then, DOM is reported to have evolved gradually along both the definiteness and the animacy scales (cf. e.g. Aissen 2003: 470–471). DOM in Spanish is said to depend not only on nominal parameters such as animacy and definiteness, but also on certain verbal parameters such as telicity and affectedness (cf. Torrego Salcedo 1999: 1784–1791 among others). Despite the vast literature, which mainly focuses on nominal parameters, there are still several core questions that remain open. To begin with, it is not clear which of the verbal parameters are the most important for the (diachronic) distribution of DOM in Spanish. Moreover, it is not obvious how verbal parameters such as telicity interact with nominal parameters such as animacy. Lastly, there are quite different views about how far DOM in Spanish has evolved.

The main purpose of this paper is to give an overview of the current state of research dealing with these questions. Firstly, I will critically review and compare several corpus studies in order to clarify how far DOM in Spanish has actually developed. To this end, I will concentrate on nominal parameters such as animacy and definiteness. Particular attention will be paid to inanimate objects. These can be seen as the alleged endpoint in the evolution of DOM in Spanish. According to Company Company (2002a: 147), at least Mexican Spanish is strongly heading towards a complete generalization of object marking not only for animates, but also for inanimate objects. This raises the question of whether Spanish is typologically shifting from a language with DOM to a language without DOM, i.e. to a grammatical system with a sort of a regular accusative case marking. Secondly, I will provide a systematic overview of the less well-studied verbal parameters associated with DOM, which include aspect (telicity and perfectivity), affectedness and agentivity. As far as agentivity is concerned, I will build on my previous analyses for Modern Spanish (García García 2014) and extend them to a diachronic perspective providing a test corpus study for the reversible verbs *seguir* 'to follow' and *preceder* 'to precede' (cf. §4.3.2).

The paper is organized as follows: §2 introduces the main conditions determining DOM in Modern Spanish as well as its description by means of the animacy scale and the definiteness scale. §3 explores the diachrony of DOM in Spanish along these scales on the basis of Laca (2006) and a number of other corpus studies. §4 focuses on the aforementioned verbal parameters (aspect, affectedness, agentivity) and elaborates on their complex interaction with nominal parameters. §5 summarizes and discusses the main findings.

2 Prominence scales and diachronic DOM

DOM in Spanish is reported to depend first of all on what Laca (2002; 2006) calls *local factors*, i.e. animacy, definiteness and referentiality. Besides this, the distribution of *a*-marking also seems to be influenced by what Laca (2006: 429–432; 454–462) labels *global factors*, i.e. different kinds of contextual conditions, such as topicality and certain

verbal parameters.[1] However, these are usually seen as additional, i.e. less important conditions, at least from a synchronic perspective. As for Standard Modern Spanish, it is generally assumed that DOM is confined to human or at least animate (non-human) referents (cf. e.g. Torrego Salcedo 1999: 1782). For definite human objects, *a*-marking is more or less obligatory (cf. (1a)), while for indefinite human objects there is more variation. Generally, *a*-marking is required for indefinite human objects that are specific (cf. (1b)). Note, though, that *a*-marked direct objects need not be specific. This is shown in (1c), where the subjunctive mood of the verb in the relative clause signals that the direct object, i.e. *una actriz* 'an actress', is non-specific, regardless of whether it is marked by *a* or not (cf. Leonetti 2004: 82–86 for discussion).

(1) a. *Pepe ve* ****ø/a*** *la actriz.*
Pepe see[3SG] ø/to the actress
'Pepe sees the actress.'

b. *Pepe busc-a* ****ø/a*** *una actriz que* ***habl-a*** *arameo.*
Pepe look_for-3SG ø/to an actress who speak-3SG Aramaic
'Pepe is looking for an actress who speaks Aramaic.'

c. *Pepe busc-a* ***ø/a*** *una actriz que* ***habl-e*** *arameo.*
Pepe look_for-3SG ø/to an actress who speak-3SG.SBJV Aramaic
'Pepe is looking for an actress who speaks Aramaic.' (non-specific reading)

As for animate non-human objects, *a*-marking is optional, even if the object is definite as in (2). With inanimate (definite) objects, *a*-marking is generally ungrammatical (cf. (3)).

(2) *Pepe ve* ***ø/a*** *la vaca.*
Pepe see[3SG] ø/to the cow
'Pepe sees the cow.'

(3) *Pepe ve* ***ø/*a*** *la película.*
Pepe see[3SG] ø/to the film
'Pepe sees the film.'

Fitting these overall generalizations, DOM in Spanish is usually described by means of the animacy scale (4), the definiteness scale (5) or a combination of these prominence scales (cf. Aissen 2003: 417–418, Laca 2006: 436).

[1]Note that Laca (2006) does not use the terms local and global in the typological sense of Silverstein (1976), also followed by Witzlack-Makarevich & Seržant (2018 [this volume]). Thus, her notions are not associated with the distinction between languages where differential object marking is local in the sense that it only depends on the semantic properties of the object (e.g. animacy), and languages where the marking is rather global, i.e. where it also depends on the properties of another co-argument such as the animacy of the subject. The question of whether DOM in Spanish is local or rather global in the sense of Silverstein (1976) is not explicitly addressed in this paper. See, however, §4.3 focussing on the relative agentivity of the subject with respect to the object, as well as García García (2014: 40–43, 76–81), which deals with the relative animacy of subject and object.

(4) Animacy scale:
human > animate > inanimate

(5) Definiteness scale:
personal pronoun (pron.) > proper name (PN) > definite NP (def. NP) > indefinite specific NP (spec. NP) > non-specific NP (non-spec. NP)

As is well known, these scales provide a rough means to capture not only language-specific generalizations, but also cross-linguistic tendencies about DOM and related phenomena (for a critical discussion see Bickel et al. 2015; Haspelmath 2014; Sinnemäki 2014, and Witzlack-Makarevich & Seržant 2018 [this volume]). Typically, the scales are conceived of as implicational hierarchies. Among other things, they make the implicational prediction that if object marking is required for definite NPs in a given language, it will also be used for all higher ranging categories of the definiteness scale, i.e. proper names and personal pronouns. Conversely, it is implicated that if object marking is ungrammatical for definite NPs, it is also ruled out for all the lower ranging categories, i.e. indefinite specific and indefinite non-specific NPs.

Languages with DOM differ in at least two respects. Firstly, object marking may be sensitive to either one of the mentioned scales or to both of them (cf. Bossong 1998: 202 among many others, for a different view see Sinnemäki 2014). For example, in Hebrew or Turkish, DOM seems to depend only on the definiteness scale whereas in Spanish or Romanian DOM hinges on both the definiteness and the animacy scale. Secondly, languages contrast with respect to the transition point, i.e. the right-most category within the relevant scale(s) that requires obligatory object marking. In Hebrew, for instance, object marking is obligatory for all definite NPs but not for indefinite NPs. As an implication, object marking is also compulsory for all the higher ranging categories in the definiteness scale, namely proper names and personal pronouns. DOM in Turkish shows a very similar distribution. In contrast to Hebrew, however, Turkish also requires DOM for indefinite specific NPs (cf. Aissen 2003: 453–454 and references cited therein).

Since in Spanish DOM depends on both the animacy and the definiteness scale, the interaction of these scales has to be taken into account. A very elegant way to represent this interaction has been proposed by von Heusinger & Kaiser (2005: 40), who use a cross-classification (cf. Table 1). This representation provides a clear though still simplified picture of the conditions under which the *a*-marking of the direct object in Modern Standard Spanish is obligatory (+), optional (±) and ungrammatical (–).

The animacy and definiteness scales are taken to be relevant not only for the synchronic distribution of DOM, but also for its diachronic development. The diachronic expansion is claimed to proceed from the more prominent categories on the left/top of the scales to the less prominent ones to the right/bottom of these scales. The opposite holds true for the retraction of DOM in that it is supposed to affect the less prominent categories before the more prominent ones. This less well attested case seems to be evidenced by the diachronic development of DOM in Catalan (cf. Dalrymple & Nikolaeva 2011: 212) and Portuguese (cf. Delille 1970).

Table 1: DOM in Standard Spanish (cf. von Heusinger & Kaiser 2005: 40)

Definiteness →	pron. >	PN >	def. NP >	spec. NP >	non-spec. NP
Animacy ↓					
human	+	+	+	+	±
animate	+	+	±	±	–
inanimate	Ø	±	–	–	–

Thus, at an initial stage, object marking may be restricted to human pronouns. At a further stage, it may become regular also for the less prominent categories of one or both scales, i.e. animate pronouns, human proper names, animate definite NPs and so forth. As is sometimes suggested in the literature, this may ultimately lead to a full grammaticalization of the differential object marker into a regular accusative case marker (cf. Aissen 2003: 255). In this respect, Villar (1983: 191–196) has argued that Proto-Indo-European had a differential object marker which, in the historic Indo-European languages, developed into an obligatory object case marker (for discussion see Bossong 1984). As has already been noted in the introduction and will be discussed with more detail in the next section, a similar development has also been claimed regarding Spanish.

3 Nominal parameters and diachronic DOM in Spanish

3.1 Diachronic corpus studies

The historic development of DOM in Spanish has been analyzed in a number of studies focusing on the impact of different factors such as animacy and definiteness (cf. e.g. Company Company 2002b, Laca 2002; Aissen 2003), topicality (cf. Melis 1995) or affectedness, i.e. the influence of certain verb classes (cf. von Heusinger 2008; von Heusinger & Kaiser 2011). Recently, not only monotransitive but also ditransitive constructions have been systematically taken into account (cf. Ortiz Ciscomani 2005; 2011, von Heusinger 2018 [this volume]). While most of the empirical studies are confined to human and animate objects, some of them deal exclusively with inanimate objects (cf. Company Company 2002a, Barraza Carbajal 2003; 2008). The most detailed empirical investigation is provided by Laca (2006), whose corpus findings will serve as a reference point in the following sections. Laca's corpus analysis comprises data from the 12th to the 19th century. The data are taken from nine texts, i.e. between one and three text samples per century.[2] It

[2]The corpus is composed of samples from the following texts: *Poema de mio Cid* (12th cent.); *El Conde Lucanor* (14th cent.); *La Celestina* (15th cent.); *Lazarillo de Tormes*, *Documentos lingüísticos de la Nueva España* (16th century); *Don Quijote* (17th cent.); *La comedia nueva*, *El sí de las niñas*, *Documentos lingüísticos de la Nueva España* (18th cent.); *El Periquillo sarniento*, *Pepita Jiménez* (19th cent.).

goes without saying that, given this rather restricted empirical basis, one has to act with caution when interpreting the data. Whenever possible, her data will be complemented and compared with the findings from other empirical studies. In order to give a critical overview of what is known about the diachronic expansion of DOM in Spanish, I will first concentrate on the impact of nominal parameters, i.e. animacy and definiteness. To this end, I will focus on human objects (§3.2), animate (non-human) objects (§3.3) and inanimate objects (§3.4). In a further step, I will discuss the role of verbal parameters, i.e. aspect, affectedness and agentivity (§4.1–§4.4).

3.2 Human objects

Following Laca (2006: 436–438), I will use the animacy scale in (4) as well as the somewhat simplified definiteness scale given in (6).[3]

(6) personal pronoun > proper name > definite NP > indefinite NP > bare noun

The latter scale differs slightly from the hierarchy given in (5). Most importantly, it does not include the category of specificity but that of bare nouns. Whereas indefinite NPs may be specific or non-specific, bare nouns are always non-specific. As a consequence, (6) will not allow for systematic observations concerning correlations between specificity and DOM.

On the basis of Laca's (2006) corpus results and the simplified definiteness scale in (6), Table 2 and Figure 1 show the diachrony for DOM with human objects. It is to be noted that neither in the figure nor in the table have personal pronouns been considered since with these categories object marking was already obligatory in Old Spanish.

Table 2: Diachrony of DOM with human objects (adapted from Laca 2006: 442–443).

	XII	XIV	XV	XVI	XVII	XVIII	XIX
Proper name	96% (25/26)	100% (8/8)	100% (35/35)	95% (42/44)	100% (65/65)	86% (24/28)	89% (24/27)
Definite NP	36% (13/36)	55% (36/66)	58% (38/65)	70% (85/122)	86% (117/136)	83% (44/53)	96% (73/76)
Indefinite NP	0% (0/6)	6% (2/31)	0% (0/11)	12% (7/59)	40% (21/53)	63% (20/32)	41% (12/29)
Bare noun	0% (0/12)	0% (0/7)	17% (2/12)	5% (2/40)	3% (1/39)	9% (2/22)	6% (1/17)

[3] In contrast to the more fine-grained distinctions proposed by Laca (2006: 439–443), the scale in (6) neither includes the differentiation between NPs with and without lexical heads, nor the distinction between definite-like NPs with universal quantifiers (e.g. *cada* 'each') and indefinite-like NPs with existential quantifiers (e.g. *algo* 'some'). Consequently, these categories have not been taken into account in Table 2 and Figure 1. For a discussion of these categories cf. Laca (2006: 437–439) and García García (2014: 82–87).

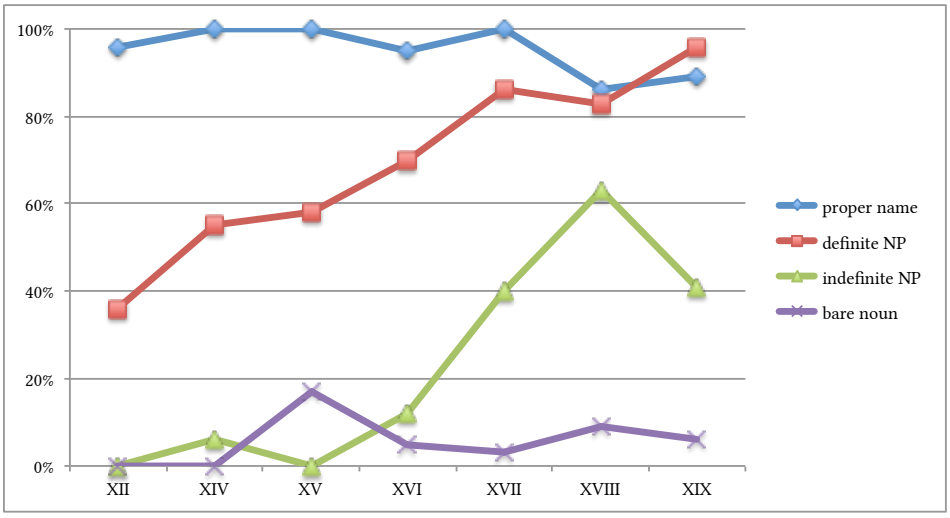

Figure 1: Diachrony of DOM with human objects (based on Laca 2006: 442–443)

Table 2 and Figure 1 allow for a number of observations: Firstly, the expansion of DOM is roughly confined to definite and indefinite NPs. With definite NPs, the frequency of *a*-marked objects increases significantly and more or less continuously. Starting with 36% of *a*-marked objects with definite NPs in the 12th century, we already find 58% in the 15th century, 86% in the 17th century and, finally, 96% in the 19th century. Thus, from being an optional marker for definite human objects in Old Spanish, essentially restricted to dislocated, i.e. topicalized NPs (cf. (7) vs. (8)), *a*-marking has become an almost obligatory requirement for any kind of definite human object in Modern Spanish, including non-topicalized NPs (cf. (9)).

(7) *En* *braço-s* *tened-es* *mi-s* *fija-s* *tan* *blanc-a-s* *como*
in arm-PL hold-2PL 1SG.POSS-PL daughter-PL so white-F-PL as
el *sol.*
the sun
'In your arms you hold my daughters as white as the sun.' (*Cid* 2333, *apud* Laca 2006: 455)

(8) ***a*** *las* *su-s* *fija-s* *en-braço* *las* *prend-ia*
to the 3POSS-PL daughter-PL in-arm them take-IPFV[3SG]
'He took his daughters in his arms.' (*Cid* 275, apud Laca 2006: 428)

(9) *En* *brazo-s* *ten-éis* ***a*** *mi-s* *hija-s* *tan* *blanc-a-s* *como*
in arm-PL hold-2PL to 1SG.POSS-PL daughter-PL so white-F-PL as

el *sol.*
the sun
'In your arms you hold my daughters as white as the sun.'

As illustrated by these examples, one of the driving forces for the spread of DOM seems to be topicality. However, since topics are typically human and necessarily referential, it is not clear whether topicality is also relevant for the spread of DOM concerning other subsets of direct objects, such as those expressed by human indefinite NPs. For a discussion on the impact of topicality on (diachronic) DOM in Spanish, see Laca (1995: 85–89; 2006: 455–456); Melis (1995: 134, 161); Pensado (1995: 196–225); Delbecque (2002: 85); Leonetti (2004: 86–107); von Heusinger & Kaiser (2005: 41–45), and Iemmolo (n.d.: ch. 8.5.2).

As already mentioned above, Table 2 and Figure 1 also show a remarkable evolution with respect to human objects expressed by indefinite NPs. Contrary to definite NPs, however, we do not observe a continuous but rather a discontinuous development with indefinite NPs. From the 12th to the 16th century, *a*-marking of indefinites is attested very scarcely, showing no relevant tokens in the 12th and 15th century and merely 6% and 12% of *a*-marked NPs in the 14th and 16th century, respectively. In the 17th century, there is an abrupt rise of *a*-marked NPs up to 40% followed by a peak of 63% case-marked indefinites in the 18th century. Interestingly, case marking in this century is clearly more frequent than in the 19th century, where it is attested in merely 41% of the transitive constructions, i.e. just as often as 200 years before. As noted by Laca (2006: 460), the relatively high percentage of *a*-marking in the 18th century seems to be due to a verbal factor, namely to the disproportionately high number of causative constructions that are attested in the corresponding text samples. I will comment on this observation in §4.4.

Comparing the development of human definite and indefinite objects, Table 2 and Figure 1 allow for a second general observation: During the whole period, the frequency of marked definite objects is clearly and constantly higher than that of indefinite objects. This distribution is completely in line with the expected development based on the prominence scales.

A further observation that follows from Table 2 and Figure 1 is that with both proper names and bare nouns, there is no attested evolution: similarly to strong personal pronouns, proper names already required object marking in the 12th century (cf. (10) as well as the findings from Company Company 2002b: 207 given in Table 5). Although Figure 1 shows a slight retraction in the 18th and 19th century, it is still the strongly preferred option today.

(10) *Mat-astes* ***a*** *Bucar* *e* *arranc-amos* *el* *canpo.*
kill-2SG.PST to Bucar and take-1PL.PST the field
'You killed Bucar and we have won the battle.' (*Cid* 2458, *apud* Laca 2006: 447)

With bare nouns, object marking is hardly ever attested across the centuries. Note that the absolute numbers are extremely low with respect to this category showing only two or fewer tokens with *a*-marked objects per century. This is also the case for the 15th

century, where the relatively high frequency of 17% of DOM corresponds to only 2 out of 12 relevant instances. Even in Modern Spanish, DOM of bare nouns is generally blocked. It is only found under certain conditions: (i) with bare plural objects governed by some verbs such as *golpear* 'to beat' (cf. example (16) in §4.2); (ii) with bare plural objects that are modified by an attribute as in (11); and (iii) with bare plurals expressing a contrastive focus as in (12).

(11) a. ??*Detuv-ieron* ***a*** *hincha-s.*
arrest.PST-3PL to supporter-PL
'They arrested some supporters.'

b. *Detuv-ieron* ***a*** *hincha-s* *peligros-o-s* *del* *Atlético.*
arrest.PST-3PL to supporter-PL dangerous-M-PL of.the Atlético
'They arrested some dangerous Atlético supporters.' (Leonetti 2004: 87)

(12) a. ??*En* *el* *poblado* *vi* ***a*** *pescador-es.*
in the village see.PST.1SG to fisher-PL
'In the village I saw some fishers.'

b. *En* *el* *poblado* *vi* ***a*** *PESCADOR-ES,* *no* ***a*** *turista-s.*
in the village see.PST.1SG to fisher-PL NEG to tourist-PL
'I saw fishers in the village, not tourists.' (Leonetti 2004: 88)

By way of summary, it is important to stress a fact that has not received the necessary attention in the literature: The expansion of DOM within the domain of humans only applies to definite and indefinite object NPs. For the other NP types, there is no observable evolution. DOM was either already required in Old Spanish, as is the case with proper names, or it was and still is blocked today, as is evidenced by bare nouns.

3.3 Animate non-human objects

Let us turn to animate objects that do not refer to human individuals such as animals. Table 3 summarizes the corresponding corpus results from Laca (2006). Due to the many gaps and the very low numbers of relevant tokens across all categories, no clear picture emerges from these findings.

With regard to proper names, indefinite NPs and bare nouns, no conclusions whatsoever can be drawn on the basis of these numbers. The results are slightly better for definite NPs. Here, one may assume a certain increase of DOM: Whereas in the 14th century only 10% of the definite NPs occur with *a*-marking, we find 41% of marked objects in the 17th century and 36% in the 19th century. Note, however, that there are no cases of DOM in the 16th century and that there is a remarkable retraction in the 18th century, where, in contrast to the preceding centuries, only 6% of *a*-marked objects are attested.

The results from another diachronic corpus analysis, namely that by Company Company (2002a,b), suggest a much clearer picture. However, the overall distribution of *a*-marked animate objects is considerably lower, showing 3% of *a*-marked animate objects

Table 3: Diachrony of DOM with animate non-human objects (adapted from Laca 2006: 442–443)

	XII	XIV	XV	XVI	XVII	XVIII	XIX
Proper name	100% (1/1)	– (0/0)	– (0/0)	– (0/0)	100% (10/10)	– (0/0)	– (0/0)
Definite NP	0% (0/2)	10% (2/20)	20% (1/5)	0% (0/10)	41% (16/39)	6% (1/18)	36% (4/11)
Indefinite NP	– (0/0)	0% (0/10)	– (0/0)	0% (0/4)	7% (1/15)	4% (1/27)	0% (0/5)
Bare noun	– (0/0)	0% (0/5)	– (0/0)	0% (0/11)	0% (0/5)	0% (0/6)	0% (0/5)

in the 13th and 14th century, 6% in the 15th century, and 7% in the 16th century (cf. Table 5 in §3.4, below). These percentages may indicate a slight and constant increase of DOM, but one has to be cautious. Firstly, because the category of animates has not been differentiated with respect to definiteness in the aforementioned corpus study. This means that the frequencies within the same study may not be comparable. While the attested cases of DOM in the 13th century may contain animate indefinite NPs, the corresponding data of the 16th century may be confined to animate definite NPs or proper names. Secondly, Company Company's (2002b) study does not provide information about the distribution of DOM with animates beyond the 16th century. Thus, in contrast to the development of *a*-marking with human objects, the diachrony of DOM with animates is far from clear.

On the basis of the corpus studies carried out so far, we cannot assess whether there really has been an evolution of DOM with animate non-human objects. We clearly need further analyses grounded on much broader empirical bases. Moreover, there are some additional parameters that must be taken into account with respect to animate non-human objects, especially with regard to the category of animals. Beyond definiteness and other related semanto-pragmatic criteria such as specificity and topicality, DOM with animals additionally seems to depend on the species of the animal denoted by the lexical noun as well as on the affective relation between the speaker and the animal referent in question (cf. Bossong 1991: 159; Aissen 2003: 457; Real Academia Española 2010: 2635). Furthermore, *a*-marking also hinges on the agentivity of the animal referent in the given event: Based on data from *Don Quijote* (17th century), García (1993: 42) observes that *a*-marking of definite animal objects is more likely in contexts where the animals are moving and acting on their own than in contexts where no movement of the animals is asserted. These parameters may be responsible for a great amount of both synchronic and diachronic variation.

Summing up the results presented so far, it can be concluded that there has been a clear evolution of DOM along the definiteness scale. However, the evolution only concerns human referents, specifically human objects expressed by full definite and indefinite NPs.

While in Old Spanish the *a*-marking was optional (±) for human definite objects and was not attested for human indefinite NPs (–), in Modern Spanish we find near obligatory *a*-marking of the former (+) and at least optional *a*-marking (±) of the latter category (cf. Table 4).

Table 4: Evolution of DOM with human objects along the definiteness scale

[+human]	Old Spanish (12th century)	Modern Spanish (19th century)	evolution
Personal pronoun	+	+	no
Proper name	+	+	no
Definite NP	± (36%)	+ (96%)	yes
Indefinite NP	– (0%)	± (41%)	yes
Bare noun	–	–	no

3.4 Inanimate objects

Let us consider the diachrony of DOM with inanimate objects. Interestingly, *a*-marking with inanimate objects is already found in Old Spanish, though it is only attested very scarcely (cf. §4.3.2 for some examples). Laca (2006) does not give any numbers concerning the development of DOM with inanimate objects. However, her conclusion with respect to this lexical subset of object NPs is fairly clear: "On the basis of the analyzed corpus, one cannot assume an increase of the frequency of occurrences of object marking with inanimates, the use of the object marker is always marginal in these cases" (Laca 2006: 450, my translation).[4]

In contrast, Company Company (2002a,b) comes to a different conclusion. Her corpus study considers DOM with humans, animates and inanimates from the 13th–20th century. The data from the 20th century are exclusively from Mexican Spanish. Based on this corpus study, the author observes that *a*-marking has not only become more frequent for animate objects, in particular for humans, but also for inanimate objects (cf. Table 5).

As for the 20th century, the data shows 17% (64/363) of inanimate objects with *a*-marking. Although Company Company does not differentiate between definite and indefinite NPs, it is very likely that the *a*-marked inanimate objects are mostly definite (cf. Barraza Carbajal 2003: 28, 108, García García 2014: 38–39, 81–87). According to Company Company (2002a,b), the corpus results clearly indicate that (Mexican) Spanish is heading towards a full grammaticalization of the differential object marker into a proper accusative case marker:

[4] "Partiendo del corpus examinado, no puede hablarse de un aumento de las ocurrencias ante inanimados, antes bien, la marca en estos casos es siempre marginal" (Laca 2006: 450).

Table 5: The diachrony of DOM in Spanish according to Company Company (2002b: 207)

	XIII	XIV	XV	XVI	XX
Pronoun	100% (53/53)	100% (46/46)	99% (67/68)	99% (182/183)	100% (55/55)
PN	99% (124/125)	99% (170/172)	96% (129/134)	88% (124/147)	100% (32/32)
Human	42% (243/574)	35% (224/631)	35% (181/518)	50% (541/1086)	57% (81/141)
Animate	3% (4/155)	3% (2/64)	6% (2/34)	7% (11/168)	– –
Inanimate	1% (2/300)	0% (1/300)	3% (8/300)	8% (54/641)	17% (64/373)

> Nowadays, the last stage of the grammaticalization is going on; an interesting slow invasion of the *a* case-marker into the prototype inanimate zone is taking place, it is no more a classifier 'personal *a*', it is becoming a true case-marker, generalizing its meaning and syntactic distribution. (Company Company 2002b: 208)

However, (Mexican) Spanish actually seems to be rather far from entering this last stage of grammaticalization. In addition to the above-mentioned findings from Laca (2006: 450), this is shown by a number of further empirical analyses (cf. Buyse 1998; Barraza Carbajal 2003; Tippets 2011; García García 2014). In what follows, I will briefly comment on these studies.

Barraza Carbajal (2003) is a detailed diachronic corpus analysis confined to inanimate objects. The data are based on different text types (literary texts, newspapers, academic texts) from the 16th, 18th and 20th centuries. One half of the texts stem from Spain, the other half from Mexico. Similar to Company Company (2002a,b), the findings from Barraza Carbajal also suggest an increase of *a*-marking with inanimate objects. However, the increase is much lower, showing 2% (12/547) of *a*-marked instances in the 16th century, 3% (15/546) in the 18th century and only 5% (49/962) in the 20th century.

Similar results for the 20th century are provided by Tippets (2011), a contrastive analysis of DOM based on exclusively oral material from Buenos Aires, Madrid and Mexico City. At least as far as inanimate objects are concerned, the distribution of *a*-marking is notably higher in Buenos Aires but still comparably low in all three cities: Tippets (2011: 113) found 8% (26/339) of *a*-marked instances in Buenos Aires, 5% (18/345) in Madrid, and 5% (13/283) in Mexico City. Particularly the percentages for Madrid and Mexico resemble the above-mentioned results from Barraza Carbajal (2003). Altogether, the distribution of *a*-marking with inanimate objects across the three varieties considered by Tippets (2011) is 5.9% (57/967).

Buyse's (1998) study is a synchronic corpus analysis that uses mainly written texts from 20th century European Spanish. Regarding inanimate objects, his corpus shows

only 3.2% (65/1,936) of marked instances. According to my own empirical research (García García 2014: 71), the frequency of *a*-marked inanimate objects in the 20th century is even lower, namely 1.2% (573/48,231). My corpus analysis is based on the *Base de Datos de Verbos, Alternancias de Diátesis y Esquemas Sintáctico-Semánticos del Español* (ADESSE), an open source data base of 1.5 million words that pertain to written and oral texts stemming from Spain (80%) and Latin America (20%).[5] Figure 2 summarizes the results of DOM with inanimate objects obtained in the previously mentioned corpus studies. (*DO* refers to morphologically non-marked direct objects and *a DO* to *a*-marked direct objects).

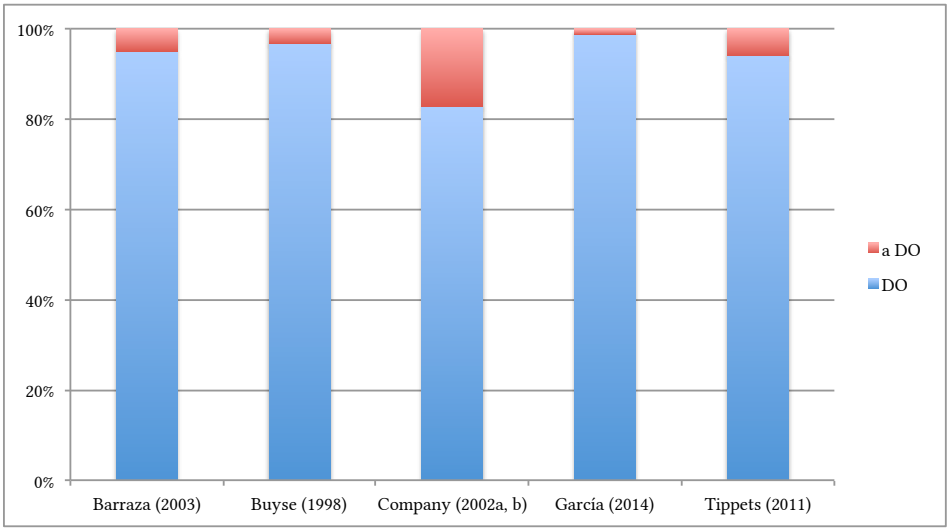

Figure 2: Percentages of DOM with inanimate objects in different corpora (20th century)

As can be observed in this figure, the percentages of inanimate objects with *a*-marking found in the cited studies range from 1.2% to 17.2%. Interestingly, the reasons for the differing results seem to be neither connected to the origin of the data (Spain, Mexico etc.), nor to the type of the data (oral vs. written), but rather to the notion of animacy. This category is usually taken for granted and not defined explicitly. Particularly important in this regard is the categorization of objects denoting collectives such as *equipo* 'team' or *empresa* 'company', which are more likely to occur with *a*-marking. Crucially, in some corpus studies such as in Barraza Carbajal (2003), collectives are classified as inanimates, whereas in others, such as my own (García García 2014), they are subsumed under the category of animates. This may be one of the causes for the differing results (cf. García García 2014: 72–75). In order not to blur the distinction between animates and inanimates, the most adequate treatment would be to put collectives in a separate class, or, as Ilja

[5]For details see http://adesse.uvigo.es/index.php/.

A. Seržant (p.c.) has suggested, to simply exclude them from the analysis of DOM. This would do justice to the problem that the animacy association of these nouns is context-dependent and not uniform.

To summarize this section, it can be concluded that there is no clear support for an evolution of DOM with inanimate NPs. Although *a*-marking of inanimate objects seems to be attested already in Old Spanish, it is still very rare today. Thus, there is no evidence for the hypothesis that the differential object marker is becoming a non-differential accusative case marker. On the contrary, the empirical findings discussed in this section suggest that the evolution of *a*-marking from Old to Modern Spanish is basically restricted to human definite and human indefinite objects. This may lead to the conclusion that the *a*-marker is basically "a marker of animate direct objects" (de Swart 2007: 132), or human direct objects, to be more precise. However, this is a somewhat problematic simplification since, in combination with certain verbs, *a*-marking may also be required for inanimate objects (cf. §4.3 below).

4 Verbal parameters and diachronic DOM in Spanish

In this section, I will consider different verbal parameters, elaborating on their interaction with nominal parameters and their influence on synchronic and diachronic DOM. I will first look at aspect, focusing on telicity (§4.1), then take into account the role of affectedness (§4.2), and, finally, point to the relevance of agentivity (§4.3–§4.4).

4.1 Aspect

According to Torrego Salcedo (1999: 1787–1790), aspect has a clear and systematic influence on DOM in Modern Spanish. She states that direct objects governed by telic verbs, i.e. by Vendler (1957) ACHIEVEMENT and ACCOMPLISHMENT verbs such as *insultar* 'to insult' and *curar* 'to treat', take the *a*-marker obligatorily, at least if the object referents are human. This is illustrated in (13).

(13) *Insult-aron* ****ø/a*** *un* *estudiante.*
insult-3PL.PST ø/to a student
'They insulted a student.'

Even though the direct object in (13) is indefinite, *a*-marking is not optional but categorical. Note, however, that the verbs considered by Torrego Salcedo are not only characterized by being telic, but also by two further non-aspectual properties: firstly, verbs such as *insultar* 'to insult', *sobornar* 'to bribe', *curar* 'to treat' and *emborrachar* 'to make drunk' involve an affected object (cf. §4.2). Secondly and more importantly, these verbs only accept object arguments that are human. Thus, the alleged lexicalization of the *a*-marker assumed for these verbs might not be tied to telicity but rather to their strong preference for human objects (cf. also von Heusinger 2008: 28–29). Further evidence for this view is provided by the fact that direct objects governed by typical telic predicates

with a strong preference for inanimate objects such as the ACHIEVEMENT verbs *abrir* 'to open' or *cerrar* 'to close' are systematically blocked for DOM.[6]

(14) *Pepe abr-e* ***ø/*a*** *la puerta.*
Pepe open-3SG.PST ø/to the door
'Pepe opens the door.'

Torrego Salcedo (1999) also considers atelic verbs, i.e. Vendler's (1957) ACTIVITIES (e.g. *besar* 'to kiss') and STATES (e.g. *conocer* 'to know'). They seem to differ with respect to the transition point of DOM, i.e. the right-most category within the relevant scales requiring object marking. Contrary to the above-mentioned telic predicates, with verbs denoting ACTIVITIES and STATES, *a*-marking of indefinite human objects is not obligatory but rather optional. According to Torrego Salcedo (1999: 1788–1789), object marking with ACTIVITY verbs may lead to a shift from an atelic to a telic interpretation. However, this is controversial. As convincingly argued by Delbecque (2002: 95–97), the telic reading does not depend on DOM. This is shown in (15), which clearly denotes a telic event, regardless of whether the object is *a*-marked or not.

(15) *Bes-aron* ***ø/a*** *varios ciclista-s en una hora.*
kiss-3PL.PST ø/to several cyclist-PL in one hour
'They kissed several cyclists in one hour.'

From a diachronic perspective, the influence of aspect on DOM has been studied by Barraza Carbajal (2008). This study is confined to inanimate objects. Therefore, it allows for an animacy-independent evaluation of the impact of aspect. Besides telicity, her study also considers perfectivity, i.e. the proper aspectual parameter related to the viewpoint of an event (perfective vs. imperfective). As far as telicity is concerned, the results of Barraza Carbajal (2008: 343–346) show that *a*-marking through time does not correlate with telic verbs such as *comprar* 'to buy', but rather with atelic verbs such as *conocer* 'to know' (cf. Table 6).

In each of the considered time periods in Table 6, the percentages of *a*-marked objects are clearly higher with atelic than with telic verbs. This is particularly evident for the 18th century, where 93% of the *a*-marked objects are governed by atelic verbs. Note that, in all centuries, there is also a clear correlation between atelic verbs and the absence of *a*-marking. For example, in the 15th–16th century we find that not only 75% of the cases with DOM are attested with atelic verbs, but also that 61% of the instances without DOM combine with atelic predicates. Though in all of the time periods the percentages of atelic verbs are always higher for objects with *a*-marking than for those without *a*-marking, it is striking that, in the 20th century, the difference is only minimal (72% vs. 70%). This suggests that, diachronically, the influence of atelic verbs has decreased. Nowadays, the frequency of atelic verbs with *a*-marked objects roughly corresponds to the frequency

[6]Note also that there are some verbs such as *preceder* 'to precede' and *suceder* 'to follow' that require *a*-marking even when the object is inanimate. Clearly, these verbs denote atelic rather than telic events (cf. §4.3).

Table 6: Telicity and diachronic DOM with inanimate objects (Barraza Carbajal 2008: 345)

	DO		a DO	
	atelic	*telic*	*atelic*	*telic*
XV-XVI	61% (326/535)	39% (209/535)	75% (18/24)	25% 25%
XVIII	76% (404/531)	24% (127/531)	93% (67/72)	7% (5/72)
XX	70% (639/913)	30% (274/913)	72% (133/185)	28% (52/185)

of these verbs with objects without *a*-marking. The same applies for telic verbs (28% vs. 30%). Consequently, telicity itself does not seem to be a relevant factor for DOM in Modern Spanish, at least as far as inanimate objects are concerned (cf. Barraza Carbajal 2008: 345).

The results for perfectivity, that is, the criterion related to the viewpoint aspect, resemble those for telicity. Barraza Carbajal's (2008: 346–348) data show that there is a slight diachronic preference for DOM in imperfective rather than in perfective events. For the 20th century, the corpus findings show that 79% (146/185) of the *a*-marked objects co-occur with an imperfective verb form while only 21% (39/185) are attested with a perfective verb form. Similar to what is the case with telicity, the percentages for the constructions without DOM are comparable: While 74% (676/913) of the sentences without *a*-marking denote an imperfective event, 26% (237/913) express a perfective event.

To sum up, our brief discussion of aspect points to the following conclusions: Firstly, the alleged lexicalization of the *a*-marker found with certain telic verbs such as *insultar* 'to insult' may not be due to telicity but rather to the verb's restriction for human objects. Secondly, Barraza Carbajal's (2008) analysis of inanimate objects suggests that aspect in itself has only a minor influence on DOM in Spanish. Thirdly, it seems that this influence decreases through time. Finally, it is remarkable that (diachronic) DOM does not correlate with telic and perfective but with atelic and imperfective events, i.e. with verbal parameters indicating a low rather than a high degree of transitivity. This correlation seems to contradict the findings concerning the second important verbal parameter related to DOM, namely affectedness.

4.2 Affectedness

The relevance of affectedness for DOM in Spanish has been pointed to by Spitzer (1928), Pottier (1968) and Torrego Salcedo (1999), among others. Similarly to telicity, Torrego Salcedo (1999: 1791) notes that, in Modern Spanish, objects governed by verbs selecting an affected object such as *golpear* 'to beat' require *a*-marking even for human objects that are indefinite and non-specific. As (16) shows, even bare nouns require the *a*-marker, at least with the verb *golpear* 'to beat'.

(16) *Siempre golpe-an* ****ø/a*** *turistas.*
always beat-3PL ø/to tourists
'They always beat tourists.'

According to the literature, some of the verbs selecting an affected object such as *castigar* 'to punish', *sobornar* 'to bribe' or *odiar* 'to hate' seem to have lexicalized the object marker for all human objects (cf. Leonetti 2004: 84 among others). However, it is not clear whether this alleged lexicalization is really due to affectedness. Again, most of these verbs only accept human objects. Verbs that also allow for inanimate objects such as *odiar* 'to hate' only require *a*-marking when the object is human. As stated by von Heusinger (2008: 9): "It rather seems that it is just the condition of being human that triggers (obligatory) DOM." Moreover, the assumption that verbs such as *odiar* 'to hate' select an affected object is not without problems. Usually, such predicates are analyzed as psychological verbs having an EXPERIENCER and a STIMULUS as their arguments, whereby neither the former nor the latter represents a properly affected participant.

The diachronic impact of affectedness on DOM in Spanish has been systematically analyzed by von Heusinger (2008) and von Heusinger & Kaiser (2011). In the latter study, affectedness is defined as the "persistent change of an event participant" (von Heusinger & Kaiser 2011: 593). Moreover, affectedness is taken as a gradual notion that is specified by means of Tsunoda's (1985: 388) transitivity or affectedness scale, where different verb classes are ordered with respect to the degree of affectedness of the patient argument (cf. Table 7).

Table 7: Affectedness scale of Tsunoda (1985: 388, first 5 classes) with Spanish verbs (von Heusinger & Kaiser 2011: 609)

1 Direct effect on patient (=effective action)		2 Perception		3 Pursuit	4 Knowledge	5 Feeling
1a +result	1b −result	2a +attained	2b −attained			
matar 'kill', *herir*, 'violate'	*golpear* 'hit', *tirar* 'shoot'	*ver* 'see', *oír* 'hear'	*escuchar* 'listen', *mirar* 'look at'	*buscar* 'search for', *esperar* 'wait for'	*conocer* 'know', *entender* 'understand'	*querer* 'like', *temer* 'fear'

The left-most class, i.e. EFFECTIVE ACTION, comprises prototypical transitive verbs such as *kill* or *hit*. This class can further be subdivided into two subclasses (1a and 1b), depending on whether the event denoted by the predicate has a direct result on the patient or not. Verbs from the EFFECTIVE ACTION class 1a such as *kill* are supposed to impose the highest degree of affectedness on the corresponding patient. The verb classes to the right imply a respectively lower degree of affectedness.

Focusing on the five verb classes given in the affectedness scale in Table 7, von Heusinger & Kaiser (2011) carried out a diachronic corpus analysis considering 12 verbs, i.e. 2 verbs per class, including the subclasses of the Effective Action type. Their study comprises 2,000 sentences from the 15th, 17th and 19th centuries extracted from the *Corpus del Español* and CORDE. While they only considered human NPs, they carefully differentiated between definite and indefinite NPs. They found clear significant correlations between verb classes and diachronic DOM with both definite and indefinite objects. Here, I will only consider the latter NP subtype, i.e. human indefinite objects, since the impact of verb classes on DOM is more obvious with these objects. The results are presented in Table 8 and Figure 3.

Table 8: Percentages of *a*-marking of human indefinite direct objects for five verb classes (von Heusinger & Kaiser 2011: 611)

	15th cent.	17th cent.	19th cent.
1a + 1b Effective Action: *matar*, *herir*, *golpear*, *tirar*	18% (9/51)	40% (21/53)	79% (46/58)
2a +2b Perception: *oír ver*, *escuchar*, *mirar*	17% (1/6)	71% (22/31)	93% (27/29)
3 Pursuit: *buscar*, *esperar*	11% (1/9)	23% (8/35)	41% (17/41)
4 Knowledge: *conocer*, *entender*	– (0/0)	31% (5/16)	67% (14/21)
5 Feeling: *querer*, *temer*	– (0/0)	52% (11/21)	75% (15/20)

Von Heusinger & Kaiser's (2011) findings show a great influence of verb classes on DOM through time. Furthermore, they suggest at least a partial correlation between diachronic DOM and affectedness. For example, there are clearly higher percentages of *a*-marked instances in each of the centuries for direct objects governed by verbs of the Effective Action class (e.g. *matar* 'to kill', *golpear* 'to hit') than for direct objects combining with the Pursuit class (e.g. *buscar* 'to search for', *esperar* 'to wait for').

However, as noted by von Heusinger & Kaiser (2011), the corpus results do not fully mirror the expectations based on Tsunoda's (1985) affectedness scale. There are some interesting mismatches concerning the correlation between diachronic DOM and affectedness. The most striking mismatch concerns the class of Feeling, which represents the lowest ranking class in the proposed affectedness scale (cf. Table 7). Contrary to expectation, this class showed a much greater affinity for object marking than the Pursuit or the Knowledge class. Taking a closer look at the Feeling class, von Heusinger & Kaiser (2011) found that the two selected verbs, i.e. *querer* 'to like' and *temer* 'to fear', behave very differently. While the first shows the expected lower preference for object marking, the latter demonstrates an unexpected strong preference for *a*-marking. The authors explain the unpredicted behavior of DOM with *temer* 'to fear' as follows:

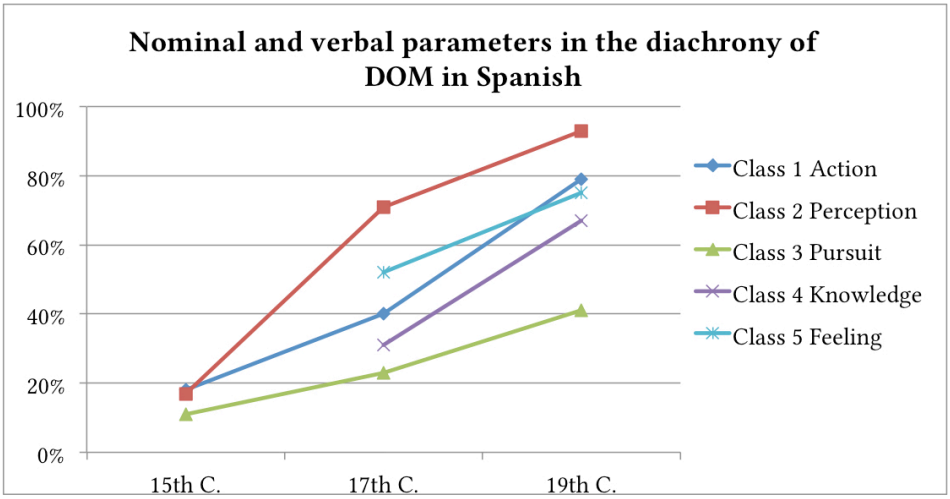

Figure 3: Percentages of *a*-marking of human indefinite depending on verb classes and time (von Heusinger & Kaiser 2011: 611)

> [T]he direct object of 'fear' has more typical properties of a subject than a prototypical object of 'like' (see Kirsner & Thompson 1976). This might be the cause of *temer*'s high scores. This behaviour, however, has nothing to do with affectedness, but rather with the competition between the agentivity of the participants involved in the event. (von Heusinger & Kaiser 2011: 613)

A similar contrast as the one between *querer* 'to like' and *temer* 'to fear' is found within the PERCEPTION class. Here, the verbs of auditory perception, i.e. *escuchar* 'to listen' and *oír* 'to hear' show a notably stronger preference for diachronic DOM than the visual perception verbs *mirar* 'to look at' and *ver* 'to see' (cf. von Heusinger & Kaiser 2011: 614). The different behavior of these verbs can be explained along the same lines as the contrast between *querer* 'to like' and *temer* 'to fear'. While the verbs of auditory perception presuppose a noise-producing source as their object argument, i.e. a physically active and thus agent-like participant, the object argument of visual perception verbs need not be an agentive participant (cf. also Enghels 2007: 244–273).

Summing up, on the one hand there seems to be a clear diachronic correlation between affectedness and the spread of DOM. On the other hand, however, the unexpected strong preference for diachronic DOM found with the FEELING verb *temer* 'to fear', as well as with the verbs of auditory PERCEPTION *escuchar* 'to listen' and *oír* 'to hear', suggest a rather contrary correlation, namely that DOM is not favored by a higher degree of the object's affectedness but by a higher degree of the object's agentivity. As we will see in the next section, agentivity is also the key notion for understanding the rare and seemingly exceptional cases of DOM with inanimate objects.

4.3 Agentivity and DOM with inanimate objects

4.3.1 DOM-sensitive verb classes in Modern Spanish

As shown in §3.4, *a*-marking of inanimate direct objects is generally ungrammatical in Modern Spanish; cf. (3) repeated in (17) for convenience:

(17) *Pepe ve* ***ø/*a*** *la película.*
Pepe see[3SG] ø/to the film
'Pepe sees the film.'

However, in some cases, such as those given in (18), *a*-marking of inanimate objects is obligatory or at least the strongly preferred option.

(18) a. *Un artículo preced-e* ****ø/a*** *un sustantivo.*
a article precede-3SG ø/to a noun
'An article precedes a noun.'

b. *En este cóctel el vodka pued-e sustitu-ir* ****ø/a*** *la ginebra.*
in this cocktail the vodka can-3SG substitute-INF ø/to the gin
'In this cocktail, vodka can be substituted by gin.'

c. *La euforia caracteriz-a* ***??ø/a*** *la situación.*
the euphoria characterize-3SG ø/to the situation
'Euphoria characterizes the situation.'

d. *La mujer venc-ió* ***??el/al*** *destino.*
the woman beat-3SG.PST the/to.the destiny
'The woman beat destiny.'

e. *No llam-an conflicto* ****ø/a*** *una pelea.*
NEG call-3PL conflict ø/to a fight
'They do not call a fight a conflict.'

Note that these examples challenge many of the standard assumptions about DOM. Firstly, they call into question the implicational predictions associated with prominence scales mentioned in §2: The observation based on (18), that (definite and indefinite) inanimate objects must take the *a*-marker, would lead to the wrong prediction that *a*-marking is also obligatory for animate non-human objects.[7] Obviously, this is not the case. In most contexts, *a*-marking of animate non-human objects is rather optional than categorical (cf. Table 1). As noted by Torrego Salcedo (1999: 1788), among others, *a*-marking in

[7] Though it is more usual to find definite rather than indefinite NPs among inanimate objects with *a*-marking (in particular with those that are not modified by an attribute), definiteness is not a necessary condition for *a*-marking (cf. (18a) and (18e)).

sentences such as those in (18) is not determined by nominal but by verbal factors, more specifically by lexical verbs such as *preceder* 'to precede'.

This conclusion is certainly true, but it involves a second problem. It contests the traditionally assumed hierarchy of DOM conditions in Spanish, according to which object marking depends first and foremost on nominal parameters (animacy and definiteness) rather than on verbal parameters.

The very impact of verbal parameters involves yet a third puzzle for the standard assumptions about DOM (in Spanish). The main verbal factors that are taken to be relevant for DOM in Spanish are telicity and affectedness (cf. §4.1 and §4.2). However, in (18) neither the former nor the latter factors are at play. Apart from (18d), the sentences given in (18) do not denote a telic, but a stative situation. Furthermore, they involve a non-affected rather than an affected object.

Following Weissenrieder (1985; 1991) and Delbecque (2002), I have argued elsewhere (cf. García García 2007: 65–66; 2014: 147–189) that DOM with inanimate objects occurs mainly with a small number of verb classes, namely with those given in (19).

(19) DOM-sensitive verb classes

a. Verbs of sequencing (e.g. *preceder* 'to precede', *suceder* 'to succeed').
b. Verbs of replacement (e.g. *sustituir* 'to substitute', *reemplazar* 'to replace')
c. Verbs of competition (e.g. *vencer* 'to win', *derrotar* 'to defeat')
d. Verbs of attribution (e.g. *caracterizar* 'to characterize', *definir* 'to define')
e. Verbs of naming (e.g. *considerar* 'to consider', *llamar* 'to call')

The unexpected affinity for DOM with inanimate objects found with these verbs seems to be triggered by their specific role semantics, at least as far as the classes (18a–d) are concerned.[8] According to the generalization of *thematic distinctness* proposed in García García (2007: 71, 2014: 145); *a*-marking of inanimate direct objects is required when the subject does not outrank the object in terms of agentivity. Before illustrating this generalization, I will briefly specify my notion of agentivity, which is based on Primus' (1999a; 2006) Proto-Role model, a refined version of that by Dowty (1991).

Primus (1999a; 1999b; 2006) distinguishes two types of thematic information that define Proto-Roles: *involvement* and *dependency*. Involvement is characterized by the number and content of Proto-properties, which roughly correspond to those mentioned by Dowty (1991: 573), that is, control, (autonomous) movement, experience and possession. The second type of thematic information, viz. dependency, describes the causal relation between the involved co-arguments. According to Primus (1999a: 52; 2006: 56), the Proto-Patient always depends on the Proto-Agent (co-argument dependency). Crucially, the co-argument dependency relation is taken as the central criterion that distinguishes the Proto-Agent from the Proto-Patient. Whereas the Proto-Patient is defined by its causal dependency on the Proto-Agent, the Proto-Agent is conceived

[8] DOM with verbs of naming is mostly found in double object constructions, in particular when the object argument and the predicative nominal are adjacent, as in (18e). Thus, with this verb class DOM is rather due to syntactic factors (cf. García García 2014: 102–104).

of as a *causally independent co-argument*, i.e. as an argument whose existence and involvement in a given event do not depend on any other argument.

Following Primus (2006), not just participants accumulating many or all of the Proto-Agent involvement properties (control, experience etc.), such as the first argument of *Uma kills Bill*, will count as Proto-Agents. Participants showing a minimal number or even none of the corresponding involvement properties, such as the subject in *Uma is brave*, are also considered as Proto-Agents, though as logically weaker ones.[9] This is due to the fact that, in both situations, *Uma* functions as a causally independent co-argument.

On the basis of Primus' notion of agentivity, let me now illustrate the above-mentioned generalization of thematic distinctness. I will focus on the verbs of sequencing (19a) and the verbs of replacement (19b), which can be subsumed under the more abstract class of reversible predicates since they both point to a reversible relation between their co-arguments. Consider (18a), where the verb *preceder* 'to precede' denotes a merely temporal ordering of the core arguments *artículo* 'article' and *sustantivo* 'noun'. According to Primus (2006: 56), both arguments can be categorized as Proto-Agents. This follows from the fact that, in the sequencing event denoted by *preceder* 'to precede', none of the co-arguments depends on the other. Note that the same (truth-functional) meaning as in (18a) can be expressed by means of the verb *suceder* 'to succeed/come after', which is the converse counterpart of *preceder* 'to precede':

(20)	*Un*	*sustantivo*	*suced-e*	****ø/a***	*un*	*artículo.*
	a	noun	succeed-3SG	ø/to	a	article

'A noun comes after an article.'

As predicted by the generalization of thematic distinctness, *a*-marking is required in (18a), as well as in (20). Note that the *a*-marked NPs in (18a) and (20) are not indirect but direct objects. Though from a semantic point of view neither *preceder* 'to precede' nor *suceder* 'to succeed' are typically transitive predicates, morphosyntactically they behave as canonical transitive verbs. This is evidenced by the fact that these verbs fulfill the standard morphosyntactic criteria for transitivity in Spanish. They allow for both pronominalization of the object by means of an accusative clitic and transformation into a passive (cf. García García 2014: 55–56).

The obligatory object marking in (18b) can also be accounted for by thematic distinctness. Similar to (18a), (18b) also denotes a reversible relation between the corresponding co-arguments. Obviously, (18b) does not encode an asymmetric substitution event, with *vodka* and *gin* functioning as the respective Proto-Agent and Proto-Patient arguments. Rather, *vodka* and *gin* are conceived of as replaceable ingredients. This means that (18b) neither entails a proper causation on the part of the subject, nor a proper affection on the part of the object argument. Again, both arguments can be analyzed as Proto-Agents since none of the participants depends on the other. To put it differently,

[9] Proto-Agents having many or all of the corresponding involvement properties are specified as A^{max}, whereas Proto-Agents with only a minimal or even none of the relevant involvement properties are referred to as A^{min} (cf. Primus 2006: 61).

in the referred situation *vodka* and *gin* serve the same role-semantic function: They can both be used to cause a specific change of state concerning the taste, the alcoholic content or some other characteristic property of the cocktail in question (cf. García García 2007: 80; 2014: 137–138, and Primus 2012: 78).

Although reversible verbs generally show a very strong preference for *a*-marked direct objects, there are some conspicuous differences among the lexical predicates that form this class. As I have shown in detail elsewhere (García García 2014: 162–167), this is particularly obvious with respect to the sequencing verbs *preceder* 'to precede', *suceder* 'to succeed' and *seguir* 'to follow'. In the corpus data base ADESSE (20th century), inanimate direct objects of *preceder* and *suceder* are exclusively attested with *a*-marking. This suggests that these verbs have lexicalized the *a*-marker. However, in combination with *seguir* *a*-marking is only found in 7.5% (12/160) of the cases. The different behavior of *preceder* 'to precede' and *suceder* 'to succeed', on the one hand, and *seguir* 'to follow', on the other, is connected to the fact that the latter predicate is a polysemous verb. *Seguir* can be used not only with a reversible meaning in the sense of 'x comes after y' (21a), but also with different non-reversible meanings such as 'to follow (with the eyes), 'to observe' (21b) or 'to continue' (21c). As illustrated in (21), *a*-marking is only found when *seguir* is used with the reversible meaning.

(21) a. *la-s* *pausa-s* *que* *sig-uen* […] ***a*** *su-s* *tarea-s* *de* *copista*
the-PL pause-PL that follow-3PL to 3SG.POSS-PL task-PL of copyist
'the pauses that come after his tasks as a copyist' (ADESSE, PAI: 086, 02)

b. *el* *animal-it-o* […] *segu-í-a* *cada* *movimiento* *de* *su-s* *mano-s*
the animal-DIM-MASC follow-IPFV-3SG each movement of his-PL hand-PL
'the little animal followed/observed every movement of his hands' (ADESSE, TER: 074, 16)

c. *te* *quitaban* *la* *chuleta* *y* *seg-uí-as* *el* *examen*
2SG.ACC remove the crib and follow-IPFV-2SG the exam
'they took the crib away from you and you continued the exam' (ADESSE, MAD: 417, 05)

Whereas (21a) denotes a situation similar to the ones expressed in (18a) and (20), i.e. a merely temporal relation in which the object is as agentive as the subject argument, both the event referred to in (21b) and in (21c) involve an object that is clearly less agentive than the respective subject participant. This correlates with the absence of *a*-marking.

In sum, the observations on reversible predicates show that the relative agentivity of the direct object is a crucial factor for DOM, at least as far as inanimate objects in Modern Spanish are concerned (for further evidence, including the other DOM-sensitive verb classes mentioned in (19), see García García 2014: Ch. 6). Building on these synchronic

insights, let us now examine whether agentivity is also a diachronically relevant factor for DOM in Spanish.

4.3.2 DOM-sensitive verb classes from a diachronic perspective

It is noteworthy that, despite its rareness, DOM with inanimate objects is already attested in older stages of Spanish, at least with definite NPs (cf. Table 5, Table 6 and (22)). As noted by Laca (2006: 451), it typically occurs with certain verbal lexemes such as those given in the examples from Fernando de Rojas' *Celestina* (1499) and Miguel de Cervantes' *Don Quijote* (1605, 1615) in (22).

(22) a. *que preced-e* ***a*** *lo corporal*
that precede-3SG to the physical
'that it precedes the physical things' (*Celestina*, VI. 178, apud Laca 2006: 451)

b. ***a*** *los* […] *clar-o-s sol-es, nublad-o-s scur-o-s* […]
to the bright-M-PL sun-PL, cloudy-M-PL dark-M-PL
ve-mos suced-er
see-1PL follow-INF
'we see that bright sunlight is followed by dark clouds' (*Celestina*, VIII. 215, apud Laca 2006: 451)

c. *La noche que sigu-ió* ***al*** *día del rencuentro de la Muerte.*
the night that follow-3SG.PST to.the day of.the reunion of the death
'The night that followed the day with the reunion with death.' (*Quijote*, 752, apud Laca 2006: 451)

d. *Y* ***a*** *ést-a-s llam-as señales de salud.*
and to this-F-PL call-2SG signs of health
'And you call those signs of health.' (*Celestina*, VI. 178, apud Laca 2006: 451)

e. *la voluntad* ***a*** *la razón no obedece*
the will to the reason NEG obey-2SG
'will does not obey reason' (*Celestina*, I. 9, apud Laca 2006: 452)

Interestingly, most of these verbs correspond to the same verb classes that are also relevant for Modern Spanish: While the examples in (22a)–(22c) contain the sequencing verbs *preceder* 'to precede', *suceder* 'to succeed' and *seguir* 'to follow', (22d) shows a double object construction with the verb of naming *llamar* 'to call'. Besides, verbs having a strong preference for (agent-like) human objects such as *obedecer* 'to obey' (22e) also seem to allow for object marking with inanimates. In order to evaluate the diachronic influence of these verb classes and the impact of agentivity on DOM more thoroughly, further research is needed.

As a first step towards this research task, I carried out a test corpus analysis for the sequencing verbs *preceder* 'to precede' and *seguir* 'to follow'. On the basis of the *Corpus*

del Español, I have checked data from the 13th to the 20th century. For each century, I have analyzed the first 100 tokens with *preceder* and *seguir*, respectively. Data containing animate objects as well as cliticized objects were excluded. As a consequence, only about 20 relevant tokens per verb and century could be evaluated. The results of the corpus analysis are shown in Table 9 and the simplified representation in Figure 4.[10]

Table 9: Distribution of DOM with inanimate objects depending on *preceder* 'precede' and *seguir* 'follow' (Corpus del Español)

	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX
preceder	100% (1/1)	——	85% (11/13)	77% (20/26)	88% (7/8)	92% (22/24)	94% (29/31)	98% (39/40)
seguir	29% (6/21)	6% (1/17)	5% (1/22)	10% (3/30)	6% (2/34)	19% (6/32)	22% (4/18)	13% (3/23)

Figure 4: Percentages of *a*-marking with inanimate objects depending on *preceder* 'to precede' and *seguir* 'to follow' (Corpus del Español)

Table 9 and Figure 4 allow for the following observations: Firstly, in combination with the sequencing verbs *preceder* 'to precede' and *seguir* 'to follow', *a*-marking of inanimate objects is already attested in the 13th century. Since then, the frequency of DOM with these verbs has remained quite stable. Note that although *a*-marking shows a minimal

[10] In contrast to Table 9, Figure 4 does not include the findings for the 14th century. In this century, only data with *seguir* 'to follow' but no relevant tokens with the verb *preceder* 'to precede' were found.

increase from the 18th century onwards, the highest percentages of DOM with both verbs are documented in the 13th century. This suggests that there have not been any significant changes, neither for DOM in combination with *preceder* 'to precede' nor with *seguir* 'to follow'. Secondly, the verbs obviously have a very different affinity for DOM over time. While *a*-marking with *preceder* is highly frequent, ranging between 77% and 100%, with *seguir* it is rather rare. With this verb, the percentages of inanimate objects with *a*-marking only range between 5% and 29%.

A closer look at the data reveals that the different diachronic behavior of these verbs is due to the same role-semantic reasons as in Modern Spanish. The verb *preceder* is nearly exclusively documented with a reversible meaning in the sense of 'x comes before y', as in (23a). Only twice is it found within a non-reversible predication, as in (23b). Here, it is not restricted to the denotation of a mere sequencing event, but rather used in the sense of 'to guide' or 'to determine', thus expressing a causation between the subject and the object participant (cf. Delbecque 2002: 92–93 for similar meaning variations of *preceder* in Modern Spanish).

(23) a. *El matrimonio* […] *preced-e* ***a**los otr-o-s sacramento-s.*
the marriage precede-3SG to.the other-M-PL sacrament-PL
'Marriage precedes the other sacraments.' (13th century, Alf. X., *Siete partidas*)

b. *la certeza y seguiridad* […] *deb-e preced-er su ejercicio*
the certainty and confidence must-3SG precede-INF 3SG.POSS practice
'certainty and confidence must guide his practice' (16th century, Solórzano Pereira, *Política indiana*)

Contrary to *preceder*, the verb *seguir* is only rarely attested with a reversible predication in the sense of 'x comes after y', as in (24a). It is used much more frequently with a non-reversible meaning such as 'to continue', illustrated in (24b).

(24) a. *sigu-e* ***a**la primer-a faz de Aries*
follow-3SG to.the first-F phase of Aries
'it follows/comes after the first phase of Aries' (13th century, Alf. X., *Judizios de las estrellas*)

b. *non quis-o ssegu-ir el pleito*
NEG want.PST-3SG follow-INF the lawsuit
'he did not want to continue the lawsuit' (13th century, Alf. X., *Espéculo*)

As shown in (23) and (24), inanimate objects of reversible relations are regularly marked with *a*, both in combination with *preceder* and *seguir* while those found in non-reversible predications, which are much more common with *seguir*, lack *a*-marking. These observations suggest that it is not the verb *per se* that triggers DOM through time but rather the agentivity of the direct object that follows from the more or less frequently

attested reversible meanings of the investigated verbs. This claim is supported by the synchronic distribution of DOM found with most of the other DOM-sensitive verb classes mentioned in (19). A case in point are the verbs of replacement *sustituir* 'to substitute' and *reemplazar* 'to replace': Similar to *seguir* 'to follow', both *sustituir* and *reemplazar* have a reversible meaning ('x takes the place of y') and a non-reversible meaning ('x substitutes/replaces y (with z)'), whereby the reversible variant patterns systematically with DOM and the non-reversible patterns with the absence of object marking (cf. Weissenrieder 1985: 395–396; García García 2014: 149–154). However, so far, these verbs have only been examined in Modern Spanish.

In order to obtain a more detailed picture of the diachronic impact of agentivity on DOM, the diachronic test corpus study undertaken for *preceder* 'to precede' and *seguir* 'to follow' must be complemented by empirical analyses considering all the other DOM-sensitive verb classes mentioned in (19), in particular by verbs of replacement (e.g. *reemplazar* 'to replace'), verbs of attribution (e.g. *caracterizar* 'to characterize') and verbs of competition (e.g. *vencer* 'to win').

4.4 *Accusativus-cum-infinitivo*-constructions (AcI)

This section deals with AcI-constructions with causative and perception verbs. Thus, it does not consider a proper verbal but a constructional parameter. As we will see, AcI-constructions also seem to underpin the (diachronic) influence of agentivity on DOM. Let us reconsider the diachronic development of DOM with human indefinite objects reported in §3.2. As illustrated in Table 2 and Figure 1, the expansion of *a*-marking with this subset of objects shows a striking irregularity. While there are 40% (21/53) of *a*-marked objects in the 17th century and 41% (12/29) in the 19th century, the greatest percentage of *a*-marking with indefinite human objects is found in the 18th century, showing a remarkable peak of 63% (20/32). As noted by Laca (2006: 460), the relatively high percentage of *a*-marked objects found in this century is due to the disproportionately high number of causative constructions attested in one of the corresponding text samples, namely the *Documentos lingüísticos de la Nueva España*. In this text sample, 9 out of 12 of the *a*-marked indefinite human objects contain a causative construction such as the one given in (25).

(25) *hiz-o* *parec-er* *ante* *sí* ***a*** *un* *yndio* *que* […]
make.PST-3SG appear-INF before REFL to an Indian who
dij-o *llamarse* *Pedro* *Martín*
say.PST-3SG to.be.called Pedro Martín
'He summoned to him an Indian who said that he was called Pedro Martín.'
(*DLNE*, 1733, 189.487, apud Laca 2006: 460)

The affinity of AcI-constructions for DOM is not only evidenced by constructions with causative verbs, but also by those with perception verbs. Although DOM is probably less frequent with the latter type of AcI-construction than with the causative type (cf.

Roegiest 2003: 316–317), it is still very common to also use the object marker in AcI-constructions with perception verbs, at least in Modern Spanish:

(26) *Se* *o-yó* *maull-ar* ***a*** *un* *gato.*
REFL hear-3SG.PST meow-INF to a cat
'We heard the meowing of a cat.' (Corrales Egea, apud Roegiest 1979: 50)

The question here is why AcI-constructions show such a striking preference for DOM. One can assume that this is due to agentivity, i.e. to the semi-agentive status of the object participant. As argued by Roegiest (1979: 50), the direct object of the matrix verb is concurrently the "subject" of the infinitival verb, whereby the latter relation involves an "activation" of the object, that is, an agentive interpretation of the corresponding participant. Within the Proto-Role model, it can be specified that the second participant of an AcI-construction shows both proto-agent and proto-patient properties (cf. Primus 1999b: 161–162). This is particularly obvious with respect to (26). Whereas the first argument of the perception event denoted by *oír* 'to hear' has the Proto-Agent property *experience*, the second argument, i.e. the indefinite non-human NP *un gato* 'a cat', is not only characterized by the converse Proto-Patient property of *being experienced*, i.e. of being perceived, but also by the Proto-Agent property *move*, entailed by the infinitival verb *maullar* 'to meow'. Note that the Proto-Agent property *move* is associated with any form of autonomous physical activity (cf. Primus 2006: 55).

The close connection between the direct object's agentivity and DOM is also corroborated by Enghels's (2007: 241–273) fine-grained study on AcI-constructions with perception verbs in Modern Spanish (cf. also Torrego Salcedo 1999: 1792). Enghels differentiates between different factors that determine the agentivity degree of the direct object, i.e. of the second argument of an AcI-construction, such as (i) the modality of the perception verb (visual vs. auditory), (ii) the animacy of the second argument (human, animate, inanimate etc.) and (iii) the semantics of the infinitival verb (transitive, unergative, unaccusative). With respect to the latter factor, it is assumed that AcI-constructions embedding predicates that are transitive, such as *matar* 'to kill', presuppose a high agentivity degree of the second argument, while AcI-constructions embedding unergative verbs such as *reír* 'to laugh' and those having unaccusative verbs such as *morir* 'to die' imply a respectively lower agentivity degree of the second argument. Enghels' (2007: 241–273) findings reveal that the more the mentioned factors indicate an agentive interpretation of the direct object argument, the greater the probability for *a*-marking. Though the modality of the perception verb (visual vs. auditory) and the animacy of the second argument are the most relevant factors, there is also a clear and independent effect with respect to the semantics of the infinitival verb (cf. Table 10).

Table 10 represents the influence of the embedded infinitival predicate on DOM in AcI-constructions with human direct objects. As can be observed, *a*-marking is noticeably more frequent with transitive verbs (98.6%) than with intransitive verbs, especially in comparison with unaccusative verbs (71.1%), that is, with those predicates presupposing the lowest agentivity degree of the direct object.

Table 10: Distribution of DOM with human objects in AcI-constructions depending on the semantics of the infinitival predicate (adapted from Enghels 2007: 268)

infinitival predicate	DO		a DO	
transitive	1.4%	(5/369)	98.6%	(364/369)
unergative	4.5%	(17/308)	94.5%	(291/308
unaccusative	28.9%	(123/425)	71.1%	(302/425)

5 Conclusion

In Spanish, DOM is diachronically triggered not only by nominal, but also verbal parameters. The general picture that emerges from the current research on nominal parameters (animacy and definiteness) is that DOM is a remarkably stable system. Although there has clearly been an evolution of DOM from Old to Modern Spanish, this development is basically restricted to human definite and indefinite objects (cf. Table 4). Other NP types do not seem to have undergone any remarkable changes. This applies in particular to the category of inanimates: The *a*-marking of inanimate direct objects was and still is a scarcely attested phenomenon (cf. Figure 2). Thus, there is no clear support for the hypothesis that the *a*-marker is grammaticalizing into a proper accusative case marker and, consequently, that Spanish is changing from a language with DOM to a language without DOM. Nevertheless, it would be wrong to conclude that DOM in Spanish is essentially driven by humanness.

The discussion of verbal parameters has revealed that the occurrence of DOM through time is also influenced by agentivity, affectedness and, in some rather inconsistent way, also by aspect. As for agentivity, the test corpus analysis of *preceder* 'to precede' and *seguir* 'to follow' (13th–20th century) has shown that agentive objects require *a*-marking even when the referent is inanimate. Thus, in both Modern and Old Spanish, agentivity overrides the strong DOM condition of humanness. Further evidence for the relevance of agentivity is provided by the unexpected preference for DOM with verbs such as *temer* 'to fear' (cf. von Heusinger & Kaiser 2011: 613), as well as by AcI-constructions, which also show a clear preference for DOM, at least from the 18th century on. In these constructions the direct object not only functions as a patient, but also as an agent argument.

Note that the conclusion that DOM is diachronically conditioned by both the object's humanness and the object's agentivity is no contradiction. On the contrary, humanness can be taken as an inherent nominal feature that encodes a very typical, though not necessary, property of an agent. As pointed out by Delbecque (1998: 398) and Primus (2012: 78–79), among others, human direct objects can be conceived of as potential agents.

The interaction of nominal and verbal parameters, though, remains challenging. As has been shown, diachronic DOM also depends on affectedness and, to some extent, on telicity. However, these factors only seem to be relevant with respect to human objects. While there are some telic predicates involving a highly affected object that have lexical-

ized the *a*-marker, such as *matar* 'to kill' and *insultar* 'to insult', it must be emphasized that these verbs only accept human or at least animate objects. If we only consider inanimate objects, telicity has a rather negative influence on diachronic DOM (cf. Table 6). Besides, we also find atelic verbs selecting a non-affected object such as *preceder* 'to precede' and *suceder* 'to succeed' that seem to have lexicalized DOM, too. This leads to the puzzling conclusion that, in terms of Hopper & Thompson (1980), DOM in Spanish is driven by both extremely high and extremely low transitivity (cf. also Fábregas 2013: 67). Obligatory *a*-marking is not only found with human, strongly affected objects involved in a telic event, but also with inanimate, non-affected and agentive objects embedded in a stative event.

In order to understand these contrary facts, more research on the interaction of nominal and verbal parameters is needed. In particular, systematic analyses of agentivity, affectedness and telicity that are independent of animacy are necessary.

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References

Aissen, Judith. 2003. Differential object marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21(3). 435–483.

Barraza Carbajal, Georgina. 2003. *Evolución del objeto directo inanimado en español.* Mexico City: Universidad Nacional Autónoma de México dissertation.

Barraza Carbajal, Georgina. 2008. Marcación preposicional de objeto directo inanimado. In *Actas del VII Congreso Internacional de Historia de la Lengua Española: Merida (Yucatán), 4–8 septiembre de 2006*, 341–352. Madrid: Arco Libros.

Bickel, Balthasar, Alena Witzlack-Makarevich & Taras Zakharko. 2015. Typological evidence against universal effects of referential scales on case alignment. In Ina Bornkessel-Schlesewsky, Andrej L. Malchukov & Marc Richards (eds.), *Scales*, 7–43. Berlin: de Gruyter Mouton.

Bossong, Georg. 1984. Review of Francisco Villar. Ergatividad, acusatividad y género en la familia lingüística indoeuropea. Theses et Studia Philologica Salmanticensia 21. Salamanca. 1938. *Lingua* 62(3). 239–247.

Bossong, Georg. 1991. Differential object marking in Romance and beyond. In Dieter Wanner & Douglas A. Kibbee (eds.), *New analyses in Romance linguistics. Selected papers from the XVIII Linguistic Symposium on Romance Languages, Urbana-Champaign, April 7–9, 1988*, 143–170. Amsterdam: John Benjamins.

Bossong, Georg. 1998. Le marquage différentiel de l'objet dans les langues d'Europe. In Jack Feuillet (ed.), *Actance et valence dans les langues de l'Europe*, 193–258. Berlin: De Gruyter Mouton.

Buyse, Kris. 1998. The Spanish prepositional accusative. What grammars say versus what corpora tell us about it. *Leuvense Bijdragen* 87. 371–385.

Company Company, Concepción. 2002a. El avance diacrónico de la marcación preposi-tiva en objetos directos inanimados. In Alberto Bernabé, José Antonio Berenguer, Margarita Cantarero & José Carlos de Torres (eds.), *Presente y futuro de la lingüística en España. La Sociedad de Lingüística 30 años después*, 146–154. Madrid: Consejo Superior de Investigaciones Científicas.

Company Company, Concepción. 2002b. Grammaticalization and category weakness. In Ilse Wischer & Gabriele Diewald (eds.), *New reflections on grammaticalization*, 201–215. Amsterdam: John Benjamins.

Dalrymple, Mary & Irina Nikolaeva. 2011. *Objects and information structure*. Cambridge: Cambridge University Press.

de Swart, Peter. 2007. *Cross-linguistic variation in object marking*. Nijmegen: Radboud University Nijmegen dissertation.

Delbecque, Nicole. 1998. Why Spanish has two transitive construction frames. *Leuvense Bijdragen* 87. 387–514.

Delbecque, Nicole. 2002. A construction grammar approach to transitivity in Spanish. In Kristine Davidse & Béatrice Lamiroy (eds.), *The nominative & accusative and their counterparts*, 81–130. Amsterdam: John Benjamins.

Delille, Karl Heinz. 1970. *Die geschichtliche Entwicklung des präpositionalen Akkusativs im Portugiesischen*. Bonn: Romanisches Seminar der Universität Bonn.

Dowty, David R. 1991. Thematic proto-roles and argument selection. *Language* 61(3). 547–619.

Enghels, Renata. 2007. *Les modalités de perception visuelle et auditive. Différences conceptuelles et répercussions sémantico-syntaxiques en espagnol et en franşais*. Tübingen: Niemeyer.

Fábregas, Antonio. 2013. Differential object marking in Spanish: State of the art. *Borealis* 2. 1–80.

García García, Marco. 2007. Differential object marking with inanimate objects. In *Proceedings of the workshop "Definiteness, specificity and animacy in Ibero-Romance languages"*, 63–84. Universität Konstanz: Fachbereich Sprachwissenschaft (Arbeitspapier 122).

García García, Marco. 2014. *Differentielle Objektmarkierung bei unbelebten Objekten im Spanischen*. Berlin: De Gruyter Mouton.

García, Érica C. 1993. Syntactic diffusion and the irreversibility of linguistic change: Personal *a* in Old Spanish. In Jürgen Schmidt-Radefeldt & Andreas Harder (eds.), *Sprachwandel und Sprachgeschichte, Festschrift für Helmut Lüdtke zum 65. Geburtstag*, 33–50. Tübingen: Narr.

Haspelmath, Martin. 2014. Descriptive scales versus comparative scales. In Ina Bornkessel-Schlesewsky, Andrej L. Malchukov & Marc Richards (eds.), *Scales and hierarchies. A cross-disciplinary perspective*, 45–58. Berlin: de Gruyter Mouton.

Hopper, Paul J. & Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56(2). 251–299.

Iemmolo, Giorgio. n.d. Differential object marking. University of Zurich.
Kirsner, Robert S. & Sandra A. Thompson. 1976. The role of pragmatic inference in semantics: A study of sensory verb complements in English. *Glossa* 10. 200–240.
Laca, Brenda. 1995. Sobre el uso del acusativo preposicional en español. In C. Pensado (ed.), *El complemento directo preposicional*, 61–91. Madrid: Visor Libros.
Laca, Brenda. 2002. Gramaticalización y variabilidad: Propiedades inherentes y factores contextuales en la evolución del acusativo preposicional en español. In Andreas Wesch, Waltraud Weidenbusch, Rolf Kailuweit & Brenda Laca (eds.), *Sprachgeschichte als Varietätengeschichte. Historia de las variedades lingüística*, 195–203. Tübingen: Stauffenburg.
Laca, Brenda. 2006. El objeto directo. La marcación preposicional. In Concepción Company Company (ed.), *Sintaxis historica del español. Primera parte: La frase verbal*, vol. 1, 423–475. Mexico: Universidad Nacional Autónoma de México.
Leonetti, Manuel. 2004. Specificity and differential object marking in Spanish. *Catalan Journal of Linguistics* 3. 75–114.
Melis, Chantal. 1995. El objeto directo personal en El Cantar de Mio Cid. Estudio sintáctico-pragmático. In Carmen Pensado (ed.), *El complemento directo preposicional*, 133–163. Madrid: Visor Libros.
Ortiz Ciscomani, Rosa María. 2005. Los objetos concurrentes y la bitransitividad en el español en perspectiva diacrónica. In David Eddington (ed.), *Selected Proceedings of the 7th Hispanic Linguistics Symposium*, 192–202. Somerville, Massachusetts: Cascadilla Proceedings Project.
Ortiz Ciscomani, Rosa María. 2011. *Construcciones bitransitivas en la historia*. México: Universidad Nacional Autónoma de México, lnstituto de Investigaciones Filoloógicas.
Pensado, Carmen. 1995. La creación del complemento directo preposicional y la flexión de los pronombres personales en las lenguas románicas. In Carmen Pensado (ed.), *El complemento directo preposicional*, 179–233. Madrid: Visor Libros.
Pottier, Bernard. 1968. L'emploi de la préposition a devant l'objet en espagnol. *Bulletin de la Société de Linguistique* 1. 83–95.
Primus, Beatrice. 1999a. *Cases and thematic roles. Ergative, accusative and active*. Tübingen: Niemeyer.
Primus, Beatrice. 1999b. Rektionsprinzipien. In Heide Wegener (ed.), *Deutsch – kontrastiv. Typologisch vergleichende Untersuchungen zur deutschen Grammatik*, 135–170. Tübingen: Stauffenberg.
Primus, Beatrice. 2006. Hierarchy mismatches and the dimensions of role semantics. In Ina Bornkessel, Matthias Schlesewsky, Bernard Comrie & Angela D. Friederici (eds.), *Semantic role universals and argument linking. Theoretical, typological and psycholinguistic perspectives*, 53–88. Berlin: Mouton de Gruyter.
Primus, Beatrice. 2012. Animacy, generalized semantic roles, and differential object marking. In Monique Lamers & Peter de Swart (eds.), *Case, word order and prominence: Interacting cues in language production and comprehension*, 65–90. Dordrecht: Springer.
Real Academia Española. 2010. *Nueva gramática de la lengua española*. Madrid: Espasa-Calpe.

Roegiest, Eugeen. 1979. A propos de l'accusatif prépositionnel dans quelques langues romanes. *Vox Romanica* 38. 37–54.

Roegiest, Eugeen. 2003. Argument structure of perception verbs and actance variation of the Spanish direct object. In Giuliana Fiorentino (ed.), *Romance objects. Transitivity in Romance languages*, 299–322. Berlin: De Gruyter Mouton.

Silverstein, Michael. 1976. Hierarchy of features and ergativity. In R. M. W. Dixon (ed.), *Grammatical categories in Australian languages*, 112–171. Atlantic Highlands, NJ: Humanities Press.

Sinnemäki, Kaius. 2014. A typological perspective on Differential Object Marking. *Linguistics* 52(2). 281–313.

Spitzer, Leo. 1928. Rum. P(r)e, span. *á* vor persönlichem Akkusativobjekt. *Zeitschrift für romanische Philologie* 48. 423–432.

Tippets, Ian. 2011. Differential object marking: Quantitative evidence for underlying hierarchical constraints across Spanish dialects. In Luis A. Ortiz-López (ed.), *Selected proceedings of the 13th Hispanic Linguistics Symposium*, 107–117. Somerville, MA: Cascadilla Proceedings Project.

Torrego Salcedo, Esther. 1999. El complemento directo preposicional. In Ignacio Bosque & Violeta Demonte (eds.), *Gramática descriptiva de la lengua española. Las construcciones sintácticas fundamentales. Relaciones temporales, aceptuales y modales*, vol. 2, 1779–1805. Madrid: Espasa Calpe.

Tsunoda, Tasaku. 1985. Remarks on transitivity. *Journal of Linguistics* 21(2). 385–396.

Vendler, Zeno. 1957. Verbs and times. *The Philosophical Review* 66(2). 143–160.

Villar, Francisco. 1983. *Ergatividad, acusatividad y género en la familia lingüística indoeurope*. Salamanca: Ediciones Universidad de Salamanca.

von Heusinger, Klaus. 2008. Verbal semantics and the diachronic development of DOM in Spanish. *Probus* 20. 1–31.

von Heusinger, Klaus. 2018. The diachronic development of Differential Object Marking in Spanish ditransitive constructions. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *The diachronic typology of differential argument marking*, 315–344. Berlin: Language Science Press. DOI:10.5281/zenodo.1228263

von Heusinger, Klaus & Georg A. Kaiser. 2005. The evolution of differential object marking in Spanish. In Klaus von Heusinger, Georg A. Kaiser & Elisabeth Stark (eds.), *Proceedings of the Workshop "Specificity and the Evolution/Emergence of Nominal Determination Systems in Romance"*, 33–69. Universität Konstanz: Fachbereich Sprachwissenschaft (Arbeitspapier 119).

von Heusinger, Klaus & Georg A. Kaiser. 2011. Affectedness and differential object marking in Spanish. *Morphology* 21. 593–617.

Weissenrieder, Maureen. 1985. Exceptional uses of the accusative *a*. *Hispania* 68(2). 393–398.

Weissenrieder, Maureen. 1991. A functional approach to the accusative *A*. *Hispania* 74(1). 146–156.

Witzlack-Makarevich, Alena & Ilja A. Seržant. 2018. Differential argument marking: Patterns of variation. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *Di-*

achrony of differential argument marking, 1–40. Berlin: Language Science Press. DOI:10.5281/zenodo.1228243

Chapter 9

Emergence of optional accusative case marking in Khoe languages

William B. McGregor
Aarhus University

A number of languages of the Khoe family – one of three genetic lineages comprising southern African Khoisan – show an accusative marker, typically a postposition which in its elsewhere form has the shape *(-)(ʔ)à*. In all languages for which adequate data is available, this postposition is optional on object NPs, at least in some circumstances. A few proposals have been made for the grammaticalisation of this marker, notably by Kilian-Hatz (2008: 55; 2013: 376–378). However, not only are these proposals specific to the Khwe language, but also they fail to account for the fact that *(-)(ʔ)à* marks the accusative and that it is optional. In this paper I widen the net to the Khoe family as a whole, and consider the synchronic situations for the usage of the marker *(-)(ʔ)à* and its putative cognates in those languages for which pertinent data is available. This is used to motivate a diachronic proposal concerning the grammaticalisation of *(-)(ʔ)à* in the modern languages. Specifically, it is proposed that the accusative marker began life as a presentative copula; this served to index an item, drawing the addressee's attention to it. It later became an optional accusative marker via grammaticalisation processes akin to those outlined in McGregor (2008; 2010; 2013; 2017) for the development of optional ergative case markers in some Australian languages. Thus the grammaticalisation scenario proposed is consistent with pathways of development of other optional case-markers.

1 Introduction

1.1 Aims

This paper is concerned with the grammaticalisation of optional accusative marking in the Khoe languages of southern Africa. I argue that the accusative marker, which generally takes the elsewhere form *(-)(ʔ)à* in Khoe languages, began as a copula in presentative clauses (McGregor 1997: 90–91, 307–310); see also Kilian-Hatz (2008: 55, 2013: 376–377); König (2008: 276) for a similar suggestion. This was also employed to draw attention to certain NPs in verbal clauses, especially unexpected or atypical objects of transitive

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clauses. It subsequently developed into an optional accusative marker in most of the languages. This scenario is supported on the one hand by an examination of the range of synchronic uses of the accusative marker and possible cognates, and on the other by evidence from the grammaticalisation of other optional case markers, in particular optional ergative markers, as discussed in McGregor (2008; 2010; 2013).

The paper is organised as follows. After providing an outline of the lineage, and sources of information on the languages in §1.2, the subsequent two sections set the scene for the grammaticalisation scenario proposed in §4. §2 presents a detailed overview of the uses of the marker *(-)(ʔ)à*, including possibly homophonous and/or cognate morphemes in those Khoe languages for which information is available. Following this, §3 presents a discussion of the motivations that have been proposed for the choice between using and not using the accusative marker on object NPs in a small selection of Khoe languages – for the majority of the languages information on this issue is not available. The paper is wound up in §5 with a brief conclusion.

1.2 The languages and sources of information

Khoe is a branch of the putative Khoe-Kwadi family (Greenberg's Central Khoisan) (Güldemann 2004; Güldemann & Elderkin 2010; Voßen 1997; Vossen 2013c: 10–11), one of three distinct Khoisan lineages found in southern Africa. A tentative tree for Khoe-Kwadi is shown in Figure 1.

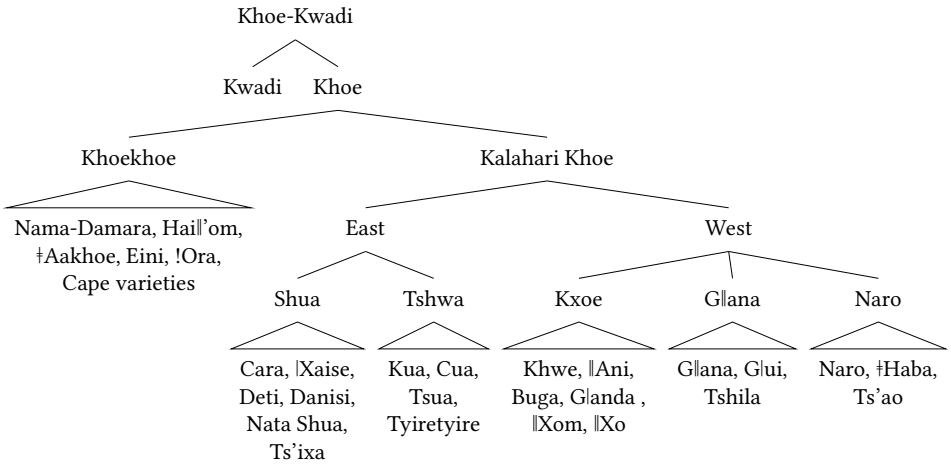

Figure 1: A possible tree for the Khoe-Kwadi lineage (based on Güldemann 2014: 27)

It should be noted, however, that there are a number of uncertainties: not all specialists agree that the evidence convincingly supports Kwadi as a sister of Khoe; the referents of the terms for many varieties are uncertain (e.g. Tyiretyire (Cirecire) and its relation to

Cua); the placement of some varieties is tentative (e.g. of Ts'ixa as a Shua variety); and Khoekhoe is sometimes divided into north and south (e.g. Güldemann & Vossen 2000: 102, cf. Güldemann 2014: 28).

The main languages dealt with in this paper, along with the primary sources of information on them, are listed in Table 1.[1] There is insufficient information on Kwadi to permit its inclusion in this study. Otherwise, all of the Khoe groups and subgroups are represented by at least one language; unfortunately, however, the data available for some subgroups is seriously inadequate.

Table 1: Languages and main sources of data

Group	Language	Main sources
Khoekhoe	Nama-Damara	Hagman (1973)
	!Ora	Haacke (2013b)
East Kalahari Khoe	Nata Shua	Own fieldnotes
	Danisi	Fieldnotes Fehn & McGregor; Vossen (2013a)
	Ts'ixa	Fehn (2014)
	Tyiretyire	Own fieldnotes
West Kalahari Khoe	Khwe	Kilian-Hatz (2008; 2013)
	ǁAni	Heine (1999)
	G|ui	Ono (2011)
	Naro	Visser (2013)

2 The marker(s) *(-)(ʔ)à* in Khoe languages

One or more grammatical markers showing the shape *(-)(ʔ)à* are attested in all Khoe languages that have been sufficiently well described;[2] these are found in languages of all three branches. There are a number of differences in the range of uses of these markers across the languages, as shown in Table 2–Table 4. Note that these tables identify grammatical uses of morphemes with the shape *(-)(ʔ)à*, regardless of whether or not they represent different uses of a single morpheme or distinct morphemes – which in many

[1] In the remainder of the paper the term *Shua* will be used in reference to the variety spoken in Nata. Where reference is made to the set of varieties in the subgroup I will speak of *Shua varieties*.

[2] Sources are inconsistent in representing an initial glottal stop. In some languages two distinct allomorphs exist, one with and one without an initial glottal stop. Various other allomorphs are found in particular languages, including allomorphs with different vowel shapes (usually conditioned by preceding segments) and fused allomorphs (often morphologically conditioned by a preceding person-gender-number marker or pronoun). Discussion of the allomorphy is beyond the scope of the present paper, although it is clearly crucial to a complete and convincing grammaticalisation story.

Table 2: NP role marking functions of morpheme or morphemes *(-)(ʔ)à* (1 (almost) certainly a use of the form in the language: either attested or implied by the description; 0 evidence suggests not a use of the form in the language; — unattested use in the language, though information is insufficient to determine whether it is a possible use.)

Language	Object	Indirect Object	Subject	Topic	Focus	Locative	Genitive
Shua	1	1	0	0	0	1	—
Ts'ixa	1	1	0	0	0	1	—
Tyiretyire	1	1	0	0	—	—	—
Khwe	1	1	1	0	1	1	1
ǁAni	1	1	1	1	—	0	0
Buga	1	1	—	0	—	0	0
Naro	1	1	—	0	—	0	0
G|ui	1	1	—	0	0	0	0
Nama-Damara	1	1	1	0	0	1 (temp)	0
!Ora	1	1	1	—	—	—	—
Hai|om	1	1	1	—	—	—	—

cases is not known for certain.[3,4] Nor has it yet been established that the morphemes are all cognate. Moreover, the listing is incomplete. For expository purposes I have been selective, and excluded those functions (and possibly morphemes) that are irrelevant to the grammaticalisation scenario proposed in this paper. For instance, most Khoe languages have a verbal juncture morpheme, one allomorph of which is *-a* (Vossen 2010). Whether or not this morpheme is cognate with *(-)(ʔ)à*, it plays no role in the grammaticalisation scenario proposed in §4.

Two functions are universally associated with *(-)(ʔ)à* in Khoe languages. First, in every language *(-)(ʔ)à* is attested as a marker of both direct objects and indirect objects. This is illustrated in the Khwe example (1), where the marker is a free postposition, as in other Kalahari Khoe languages. In at least some of these languages there is an allomorph that fuses with a preceding pronoun or person-gender-number (PGN) marker, a portmanteau morph attached to a nominal and encoding its person, grammatical gender and number. For instance, in Shua one finds *Pitama:_ ~ Pita-ma_-ʔa_* (Peter-M-ACC) 'Peter' and *ta¯a_*

[3]For this reason, I adopt the convention of glossing *(-)(ʔ)à* according to its putative function, rather than with a single gloss, except where the evidence indicates that a single morpheme is involved. It should not, of course, be presumed that each gloss corresponds to a different, homophonous morpheme, although it may.

[4]Kilian-Hatz states explicitly that there is a single morpheme *(ʔ)à* in Khwe with the range of senses indicated in Table 2–Table 4 (Kilian-Hatz 2008: 52–53, 2013: 368). Whether or not this proposal is viable remains unclear to me.

Table 3: Other types of NP marking by morpheme(s) *(-)(ʔ)à*

Language	Dislocated NPs	Appositive NP Os	Governed by postposition
Shua	0	—	0
Ts'ixa	0	—	0
Tyiretyire	0	—	0
Khwe	0	1 (attributing)	1
ǁAni	0	—	0
Buga	—	—	—
Naro	—	—	0
Gǀui	1	1 (identifying)	0
Nama-Damara	—	—	1
!Ora	—	—	—
Haiǁom	—	—	—

Table 4: Other uses of morpheme(s) *(-)(ʔ)à*

Language	Relational copula	Presentative copula	Clausal connector	Extraposed elements
Shua	0	0	—	0
Ts'ixa	0	0	—	0
Tyiretyire	0	0	—	0
Khwe	1	1	—	0
ǁAni	1	—	—	0
Buga	—	—	—	—
Naro	0	0	1	—
Gǀui	1	—	—	1
Nama-Damara	1	—	1	—
!Ora	1	1	—	—
Haiǁom	1	—	—	—

~ *ta:¯-ʔa_* (1SG-ACC) 'me'. In Khoekhoe the corresponding marker is a suffix, as shown by the Nama-Damara example (2).[5]

(1) Khwe (West Kalahari Khoe; Kilian-Hatz 2013: 374)
màtìaci-m̀ *à* */'áò* *à* *tí* *xàró-ná-tà*
Matthew-3SG.M ACC money ACC 1SG give-J-PST
'I gave money to Matthew.'

[5]Haacke's (2013b) construal of the morpheme *-à* as an oblique marker seems preferable to Hagman's (1973) construal as a subordinate case marker, and I adopt it in this paper.

(2) Nama-Damara (Khoekhoe; Hagman 1973)

ʔáo-p	*ke*	*tará-s-à*	*péré-p-a*	*kè*	*màa*
man-3SG.M	DECL	woman-3SG.F-OBL	bread-3SG.M-OBL	PST	give

'The man gave the woman bread.'

As example (3a) shows, in Shua the erstwhile beneficiary (an indirect object) in an applicative construction is marked by the ACC *(ʔ)à*; this marking may be retained under passivisation, as shown by (3b).

(3) Shua (East Kalahari Khoe; own fieldnotes)

a.

taa	*ʔa*	*pii*	*tyana-ma*
1SG	ACC	milk	bring-APPL

'Bring me some milk.'

b.

tse:	*ʔa*	*aka*	*k'ohu*	*ng|o:-a-ma-e-ha*
1PL.C	ACC	PST	meat	cook-J-APPL-PASS-PST

'The meat was cooked for us.'

Second, in both Khoekhoe and West Kalahari Khoe *(-)(ʔ)à* is widely attested as a relational copula, that is, as a copula in attributing and/or identifying clauses. Example (4) illustrates this usage in the West Kalahari Khoe language ǁAni.[6] For Nama-Damara Hagman (1973: 114–116, 164) identifies a present tense copula *ʔa* that is used in attributing clauses, as shown by example (5a). He also identifies a suffix *-à* that is used as a marker of the "predicate" in identifying clauses (Hagman 1973: 110), as in example (5b); this also appears to exemplify a copula function (see also Voßen 1997: 174 and Haacke 2013b: 342 for brief remarks on !Ora.)

(4) ǁAni (West Kalahari Khoe; Heine 1999: 24)

kx'oxu	*tshaa-kx'oxu-dzi*	*ʔa*
animal	water-animal-3PL.F	COP

'Water animals are edible [are meat].'

(5) Nama-Damara (Khoekhoe; Hagman 1973: 116)

a.

saá-ts	*ke*	*ʔa*	*káí*
2-2SG.M	DECL	COP	big

'You are big.'

b.

saá-ts	*ke*	*káí-ts-a*
2-2SG.M	DECL	big-2SG.M-COP

'You are the big one.'

Copula usage may also be available in G|ui. Nakagawa (2013: 400) speaks of a linking use of *-à* that incorporates a body part nominal into a complex adjective, as in (6).

[6] Heine (1999) equivocates on the status of this marker as a morpheme distinct from the ACC marker.

(6) G|ui (West Kalahari Khoe; Onо 2011)
ʔàbì *!áĩ̃* *ja* *ǂáó*
3SG.M good COP heart
'He is good in the heart.' i.e. 'He is happy.'

An alternative and more plausible analysis is that *ja* (an allomorph of *à*) does not link the adjective 'good' with the nominal 'heart' into a complex adjective, but rather functions as a clausal copula in an external possession construction of the double subject type. That is to say, in (6) goodness is attributed of the person, and the following body part nominal indicates a restriction of the attribute to the person's heart – they are good in, or with respect to, the heart.

In addition to its use as a relational copula, in Khwe and !Ora *(ʔ)à* can be used as a presentative or existential copula (Tom Güldemann p.c.; Kilian-Hatz 2008: 52), as shown by examples (7a) and (7b).[7]

(7) Khwe (West Kalahari Khoe; Kilian-Hatz 2013: 251)

a. *thíyà* *goava* *à*
many Mbukushu COP
'There are many Mbukushu.'

b. *ǁhaḿ!* *teá* *ǁeí-coava* *à!*
come.near 2SG.M skin-be.rotten COP
'Come near! Here is your rotten skin [i.e. your food]!'

The copula function is not attested in any East Kalahari Khoe language to the best of my knowledge.

Other uses of *(-)(ʔ)à* are rather sporadically distributed across the Khoe languages, at least given the existing evidence. I briefly overview these additional senses.

In addition to marking direct and indirect objects, in Khwe, ǁAni, Nama-Damara and !Ora *(-)(ʔ)à* occurs on subject NPs as well, albeit rarely. In the latter two languages *-à* occurs on what is referred to as a "deposed" subject, that is, a subject that does not occur in its usual clause-initial position, as in example (8). Unfortunately, the descriptions do not make entirely clear either the formal properties of this construction or its meaning and uses (Hagman 1973: 203; Haacke 2013b: 341, 2013a: 328).

(8) Nama-Damara (Khoekhoe; Haacke 2013a: 328)
tsî-b *ge* *axa-b-a* *|ôa-s-a* *tsaurase* *go* *ǂai*
and-3SG.M IND boy-3SG.M-OBL girl-3SG.F-OBL gently PST call
'And then he, the boy, gently called the girl.'

[7] Strictly speaking, this is of course not a copular function in that it does not connect linguistic forms; indeed, it better resembles the index *there* of the English presentative/existential than the copula *be*. However, I follow usual convention and use the term *copula* loosely in this fashion; it is not unreasonable in the sense that what is linked is the addressee's attention and the referent item.

In Nama-Damara *-à* also regularly occurs on subjects of some clauses in marked moods, the interrogative and imperative/hortative (Hagman 1973: 260, 270–271).

In Khwe subjects of both relational and verbal clauses can be followed by *(ʔ)à*, though only when indefinite; for subjects of transitive clauses this marking is extremely rare (Kilian-Hatz 2008: 51–52, 2013: 369–371), slightly more common for intransitive subjects. Kilian-Hatz (2013: 370) considers that in these contexts *(ʔ)à* serves as a focus marker rather than as a subject marker, as in (9).

(9) Khwe (West Kalahari Khoe; Kilian-Hatz 2013: 370)
kúcugucugu *à* *ǁgèvùu-à-tè*
eagle FOC fly-J-PST
'An eagle is flying.'

More generally, Kilian-Hatz considers that the primary NP marking function of *(ʔ)à* in Khwe is to mark focus, regardless of what other grammatical role is simultaneously borne by the NP, whether it be a core grammatical relation or the locative – see especially Kilian-Hatz (2008: 54, 2013: 370, 377). A secondary function is to mark the object; this happens only (in Kilian-Hatz's view) in those circumstances in which the object is obligatorily marked by *(ʔ)à*, namely on proper noun objects and on indirect objects other than specific nouns (see further §3.3 below). Consistent with this, only one NP in a clause is normally marked by *(ʔ)à*. In no other Khoe language has it been suggested that *(-)(ʔ)à* is a general focus marker. By contrast, Heine (1999: 31, 67, 68) suggests that *(ʔ)à* in ǁAni serves as a topic marker, perhaps primarily. He does not, however, explain what he means by "topic" and the examples given could as well be interpreted as invoking focus on the marked NP.

In both Shua and Ts'ixa *(ʔ)à* marks a general locative case, as shown in (10). However, in both languages this form represents a different postposition to the ACC marker: it shows different allomorphy and occurs with a different case form of the PGN markers (Fehn 2014: 202; McGregor 2015).

(10) Ts'ixa (East Kalahari Khoe; Fehn 2014: 202)
kolóí=sí *ǁʔáé=m̀* *ʔà* *téè*
car=SG.F:I village=SG.M:I LOC be.standing
'The car stands in the village.'

In Nama-Damara *-à* occurs on NPs indicating time units, marking temporal duration (Hagman 1973: 112, 199).

In Khwe there is a genitive case suffix *-à* that is used in the expression of part-whole relations within NPs when the whole (modifying) nominal is indefinite (Kilian-Hatz 2008: 77). Examples are *gù-á /'ű̃ũ̃* (sheep-GEN hair) 'sheep's wool', *xúni-a khòó* (crocodile-GEN skin) 'crocodile's skin', and *hémpè-à píì* (shirt-GEN pocket) 'pocket of a shirt'. This is cognate with the postposition *(ʔ)à* according to Kilian-Hatz (2008: 55).

The features identified in Table 3 are mostly language specific, and most are poorly exemplified and described in the sources. The one in the final column, 'Governed by a postposition' is something of an exception, and is attested in both Khwe and Nama-Damara. In Khwe, PPs with postpositions other than *à* – i.e. with local postpositions – pronouns and PGN-marked (i.e. definite) NPs take the postpositions directly while non-PGN-marked (i.e. indefinite or non-specific) NPs are marked by *-à* GEN (Kilian-Hatz 2008: 64), as in example (11).

(11) Khwe (West Kalahari Khoe; Kilian-Hatz 2008: 66)

tíì	*kóánácì*	*ki*	*tcá*	*cà-á*	*ki*	*ǂóé-è-ǂòè*	*nò*	*cé*
then	because	LOC	2SG.M	water-GEN	LOC	lie-ATV-HAB	CON	1PL.F
té-é-ǂòè		*ǂxó*	*dì*	*xóm̀-à*	*ki*			
stay-ATV-HAB		dry	POSS	sand-GEN	LOC			

'Since you are used to lying in the water, and we are used to staying in the dry sand [it is not good to come with us].'

Similarly in Nama-Damara an NP marked by one of the three local postpositions *!'oá* ALL (optionally), *xuú* ABL, or *'úú* PER selects the oblique suffix *-à* following its PGN marker (Hagman 1973: 112, 192–193).

(12) Nama-Damara (Khoekhoe; Hagman 1973: 192–193)

ʔàríp	*ke*	*ʔom-s-à*	*xuú*	*kè*	*pèé*
dog	DECL	house-3SG.F-OBL	ABL	RPST	go:away

'The dog went away from the house.'

In both Khwe and G|ui *(ʔ)à* can occur on an NP in apposition with the object of a clause, as in (13). The examples in Khwe all involve an attributive relation between the second NP and the first; by contrast, in G|ui they involve identification. These restrictions may be simply an artifact of the small number of tokens given in the sources, and none of the sources mention the restriction on the grammatical role of the NP attributed on or identified, although all of the illustrative examples satisfy this condition. I suspect that this usage is more widespread in Khoe languages.

(13) G|ui (West Kalahari Khoe; Ono 2011: 2)

da	*ci*	*nǂoori-xa=na*	*ǁ'ao*	*n|e=na*	*(ʔa)*
1SG.IRR	1SG.GEN	grand:junior-with=PL.C.ACC	insult	DEM=PL.C.ACC	ACC

'Let me insult my grandchildren, these ones.'

In G|ui according to Ono (2011), as shown in Table 3, *(ʔ)à* occurs on dislocated NPs, by which she apparently means NPs set off on their own intonation contour and either preceding or following the remainder of the clause. The free translation for example (14) suggests that these are a type of cleft construction. This is the only example given, and it is not known whether the dislocated NP can bear any role other than object.

(14) G|ui (West Kalahari Khoe; Ono 2011: 2)

ʔa	*ja*	*k|oã-ki=sa*	*(ʔa)*	*tsa*	*g‖ae=si*	*aaku*
DEM	CONJ	child-FOC=SG.F.ACC	IDTF	2SG.M.GEN	WOMAN=SG.F.NOM	come

ʔaba-ø-nǂoẽ
strap-J-sit

'It is the child who your wife is strapping to her back.'

Ono (2011: 2) also says that *(ʔ)à* can be used to mark dislocated clauses. However, just one example is given, and in this example *(ʔ)à* might be interpreted as marking a complement clause.

There are a few attestations of *(-)(ʔ)à* as a clausal connector. In Naro *a* can be used to connect a subordinate clause to a preceding main clause, according to Visser (2001: 1, 2010: 180). In Nama-Damara *-à* can mark an indirect speech report, as in example (15). According to Hagman (1973: 256), the subordinator *-à* is attached to the indirectly quoted clause plus complementiser *!hai*, which forms a single NP syntagm; the analysis provided in Haacke (2013b: 345), although inexplicit, is consistent with this parsing. Note that the *-à* is usually attached to an instance of *!hai-s* (that-3SG.F) in final position in the complement clause; occasionally, however, the connector *!hai* is omitted and the PGN marker is directly connected to the final word of the indirect quote (it is possible that this function is also served by *(ʔ)à* in G|ui.)

(15) Nama-Damara (Khoekhoe; Haacke 2013b: 345)

ots	*kara*	*mû-ba-sen*	*!gam-he*	*khom*	*ra*	*!hai-s-a*
2sg	POT.PROG	see-APPL-REFL	kill-PASS	1DU	PRS.PROG	that-3SG.F-COMP

'Then you may see for yourself that we are killed.'

A use not specifically indicated in the tables above is found in Khwe alone. This use is in possessive NPs, where *(ʔ)à* marks an indefinite possessum – i.e. one that is not marked by a PGN marker (Kilian-Hatz 2008: 70, 73). Kilian-Hatz treats this as an instance of the copular function of *(ʔ)à*. An example is given in (16).

(16) Khwe (West Kalahari Khoe; Kilian-Hatz 2013: 70)

tá-khò-m̀	*dì*	*nǂgóá*	*à*
old-AG-3SG.M	POSS	walking.stick	COP

'the old man's walking stick'

Finally, it should be remarked that in Khoekhoe, with one exception, the morphemes discussed above are suffixes that invariably follow a PGN marker (Hagman 1973: 33–34; Haacke 2013b: 341). Probable cognates of these suffixes are found in the final *à* vowel in one series of PGN markers in most Kalahari Khoe languages, including Shua (McGregor 2014: 49), Tyiretyire (my fieldnotes), Ts'ixa (Fehn 2014: 62–64), |Gui (Nakagawa 1993 cited in Fehn 2014: 315) and possibly in ‖Ani (Heine 1999: 26–28) and Eastern ‖Ani (Fehn 2014: 315).[8] The *à*-series of PGN markers serve a different range of functions in

[8]The situation in Khwe seems to be somewhat different, and Kilian-Hatz (2008: 40–41) does not distinguish a distinct PGN series in *à*; she treats the different forms of the PGN markers in the third person as allomorphs.

each of the languages, but in all languages it is this series that is used on object NPs (Kilian-Hatz 2008: 40–41; McGregor 2014: 49; Fehn 2014: 228, 315). It seems likely that the suffix *-à* and final *à* vowel are both cognate with the free form *(ʔ)à* of Kalahari Khoe languages, the latter having been added via the diachronic process sometimes referred to as "doubling" or "reinforcement". The fact that similar environments of use and patterns of optionality are found in Kalahari Khoe and Khoekhoe languages lends some support to this hypothesis.

3 Optional accusative marking in Khoe languages

As has been shown, in all Khoe languages for which there is sufficient data *(-)(ʔ)à* can mark both direct and indirect objects; Hai‖om is the only language where this use is not mentioned or exemplified in a basic syntactic description (Widlok 2013b).[9] In Kalahari Khoe languages it is a phrase-level marker that occurs in NP final position, normally as a separate word or clitic, though sometimes fused with the final word. In Khoekhoe it appears to be an inflectional suffix.

In almost all Khoe languages *(-)(ʔ)à* is optional as a direct object marker in the sense of McGregor (2010: 1610–1613, 2013: 1152).[10] First, it may be present or absent on a direct object NP without affecting the grammatical role borne by that phrase. There is no reason to believe that the NP serves a different grammatical role when *(-)(ʔ)à* is present/absent, and that in one instance it is not an object; nor (as far as I am aware) has any investigator suggested that it has. Second, the presence or absence of *(-)(ʔ)à* is not predictable from grammatical characteristics of the clause in which it occurs. Both conditions appear to obtain in all East and West Kalahari Khoe languages, and in Khoekhoe at least in !Ora (Haacke 2013b: 341). Nama-Damara is a probable exception. According to Haacke (2013b: 341) *-à* is consistently used on object NPs, in contrast with !Ora. Hagman (1973) makes no reference to the optionality of this marker, and, given that he discusses optionality of a range of other morphemes, his description implicates that it is obligatorily used. One context in which *-à* does not occur on object NPs in Nama-Damara is in relative clauses, where the object NP occurs in final position and effectively serves as a relative clause relator (Hagman 1973: 230–231). Being a grammatically conditioned absence, this does not count as an instance of optionality.[11] However, in certain other environments the marker is perhaps optional, including when preceding the allative postposition and on indirect speech complement clauses (see discussion of example (15) above).

[9] It seems likely that the uses of *-à* in Hai‖om are comparable with those of the cognate morpheme in Nama-Damara and !Ora. Widlok (2013a: 158) indicates that there is an oblique suffix *-a* that attaches to the PGN marker of an NP. Although its usage is not discussed in Widlok (2013a), it presumably marks objects (both direct and indirect) and subjects as in the other two Khoekhoe languages.

[10] This phenomenon has also been referred to as "differential object marking" (DOM). I have suggested, however, that this term as generally used covers a disparate range of phenomena which need to be distinguished (e.g. McGregor 2010: 1613). In particular, the situation in which a single morpheme may be present or absent on an object NP must be distinguished from the situation in which an object NP can be marked by two different morphemes.

[11] It does however fall within the range of phenomena commonly dubbed DOM (see previous footnote), what the editors refer to in the introductory chapter as "clause-type-based differential marking".

The situation for the marking of indirect objects in Khoe languages seems rather different, at least in those languages for which information is available. On indirect object NPs – which are prototypically human – *(-)(ʔ)à* usually appears. This is the case in Khwe (Kilian-Hatz 2008: 51, 56, 63), as in example (17), Shua (my own fieldnotes), and Ts'ixa (where in the majority of examples cited in Fehn 2014 are marked either by the ACC or the DAT postposition; few are unmarked). In the remainder of this section I focus on the marking of direct objects, excluding indirect objects from the exposition.

(17) Khwe (West Kalahari Khoe; Kilian-Hatz 2008: 63)

màtìaci-m̀	*à*	*l'áò*	*à*	*tí*	*xàró-á-tà*
Matthew-3SG.M	ACC	money	ACC	1SG	give-J-NPST

'I gave money to Matthew.'

Existing accounts say little about the motivations for use vs. non-use of *(-)(ʔ)à* on direct object NPs. Indeed, a number are silent on the issue, as in the brief treatments of Danisi, Deti, Cara and Kua morphology and syntax in Vossen (2013b). One has to examine the examples given in the papers to discover that the marker is not always present on object NPs.

I would argue that the usage-based theory of optional case marking elaborated in e.g. McGregor (2010; 2013) accounts for the optional accusative in Khoe languages. In what follows I provide a brief overview of the main features of this theory; see McGregor (2006; 2010; 2013) for more detailed discussion.

Two fundamental assumptions of the theory are: (a) within particular constructions case-markers index specific grammatical relations; and (b) either use and/or non-use of an optional case-marker can potentially encode a meaning (again within the specified construction). The first assumption would seem to be uncontroversial, and is assumed by most grammarians: for instance, in a transitive construction (with only the inherent grammatical roles), a case-marker such as the accusative will mark a particular role, namely the object. The second assumption is perhaps more controversial. It applies specifically to optional case-markers and asserts that a meaning may be coded by using and/or not using the case-marker in the environment of its optionality. These assumptions imply that there are two possible loci of meaning: the case-marking morphemes themselves and their usage or non-usage.

A case-marker indexes the grammatical role(s) that it marks; this is its meaning. As a consequence, it indirectly and symbolically conveys the meaning associated with that grammatical role – where I presume, along with various functionally oriented theories, that grammatical categories, including roles such as subject and object, are meaningful (e.g. Haas 1954; Halliday 1985: 30–32; Langacker 1987: 275, 316, 1991: 289; Shaumyan 1987: 27; McGregor 1997: 2).

The meanings associated with use or non-use of an optional case-marker do not, by definition, concern grammatical relations; rather, they relate to the domain of joint attention, to the integration of information into the joint-attentional frame (Tomasello & Farrar 1986; Tomasello 2003). My proposal is that use of an optional case-marker can

serve to accord particular attention to the marked grammatical role or its filler, singling it out as the centre of attention – in other words, highlighting it (McGregor 2013: 1157). By contrast, non-use of an optional case-marker may serve a backgrounding function, shifting the role or its filler outside of the domain of the joint-attentional frame, assigning it to the domain of what is presumed by the speech interactants, to the common ground at that point in the speech interaction. The point of the modal qualifications of the previous two sentences is that if a meaning is conveyed – i.e. coded – by use or non-use of a marker it will be of the type specified; it is also possible that no meaning is conveyed by either or both.

It is convenient for descriptive and comparative purposes to assign feature labels to the two possible meanings, [prominent] and [backgrounded], and to allow them to take values + (specifying that the feature is coded and thus marked), and – (the unmarked value of the feature, where it is not coded and no meaning of the specified type is conveyed). There are thus four coding possibilities for use or non-use of an optional case marker, as shown in Table 5.

Table 5: Meanings potentially coded by presence and absence of an optional marker

Use	No meaning [–prominent]	Meaning [+prominent]	No meaning [–prominent]	Meaning [+prominent]
Non-use	No meaning [–backgrounded]	No meaning [–backgrounded]	Meaning [+backgrounded]	Meaning [+backgrounded]

The two features [prominent] and [backgrounded] correlate with expectedness in the grammatical role: prominence is naturally assigned to something that is unexpected, while it is natural for something completely expected to be backgrounded. These features are intended to capture the commonality in the cross-linguistic diversity in the actual meanings associated with usage and/or non-usage. They contextualise in a range of different ways in different languages and constructions, depending in part on how the notion of expectedness is construed, on what sense of (un)expectedness is associated with prominence and/or backgrounding. For instance, among other possibilities, it may concern the prototypical likelihood of the referent of a particular type in that role; it may concern the likelihood of the particular referent in the role in the specific token; it may concern the identity of the filler of the object role.

For just three Khoe languages is some discussion of motivations for optional accusative case-marking available: Shua (McGregor 2015), Ts'ixa (Fehn 2014) and Khwe (Kilian-Hatz 2008; 2013). These are overviewed in the following three subsections, respectively. For the other languages little can be said given the absence of discussion in the sources and the paucity of examples – though the ǁAni texts in Heine (1999) are probably quantitatively sufficient to warrant examination.

3.1 Shua (East Kalahari Khoe)

In Nata Shua the frequency of use of the ACC marker *(ʔ)à* differs according to the position of the object NP on an animacy scale (McGregor 2015): on personal pronouns (i.e. pronouns other than the 3SG.C 'it') and personal names the ACC is (almost) obligatory; on PGN-marked lexical NPs it is quite common, though not obligatory; on ordinary lexical human NPs unmarked by a PGN marker it is relatively infrequent; on lower-order animate NPs and inanimates it is rare; on mass inanimates the ACC marker is not attested. Frequency of use of the optional marker in specified environments is indicative of semantic markedness in the respective contexts, as per Levinson's I and M heuristics (Levinson 2000) and the observation that the two types of markedness often correlate. McGregor (2015) proposes that in Shua use and/or non-use of the ACC serves to either make the direct object prominent or to background it, depending on the animacy of the direct object NP, as shown in Table 6, where grey background indicates uncertainty due to paucity of examples.

Table 6: Meanings of presence vs. absence of ACC on different NP types in Shua

NP type	ACC marker present	ACC marker absent
Personal pronouns	No meaning	Direct object backgrounded
Personal names	No meaning	Direct object backgrounded
PGN-marked NP	Direct object prominent or no meaning	Direct object backgrounded
Other human NP	Direct object prominent	No meaning
Non-human animate & inanimate	Direct object prominent	No meaning

For personal pronouns and names ACC marking is (almost) always present, and thus is unlikely to convey a meaning; by contrast the absence of the ACC marker (if permissible) can be expected to background the object. For PGN-marked NPs the ACC marker is also very frequent and can be expected to convey no meaning; however, if it is absent the direct object is backgrounded. For human NPs of other types the ACC marker is normally absent, and this most likely conveys no meaning; its presence, by contrast, is rather rare, and marks the direct object as prominent. Similarly for non-human animates and inanimates the presence of the ACC marker assigns prominence to the direct object, whilst its absence, the usual situation, conveys no specific meaning – the direct object is neither made prominent nor is it backgrounded.

The present paper is not the place to present arguments for these claims, which are discussed in McGregor (2015). I illustrate here just the claim for NPs of the lowest animacy. For these NPs McGregor (2015) shows that two types of consideration are relevant to the choice of making a direct object prominent. One set of considerations concerns identity, in particular whether or not the referent is expected as the filler of the direct object role in the particular discourse circumstances. This is illustrated by example (18a), which comes from a description of a drawing in the wordless picture book *A boy, a dog, and a frog* (Mayer 1967) in which the boy has netted his dog in a fishing net. The preceding drawings construct a story in which it is expected that the boy will net the frog; the identity of the object referent is thus unexpected. Usually in Shua, as in this example, prominence is assigned by use of the ACC marker when the direct object referent is selected from an already established set of referents, from an established space of potential referents. Less often, it is assigned when the direct object referent contrasts with another potential filler of the role, as in (18b).

(18) Shua (East Kalahari Khoe; own fieldnotes)

a. *aba: ʔa ema ǁam-rekareka*
dog ACC 3SG.M hit-maybe
'Maybe he is hitting the dog.'

b. *ta: aka ke lori ʔa mũ: ta: aka sekuskara ʔa mũ:-ta*
1SG PST IPFV truck ACC see 1SG PST donkey.cart ACC see-NEG
'I saw the truck, not the donkey cart.'

The other set of considerations concerns the degree of patientivity of the direct object referent. Consider (19), which describes an event in which a tent is completely destroyed by hail; it is affected to a higher degree than might be expected – it might be expected that a tent is knocked down, though not necessarily completely wrecked. In this instance the unexpectedly high degree of effect on the tent motivates making the direct object prominent by marking it with the ACC postposition (identity considerations are irrelevant in this instance.) Other descriptions of similar events in which the tent is not so heavily affected by the event (not torn to shreds), or in which it is just rain that did the job, did not employ ACC marking on the object NP.[12]

(19) Shua (East Kalahari Khoe; own fieldnotes)
hẽ:xo: ʔa tu:-a-ta tu: ka:ro ka tante ʔa bo:ru-hu-a-ha
this LOC rain-J-PST rain hail INS tent ACC hole-CAUS-J-PST
'The rain that rained here with hail tore the tent to shreds.'

[12]Note that it is not suggested that the absence of the ACC marker indicates a lower degree of effect on the direct object, only that it is consistent with lower affectedness of that entity. Absence of the marker on inanimate NPs, as indicated in Table 6, conveys no meaning.

3.2 Ts'ixa (East Kalahari Khoe)

Fehn (2014: 231) sums up the meanings associated with use of the ACC marker *(ʔ)à* in Ts'ixa as shown in Table 7 (slightly modified), where the definiteness of a lexical NP is dependent on the presence of a PGN marker. In contrast with the situation for Shua, in Ts'ixa word order is relevant to the choice of using or not using the ACC marker.

Table 7: Meaning of ACC marking on definite and indefinite NPs in Ts'ixa

Word order	Definite NP: personal pronoun or PGN-marked lexical NP	Indefinite lexical NP (not PGN-marked)
S O *ʔà* V	No meaning (ACC obligatory)	Contrastive focus
S V O *ʔà*	No meaning (ACC obligatory)	No meaning (ACC precluded)
O *ʔà* S V	Contrastive focus	Contrastive focus

It will be observed that no information is provided in Table 7 about meanings associated with non-use of the ACC marker in Ts'ixa. However, it is likely that non-use never conveys meaning. For indefinite direct objects the ACC marker occurs rarely (Fehn 2014: 229); its absence is the norm, and may reasonably be presumed to convey no meaning. For OSV clauses the fact that accusative marking on both definite and indefinite direct objects has the same meaning leads one to expect that its omission is similarly motivated in each case, and thus has no meaning.

It is worth observing in passing that the facts of optional accusative case marking in Ts'ixa are not well accounted for by the disambiguation theory, according to which the case-marker is used when there is a possibility of confusion between which roles are borne by the NPs of a transitive clause, and not used when there is no likelihood of confusion. First, the most common word orders in Ts'ixa are SOV and SVO, which are about equally frequent (Fehn 2014: 214). In these unmarked word orders definite object NPs are obligatorily marked by the ACC, whilst in the more marked OSV word order the marking of the direct object is optional. Second, the ACC occurs either obligatorily or optionally (in OSV clauses) where it is not required to disambiguate of the fillers of the subject and object roles: on PGN-marked direct objects, where the form of the PGN marker indicates the grammatical role of the NP. By contrast, for direct objects that are not PGN-marked – and thus where the NPs denoting them are not morphologically distinct from non-PGN-marked subject NPs – the ACC marker is optional or precluded.

Fehn (2014) suggests that in all circumstances where the ACC is optional that its presence assigns contrastive focus on the object. This is illustrated in the following exchange, invented by a native speaker to illustrate the meaning difference between the presence and absence of the ACC marker. (20d) in particular illustrates contrastive focus on the object.

(20) Ts'ixa (East Kalahari Khoe; Fehn 2014: 230)

a. *maá ʔà tsá ǂ'áḿ-nà-tà*
who ACC 2SG.M beat-J-SDPST
'Who did you beat?'

b. *k'aro=mà tí ǂ'áḿ-nà-tà*
boy=3SG.M.II 1SG beat-J-SDPST
'I beat the boy.'

c. *ʔabá=mà tsá ǂ'áḿ-nà-tà*
dog=3SG.M.II 2SG.M beat-J-SDPST
'Did you beat the dog?'

d. *ʔĩĩ, ʔabá=mà tí ǂ'áḿ-nà-tà ʔíté k'aro=mà ʔà tí ǂ'áḿ-nà-tà*
no dog=3SG.M.II 1SG beat-J-SDPST NEG boy=3SG.M.II ACC 1SG beat-J-SDPST
'No, I did not beat the dog, I beat the boy.'

However, a number of other examples provided in Fehn (2014) appear not to exemplify contrastive focus, but rather, as in Shua, the presence of the ACC functions to select a referent (type) from a set of presumed entities or entity types. This is illustrated by (21b) – compare this example with the neutral (21a), which does not involve an instance of the ACC postposition.

(21) Ts'ixa (East Kalahari Khoe; Fehn 2014: 229)

a. *xaḿ=mà ʔé.ǂù /'ũű-á-tá*
lion=3SG.M.II 3PL.M kill-J-SDPST
'They killed the lion.'

b. *xaḿ=mà ʔà ʔé.ǂù /'ũű-á-tá*
lion=3SG.M.II ACC 3PL.M kill-J-SDPST
'They killed the lion (and not something else).'

Indeed, there are other environments in which use of the ACC does not assign contrastive focus to a direct object. One such situation is when the object is human and indefinite (Fehn 2014: 232), as in example (22). Here again it is possible that prominence is assigned to the object by use of the ACC in view of selecting the relevant entities from the class of available ones: a possible interpretation of this example is that it narrows down to Khoe people as possible speakers, from the set of all persons who might speak at G|oxa-Hill (there may well be other possible explanations for this are consistent with assigning prominence to the object NP 'people', but more detailed knowledge of the discourse environment would be required to permit evaluation).

(22) Ts'ixa (East Kalahari Khoe; Fehn 2014: 232)

g|óóxà=m̀	*ngùà*	*/ú.xùà*	*tsá*	*kò*	*khoe*	*ʔà*	*kúḿ*	*k'uí*
GN=3SG.M.I	LOC	sometimes	2SG.M	IPFV	person	ACC	hear	speak
kò=sè								
IPFV=ADV								

'At G|oxa-Hill, you can sometimes hear people speak.'

To sum up, the facts as outlined above for Ts'ixa are not inconsistent with my proposals for the motivations for using and/or not using the ACC postposition. In particular, use of the ACC in the environments in which it is optional assigns a high degree of prominence to the object. What is significantly different from Shua is that only identity of the object referent seems to be a relevant consideration in making the object prominent; considerations of the degree of patientivity of the object appear not to be pertinent in Ts'ixa (cf. example (19) above). To make the case watertight requires more evidence, in particular, more information on frequencies – especially on the frequency of marking vs. non-marking of definite object NPs in clause-initial position, and on the effects of animacy on frequencies.

3.3 Khwe (West Kalahari Khoe)

The situation in Khwe is somewhat murky, despite the extensive treatment in Kilian-Hatz (2008; 2013). The basic facts concerning the distribution of the marker on NPs in core clausal roles appear to be as shown in Table 8, which excerpts relevant information from Table 12 of Kilian-Hatz (2008: 47) and Table 15 of Kilian-Hatz (2008: 56).

Table 8: Accusative marking of core NPs in Khwe

	Definite NP						**Indefinite NP**			
	Pronoun		Proper noun		Specific		Generic		Unspecific	
	PGN	*(ʔ)à*	PGN	*(ʔ)à*	PGN	*(ʔ)à*	PGN	*(ʔ)à*	PGN	*(ʔ)à*
Intransitive clauses										
S	+[a]	–	–	–	+	–	–	±	–	±
Transitive and ditransitive clauses										
S	+	–	–	–	+	–	–	(+)–	–	(+)–
O	+	±	+	+	+	+(–)	–	±	–	±
IO	+	+	+	+	+	+(–)	–	+	–	+

[a] + 'with marker'; – 'without marker'; ± 'optional marker'; () – rare.

As already mentioned, Kilian-Hatz considers *(ʔ)à* to be an object marker only in those contexts in which it is obligatory on NPs in that role – i.e. proper noun objects and

indirect objects other than specific nouns; elsewhere she takes it to be a focal marker. About two thirds of direct object NPs overall are *(ʔ)à*-marked (Kilian-Hatz 2013: 376). Kilian-Hatz suggests the following generalisations for the marking of direct objects in those circumstances in which it is not obligatory (Kilian-Hatz 2008: 59–61, 2013: 371–372):

Specific/definite objects

- Use of *(ʔ)à* is motivated by:
  - Possibility of confusion as to who is acting on who
  - Contrastive contexts, including selective contexts
- Non-use of *(ʔ)à* is motivated by:
  - Presence of another NP marked by *(ʔ)à* – e.g. on the subject or indirect object (see Table 8)
  - No possibility of confusion as to who is acting on who

Non-specific/indefinite objects

- Non-use of *(ʔ)à* is motivated by:
  - No possibility of confusion as to who is acting on who
  - Presence of another NP marked by *(ʔ)à*

As indicated, for both specific/definite objects and non-specific/indefinite objects non-use of the marker *(ʔ)à* is motivated by the same considerations. Kilian-Hatz (2008) does not make it clear why this should be the case; in fact, it is doubtful for two reasons. First, for specific nouns absence of the marker is rare according to Table 8, suggesting that use is the norm (as stated specifically in Kilian-Hatz 2013: 372). Being so predominant, use is unlikely to be associated with specific contexts or meanings. Second, for non-specific/indefinite nouns presence and absence appear less skewed in distribution – although Kilian-Hatz (2013: 371) says that the marker is used in most cases – and one would expect both to be motivated and meaningful. Nonetheless, no motivation is suggested for the use of the marker on such objects.

To begin, the non-use of *(ʔ)à* will be examined. Examples cited in Kilian-Hatz (2008; 2013) reveal that the two circumstances of non-use cited in the above generalisations are at best statistically correlated with non-use. There are examples in which objects are marked by *(ʔ)à* alongside of other NPs that are also marked by *(ʔ)à* – see examples (34) and (35) in Kilian-Hatz (2008: 52). According to Kilian-Hatz such examples tend to be found in elicitation rather than in actual discourse; this is, however, a tendency and not a rule.

Similarly, the association of non-use of *(ʔ)à* with contexts in which there is no doubt as to who is acting on who is not consistently borne out: (23) is an example in which an object is marked by *(ʔ)à* and there is clearly no real possibility of confusion as to who/what is acting on who/what.

(23) Khwe (West Kalahari Khoe; Kilian-Hatz 2013: 372)

ǀóɛ-hɛ	*átaxa*	*ǂ'ű́-à-tè*	*cɛ-djì*	*à*
child-3SG.F	thus	eat-ATV-PRS	bush:species-3PL.F	ACC

'Thus the child eats the cɛ fruits.'

Nor does the possibility of confusion as to who is acting on who consistently engender the presence of *(?)à* on specific object NPs, as shown by (24a) and (24b). In both of these examples it would seem that there is a genuine possibility of confusion as to who is acting on who, though no instance of the marker *(?)à* is present.

(24) Khwe (West Kalahari Khoe; Kilian-Hatz 2013: 372)

a.

ó-ǀ'ű́ũ-khòè-tè	*té*	*khóé-tè*	*xà-má*	*kx'ó*
PRV-hair-person-1PL.C	1PL.C	person-1PL.C	DEM-3SG.M	eat:meat

'He has to eat us, the ones without fur.'

b.

tàn	*tíì*	*tcá*	*tí*	*ú*
stand:up	then	2SG.M	1SG	bring

'Stand up, then I may take you.'

Just a few examples cited in Kilian-Hatz (2008; 2013) – one of which is (25) – illustrate the contrastive function of *(?)à* on direct object NPs. In (25) the rock monitor and genet have already been mentioned and are represented by definite NPs (marked by a PGN marker). However, only the former is marked by *(?)à*: Kilian-Hatz (2013: 372) comments that the genet is the overall discourse topic of the narrative, presumably accounting for the absence of the marker *(?)à* on this NP in the second clause.

(25) Khwe (West Kalahari Khoe; Kilian-Hatz 2008: 372)

tínù	*córò-mà-à*	*ǁgàa-khòè-djì*	*n|góá-à-tè*
then	rock:monitor-3SG.M-ACC	female-person-3PL.F	cook-ATV-PRS

kx'á-khòè-ǁè	*tcámba-mà*	*n|góá-à-tè*
male-person-1PL.M	genet-3SG.M	cook-ATV-PRS

'Then the women are cooking the rock monitor, and we men are cooking the genet.'

A better explanation of the situation in Khwe is possible within McGregor's (2010; 2013) theory of optional case marking. First, as mentioned above the ACC marker is almost always present on specific direct objects, and is unlikely to convey meaning. In this context only non-use of the ACC marker conveys meaning; this must be to background the direct object. In examples such as (23) and (25), then, the presence of the *(?)à* marker on the direct object NP does not serve to foreground it, or to disambiguate it from the subject, but rather indicates nothing particular: the object is simply an object. It is the absence of the marker on the direct object of the second clause in (25) that is meaningful, and serves to background it – consistent with the fact that it is the primary discourse topic, and thus a good candidate for something presumed, for something that is understood as a component of the common ground at that point in the interaction. Certainly

contrasts are apparent in this example: between the women and men as subjects and the rock monitor and genet as direct objects. But it is not the use of *(ʔ)à* that signals them; it is presumably some other features of the utterance (assuming that the contrasts are actually marked rather than inferred).

Second, for pronominal objects and indefinite objects, as suggested above, it seems that use and non-use of *(ʔ)à* are more evenly distributed. However, in the absence of statistical data and a comprehensive examination of examples in the sources it is impossible to be certain whether both are meaningful. Indeed, it may be that further distinctions need to be made according to e.g. inherent features of the NP (animacy) or word order.

Third, if (as Kilian-Hatz 2013: 371 avers) the marker is used on most indefinite direct objects, it is likely that non-use on them is meaningful, and serves a backgrounding function. This is consistent with the absence of *(ʔ)à* on an object comprising a very long list of types of things and an object with an abstract type referent (respectively, examples (471a) and (471b), Kilian-Hatz 2013: 371–372). Use of the marker could also be meaningful, though this is less certain.

3.4 Concluding remark

In most Khoe languages accusative marking of direct object NPs is optional, at least in certain environments. Little is known for certain concerning the factors that motivate use vs. non-use of the accusative marker in its environments of optionality, or the meanings that are expressed. Nonetheless, it is likely that the theory of McGregor (2010; 2013) can account for the facts in the various languages. Admittedly, much more research on each Khoe language is necessary to make a convincing case. For present purposes, it is sufficient to observe that the theory suggests that presence and/or absence of the postposition concern joint attention and grounding.

4 The emergence and development of optional accusative marking

Before beginning the exposition of my proposals for the development of optional accusative marking in Khoe languages some cautions are in order. First, as has already been mentioned, descriptions of most Khoe languages lack comprehensiveness in their treatment of *(-)(ʔ)à*, including motivations for its use and non-use. Second, diachronic data of any significant depth is non-existent: there is no long tradition of writing in any Khoe language or of linguistic investigation going back very far in the past. Third, as Fehn (2014: 319–320) rightly observes, serious problems lie in the low distinctiveness of the form *(-)(ʔ)à* – and hence the probability of spurious cognates and look-alikes – to say nothing of the irregular presence of the initial /ʔ/ in the sources. These problems bedevil grammaticalisation investigations of "exotic" languages, for which descriptions are frequently partial, and historical depth is lacking in the data; moreover, grammemes are often phonologically reduced and/or show phonologically unmarked shapes.

These concerns do not mean that one should avoid the domain of grammaticalisation. But they do imply that one needs to constrain these hypotheses. One way is to invoke attested pathways as far as possible, especially pathways that have empirical evidence in actual diachronic data. Another is to compensate for lack of time depth with synchronic diversity. Thus the need for information on the relevant forms and their functions in a diverse sample of languages in the family or in the geographical region. Even with these constraints, the proposals ultimately remain speculative, albeit hopefully plausible.

Before outlining my proposals for the grammaticalisation of accusative marking in Khoe languages in §4.2 I briefly overview the few existing suggested scenarios.

4.1 Overview of existing proposals

The Khoe literature contains just a few suggestions for the grammaticalisation of the accusative *(-)(ʔ)à*. None of these explain how *(-)(ʔ)à* became an accusative marker, or why it is optional in Shua, Ts'ixa, Khwe and !Ora. It is useful to overview these proposals and draw out their inadequacies so that the proposals I outline in §4.2 can be tested against these weaknesses.

The only detailed scenario for the grammaticalisation of *(-)(ʔ)à* is that proposed in Kilian-Hatz (2008: 55, 2013: 376–378) for Khwe.[13] These two sources describe effectively the same diachronic scenario, albeit with some differences in detail and in the degree of elaboration of certain points. Both proposals are based squarely on the situation in Khwe, and although they might be extended to other Khoe languages, emendations would be necessary to account for the different endpoints in the various modern languages.

The scheme in (26) shows the grammaticalisation scenario proposed in Kilian-Hatz (2008: 55), while (27) shows the version presented in Kilian-Hatz (2013: 376–377). According to (26), the development of the genitive function of *(ʔ)à* is independent of the development of the object marking functions, and this is left out of (27). This part of the story is of no concern here.

[13] König (2008: 276–278) briefly outlines a scenario similar to Kilian-Hatz's, involving a change from copula to focus marker to accusative marker, which she says is applicable to both Khwe and Khoekhoe (see (26) and (27) below). On the other hand, Haacke (2013b: 342) suggests in a parenthetical aside that *-à* in !Ora is "derived from the stative aspect marker". He provides no discussion or evidence for this suggestion, which is presumably based on formal identity or similarity of the oblique suffix with a stative aspect marker *-a*.

(26) genitive (indefinite/unspecific)
↑
copula/presentative (indefinite/unspecific)
↓
subject focus (indefinite/unspecific)
↓
direct object focus
↓
indirect object focus
↓
adverbial focus

(27) COP copulative/presentative use of *à*, which is restricted to indefinite subjects in verbless clauses
↓
FOC "becomes a focus marker that introduces new information": indefinite subjects, indefinite objects
↓
O extends to new but definite objects (a) to indicate contrastive focus; (b) to disambiguate syntactic roles
↓
OBL extends to focus on local and temporal adverbials (apparently NPs)

According to both (26) and (27) *(ʔ)à* was initially a copula/presentative marker that was restricted to verbless clauses with indefinite or unspecified subjects, in which case it followed the subject NP. Reflexes of this putative initial state are found in the modern language, as shown by (28)–(29) (see also (7a) and (7b) above).[14]

(28) Khwe (West Kalahari Khoe; Kilian-Hatz 2008: 135)
yì *á* */éú*
tree COP big
'The tree is big.'

(29) Khwe (West Kalahari Khoe; Kilian-Hatz 2008: 99, 208)
n/ĩĩ́ *dáó* *à* *ǂ'ó* *dáó* *à*
DEM[15] path FOC small path COP
'This path is a small path.'

[14]Kilian-Hatz usually glosses *à* in example (28) as FOC, not COP (she is inconsistent in example (29), glossing it as COP on p. 199, but as FOC on p. 208). What she normally glosses as COP is *à* in final position in the relational clause, as in the case of the second instance of *à* in (29). In keeping with the remarks of footnote 2 above, I employ the gloss COP for those cases in which the marker appears to be serving as a copula.

From marking indefinite/unspecified subjects of copula relational clauses (see (26)) *(ʔ)à* extended to marking indefinite/unspecified subjects of ordinary verbal clauses, then to marking direct objects, and ultimately to marking indirect objects. One difficulty with this scenario is that it predicts that the frequency of *(ʔ)à* should be highest on the oldest usage, subjects, and lowest on the newest, indirect objects. In fact, the newer uses of the focus marker are more frequent than the most established one. Indeed, as has been remarked, *(ʔ)à* occurs on almost all indirect object NPs, making it improbable that it assigns focus to indirect objects.

(27) gets around this difficulty by presuming that in its first stage of development *(ʔ)à* became a general focus marker that was not specifically associated with any grammatical role, but marked NPs that presented new information. From this, it seems that the focal value of *(ʔ)à* began to change somewhat, so that on object NPs it came to be associated with contrastive focus and disambiguation. There are a couple of things that are not accounted for in this scenario.

First, the change from focus marker to contrastive focus marker is a restriction and strengthening of the focal value of the marker, and seems an unlikely change for a focus marker – one expects a focus marker to weaken over time, not to strengthen. How this relates to the disambiguation function is not made clear, though in this instance it is plausible that the focal value has weakened. This scenario thus invokes both strengthening and weakening of the focal value of the marker.

Second, it is not explained in this story why this change happened with direct object NPs but not with subject NPs. Indeed, neither (26) nor (27) accounts for the strong association of *(ʔ)à* with object NPs in Khwe (or any other Khoe language) – recall that about two thirds of object NPs in Khwe are marked by this postposition; NPs in other grammatical relations are far less frequently marked.[16]

Third, (27) presumes an initial association of *(ʔ)à* with indefinite NPs and new information, as expected for a focus marker. And indeed as can be seen from Table 8, this association is manifest in Khwe for subject NPs. However, for direct object NPs the situation is inconsistent with the initial association: definite proper and specific ones are almost always marked by *(ʔ)à*, whereas for indefinite ones *(ʔ)à* remains optional. It remains unexplained why the marking of indefinite direct object NPs did not become more entrenched and frequent than the marking of definite direct object NPs, given that the former represents the older and less marked situation. One expects under scenario (27) that on definite NPs occurrence of the postposition *(ʔ)à* would have been more restricted and infrequent.

Finally, it is unclear why (in both (26) and (27)) it is only in the final stage that *(ʔ)à* comes to be used to mark spatial and temporal locatives. To be sure, in this instance the low frequency of use of the postposition is consistent with the late development of the

[15]Note that in this example Kilian-Hatz (2008: 208) treats the subject as having an indefinite head noun (since it is not marked by a PGN marker), even though there is a demonstrative in the NP.

[16]Kilian-Hatz (2013: 356–357) provides some relevant figures showing the strength of the association of *(ʔ)à* with the object role, based on a corpus of some 1,500 sentences from a set of 30 texts. In this small corpus 29 object NPs are marked by *(ʔ)à* (i.e. almost 80%), 8 are not marked; no transitive subject NPs are marked. (No figures are given for intransitive subject NPs.)

function. But it remains unclear why – if it had really begun as an unrestricted focal marker – *(ʔ)à* would not have been used generally on clausal units, regardless of their grammatical role.

Kilian-Hatz (2013: 378) attempts to flesh out details of the development of *(ʔ)à* from a pragmatic marker of focus to a "more grammatical" marker of object, as per (30). She does not indicate, however, how precisely this sequence of steps fits with that proposed in (27).

(30) focussed referent precedes main clause in copulative periphrasis with *à*, and object referent identical with that of main clause – O *à*, SOV
↓
reinterpretation of copulative periphrasis as focussed and topicalised object of main clause – O *à* SV
↓
reinterpretation of focus marker *à* as combined focus-object marker
↓
expansion of focus-object marker to objects in SOV and SVO clauses (SO *à* V, SVO *à*)

Again, a number of stages proposed here lack motivation. To begin with, why didn't the story begin at the second stage? An obvious motivation for this might be to mark an object that occurred in a marked order with respect to the subject. Second, given that at the same time *(ʔ)à* marked indefinite subjects, which also typically occurred preverbally, why should *(ʔ)à* have come to be strongly associated with object NPs? Third, this additional scenario still does not account for the most serious difficulty of (26) and (27), namely how and why *(ʔ)à* extended to definite direct objects, and why it is so frequent on them.

4.2 An alternative proposal

I begin by reconstructing in broad brush a set of probable diachronic changes leading to the core case-markers of modern Khoe languages; these will be discussed and elaborated further below. It should be noted that this is intended to capture only a small part of the possible diachronic developments involving *(-)(ʔ)à*; developments that do not pertain to the accusative marker as endpoint are largely ignored. For instance, it seems reasonable to presume that the locative postposition *(ʔ)à* of many Shua varieties developed from the same source as the accusative, albeit via independent processes. Also explicitly left out of the proposed diachronic scenario are those changes specific to *(-)(ʔ)à* on indirect objects.

It is reasonable to presume that the marker *(ʔ)à* was initially a separate word. At some point in time it lost its freedom of occurrence when following the PGN marker, becoming a suffix to that marker. In the Khoekhoe lineage PGN markers became effectively obligatory on NPs, and the suffix was restricted to this environment. However, in this lineage the association with objects never became exclusive, and a small fraction of sub-

ject NPs retained the suffix – e.g. "deposed" subjects, and in Nama-Damara subjects in some marked illocutionary moods; moreover, in !Ora at least on object NPs the suffix never became entirely obligatory.

In the Kalahari Khoe lineage different diachronic developments occurred. In contrast with Khoekhoe languages the PGN markers were used only on some NPs (perhaps definite ones as in many of the modern languages), and it was only in this environment that the *(ʔ)à* lost its freedom of occurrence. Ultimately the suffix was reinterpreted as a part of the PGN marker, leading to the development of two (sometimes three) series of PGN markers in the majority of languages. The *à* series was strongly associated with objects, and effectively became an accusative series in some languages (Ts'ixa, ǀGui, and Eastern ǁAni); in other languages (e.g. Nata Shua and Khwe) the association of the *à* series with subjects strengthened rather than weakened, and this series was ultimately used for NPs in both subject and object roles.

Elsewhere, i.e. with NPs that were not marked by PGN markers, the *(ʔ)à* remained a free word. In most of the Kalahari Khoe languages this free morpheme became exclusively but optionally associated with non-PGN-marked objects, and is not employed on subjects at all. The next development that occurred in the Kalahari Khoe lineage was the extension of the marker *(ʔ)à* from non-PGN-marked object to PGN-marked objects, presumably via reinforcement. In Khwe, where *(ʔ)à* does occasionally mark subjects, it is restricted to non-PGN-marked ones; no extension to PGN-marked subjects occurred.

The above scenario focuses on the formal aspects of the grammaticalisation of the accusative marker *(-)(ʔ)à*. The schematic representations provided in Figure 2 and 3 show the main concomitant developments in usage across the two major lineages. The arrows show diachronic developments. However, not all of these changes can be located in a single chronological sequence with respect to one another, and hence two parallel pathways are indicated for each representation. It should be noted that not all of the diachronic developments occurred in all languages.

The initial stages of Figure 2 and 3 are the same: *(ʔ)à* is a free copula in presentational clauses that occurred after the NP presented to the addressee's attention, as illustrated in the Khwe examples (7a) and (7b) above. In these environments that free copula served an indexing function in the Peircean sense – cf. footnote 7 on the term *copula*. It is not unreasonable to presume that the same marker could also be used in ordinary verbal clauses to draw attention to an NP, indexing its presence and drawing the addressee's attention to it. Khwe example (31) illustrates this usage in one modern language. There is no reason to suppose either of these uses predates the other. In other words, the proposal is that *(ʔ)à* began as an indexical word that served to draw attention to a referent entity, regardless of whether it occurred in a dedicated presentational clause or in an ordinary verbal clause.

(31) Khwe (West Kalahari Khoe; Kilian-Hatz 2008: 220)

ndée!	*tómtom-xò*	*à*	*ŋ́kà*	*tí*	*à*	*tóm-a-tè!*[17]
mum	swallow-NMLZ	COP	there	1SG	ACC	swallow-ATV-PRS

'Mum, there is a swallowing thing [i.e. a python] that (wants to) swallow me!'

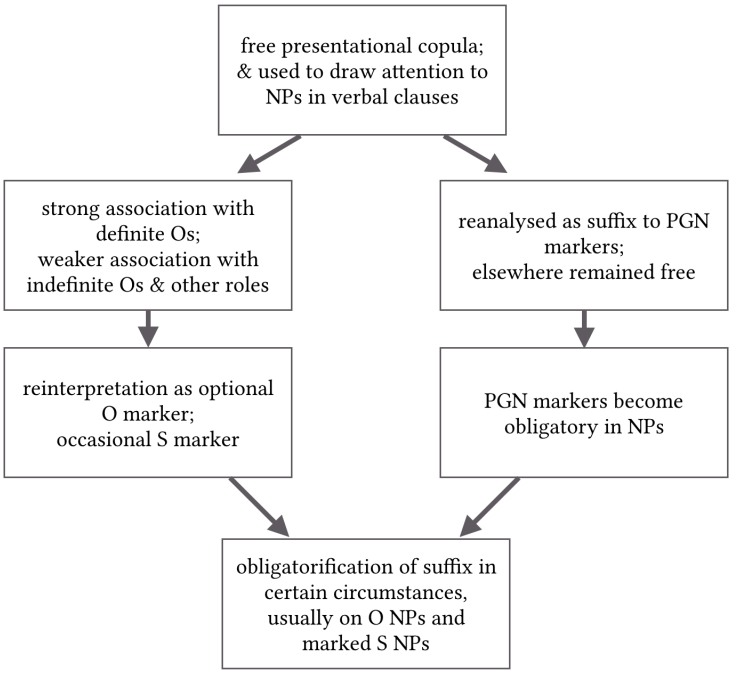

Figure 2: Diachronic developments of *(-)(ʔ)à* in the Khoekhoe lineage

My proposed initial stage is somewhat reminiscent of the initial stage suggested in Kilian-Hatz (2013: 376–378) and König (2008: 276–277). In all of the scenarios *(-)(ʔ)à* began as a type of copula, though in Kilian-Hatz's and König's accounts it was not specifically a presentative one. It was, however, restricted to verbless clauses with indefinite subjects. This became a focus marker that introduced new information, in particular indefinite subjects and indefinite objects. By contrast, I take the presentative use – an attentional resource that permits the speaker to direct attention to something so that it comes to occupy the centre of the joint attentional frame (Tomasello 2003) – across both verbal and verbless clause types to be the original source stage for the diachronic changes; how that relates temporally with the use of *(ʔ)à* as an attributive or identifying copula is not clear to me, and is irrelevant to my scenarios for the development of the accusative marker.

[17]Elsewhere, the same example is given a different free translation, "Mom, there is a swallowing thing here; it swallows me!" (Kilian-Hatz 2008: 250). Given the discussion of the previous page (Kilian-Hatz 2008: 249), this is inappropriate, and the monoclausal free translation given in (31) is preferable.

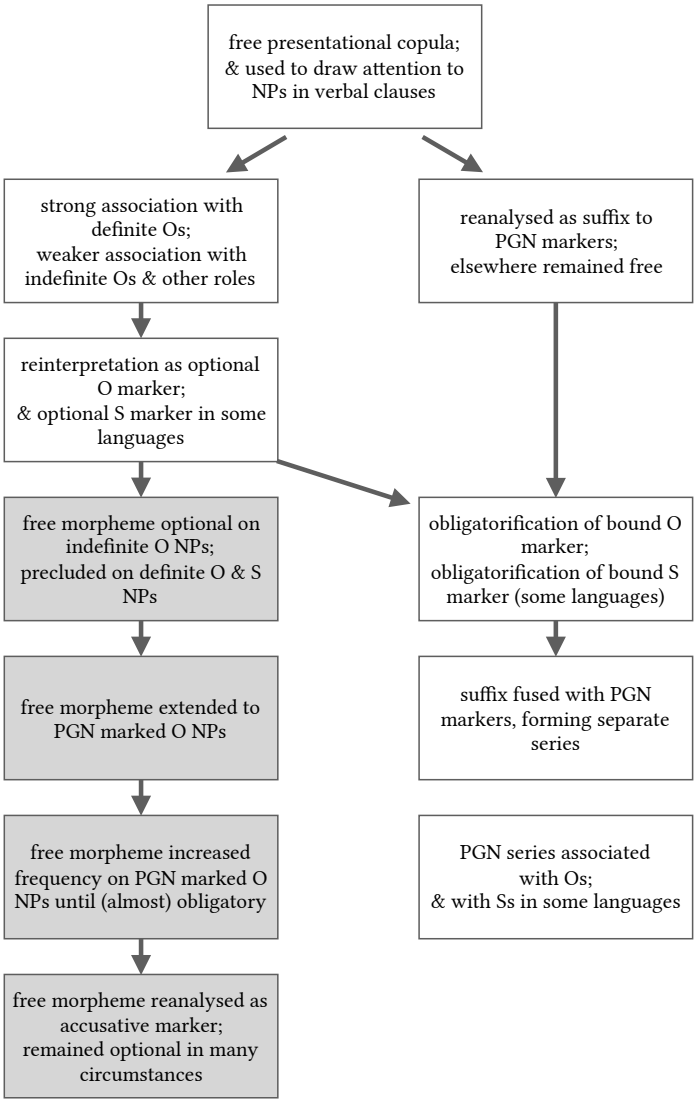

Figure 3: Diachronic developments of *(-)(ʔ)à* in Kalahari Khoe lineages

A crucial feature of Figure 2 and 3 is that the indexing function of *(-)(ʔ)à* was not restricted to NPs in any particular grammatical relation. Nonetheless, from early on, at least from the second stage, it was strongly associated statistically with certain types of object, specifically definite objects – not indefinite ones, as per Kilian-Hatz (2013: 376–378) – less strongly with indefinite objects and intransitive subjects, and perhaps even less with transitive subjects and locatives. What motivated these initial associations?

In essence, my answer is that NPs were indexed and drawn to the addressee's attention when they were unexpected for some reason. One circumstance in which unexpectedness emerges is when the NP in the grammatical role does not fit with the prototype for the role. For the two core grammatical relations in transitive clauses the prototypes may be assumed to be something like the following:

- Transitive subjects (Agents) are prototypically given (presuming my reformulation of DuBois's (1987) given A constraint, McGregor 1998), animate, and definite;
- Objects (Undergoers) are prototypically new, inanimate, and indefinite (e.g. Comrie 1979).

For intransitive subjects I presume no corresponding prototypical features: NPs in this role are not strongly associated with any particular givenness, animacy, or definiteness values. Thus different intransitive clause types are associated with different norms on these dimensions. This means that for intransitive subjects unexpectedness must be based on considerations other than not matching a prototype. For NPs in this role either only the local discourse consideration that it is informationally new or indefinite is relevant to the evaluation as unexpected, or (if given and/or definite) the unexpectedness relates to the identity of the filler of the role – some other entity being expected in the role.

What may have happened in the early stages of the scenarios in Figure 2 and 3 is that object NPs were marked as unexpected primarily when definite, when they failed to match this component of the role prototype. Ultimately, all or the majority of definite objects came to be marked by *(ʔ)à*.[18] If, in these early stages, PGN markers were markers of definite, i.e. identifiable, NPs (as in some modern Kalahari Khoe languages, e.g. Khwe – Kilian-Hatz 2008: 43, Ts'ixa – Fehn 2014: 63, 74), the strong affinity of *(ʔ)à* with PGN markers can be accounted for. For these NPs marking by *(ʔ)à* became obligatory or almost obligatory, and this fed into the development of the marker into a suffix, and ultimately to loss of its separate status as a morpheme and its incorporation into the PGN forms of one of the series in Kalahari Khoe languages. This series is the one that is in all languages associated with NPs in object roles. In Khoekhoe something different happened: the PGN markers generalised to all NPs regardless of definiteness, and the *-à* suffix went with it on all object NPs by extension. As already remarked, in Nama-Damara it seems that *-à* is obligatory on objects; it may be optional in !Ora, but no information is available on the

[18] I presume that this was a gradual process, beginning with only some definite objects being marked, and that the frequency of marking increased over time. However, a rapid, virtually instantaneous event cannot be ruled out. Both are consistent with the proposed scenarios.

conditions of its use and non-use, and without relevant data it is pointless to speculate on its development.

The situation for indefinite NPs was initially quite different, and remained different in Kalahari Khoe languages where PGN markers did not generalise to all NPs. Indefinite NPs satisfy the relevant component of the prototype, and their unexpectedness – and thus marking by the optional *(ʔ)à* presentative index – could only be based on local considerations relating to the discourse context. These local considerations concern information status (e.g. whether new or contrastive) on the one hand and the extent to which it satisfies the patientivity profile prototypically associated with the role (whether it is more patientive than normal) on the other. The result was that in Kalahari Khoe languages the *(ʔ)à* continued to be a free word with non-PGN-marked NPs, where it remained optional on object NPs. Reflection of these considerations remains in the modern languages, where, as seen in §3, the motivations for use or non-use of the accusative marker differ across the languages: information status is in all languages a relevant variable; patientivity profile is documented as a consideration only for Shua.

The overall preference of *(-)(ʔ)à* on objects was further skewed by its infrequent occurrence on subject NPs. In Khoekhoe, marking of subject NPs became restricted to certain marked syntactic environments, such as on "deposed" subjects. As a result, *-à* was ultimately interpreted as an oblique suffix (as per the analysis of Haacke 2013b: 341). In Kalahari Khoe languages the *-à* series of PGN markers became the one that was consistently associated with objects; in addition, in some languages it was associated with subjects, presumably through extension from the occasional uses of the marker on PGN-marked subjects. When the free *(ʔ)à* was extended to definite NPs it was only to those in object roles. In those languages like Khwe where the free *(ʔ)à* also occurred on indefinite subjects (almost invariably intransitive), there was no corresponding extension to definite subjects. Thus the occurrence of *(ʔ)à* on subjects in Khwe is a relic of the original indexical-presentative function; it is not a later extension of the marker to subjects. In East Kalahari Khoe languages this use either never arose or completely disappeared. The strength of the association with objects resulted in reinterpretation of *(ʔ)à* as an accusative marker in Kalahari Khoe languages.

It is important to observe that it was definite NPs that overwhelmingly tended to be marked by *(-)(ʔ)à*; indeed, in many Kalahari Khoe languages, they are etymologically double marked. Two staged sequences of grammaticalisation of *(-)(ʔ)à* were involved with definite NPs, one resulting in the fusion of *à* with PGN markers, the other involving the expansion in usage of the free reflex of *(-)(ʔ)à* (indicated by the greyed boxes in Figure 3). Both were motivated by the fact that definite NPs failed to match the prototype for objects. At some point in the first sequence only direct object NPs that were indefinite (i.e. non-PGN-marked) were marked by the free *(ʔ)à*. This situation is highly marked and unusual in that more prototypical objects are morphologically more marked than less prototypical ones. The extension of the marker to definite direct object NPs may have been driven by this disparity. It is likely that at the beginning of the second sequence, as of the first, the marker was a presentative index, and that it was only subsequently reanalysed as an accusative marker. Once established as the norm for definite NPs, no

longer would the presentative meaning be associated with *(ʔ)à*. The loss of its presentative meaning may have been what ultimately led to the reanalysis of *(ʔ)à* as an accusative marker on definite NPs: without its presentative meaning and with the definite meaning being marked by the presence of the PGN marker, the only meaning available in this circumstance for the morpheme *(ʔ)à* was accusative. Subsequently this reanalysis extended to indefinite NPs as well, where the free *(ʔ)à* was reanalysed as an optional accusative marker, as shown in the final stage of Figure 3.

The reinterpretation of *(ʔ)à* as an accusative marker was concomitant with its loss of its inherent presentative value. What happened at this stage was that what was strongly associated with *(ʔ)à* came to be interpreted as its coded meaning; correspondingly, the coded presentative sense was lost. Simultaneously with this, meanings became associated with the use and/or non-use of the accusative marker, which was optional at least on indefinite NPs. As per my theory of optional grammatical marking (McGregor 2013), the meanings that could be associated with usage and/or non-usage of the marker were restricted to different values of the features [prominent] and [backgrounded] and their combinations. This process of reinterpretation involved no significant meaning change, as *(ʔ)à*-marking of object NPs already presented the NP to the addressee's attention. In short, the processes involved at this point are well known processes in grammaticalisation, the replacement of coded meaning with habitually associated meaning. In the present case both presentative and case meanings remained, albeit in somewhat modified forms. The meanings also changed their loci of expression: presentative meaning – in the revised form [+prominent] – became associated with usage of the morpheme, while the case meaning habitually associated with the morpheme took the place of its coded meaning.

An important difference between the two sequences involved in Figure 3 is that in the first one marking by *(ʔ)à* was strongly associated with definite NPs from the beginning, whereas in the second sequence the marking was initially most strongly associated with indefinite NPs. The former situation is contrary to the scenario of Kilian-Hatz (2013: 376). It might seem that Kilian-Hatz's initial stage is more in keeping with the use of a presentative marker, which presumably generally serves to introduce new items into the discourse. Two observations attest to the plausibility of my interpretation. First, I would agree that introduced items typically present new information, information that is not retrievable from the previous discourse. However, in that it indexes the entity, the marker presents the item as identifiable by the addressee, namely the target of the index. The situation in the second stage is as assumed by Kilian-Hatz (2013). But its foundation is quite different from that assumed in Kilian-Hatz (2013: 376). It is not because of an association of a focus marker with indefinite NPs, but rather a consequence of reanalysis of the PGN morphology that was associated with definite NPs. Second, the presentative marker was used to draw attention to something, to single it out as noteworthy, and not necessarily to introduce it. In general one can expect that a speaker will draw attention to something when there is something unusual or unpredictable about it. This may be that it is assumed to be unknown to the hearer, and needs to be presented to them; but there are other reasons that concern not the identity of the thing, but e.g. whether it

matches the prototype for the grammatical role. In other words, what the addressee's attention is drawn to need not necessarily be the presence of the entity in the context.

In Kalahari Khoe languages the strengths of the associations of *(ʔ)à* with object NPs vary across the languages and within them according to the circumstances, as seen in §3. In Shua the strongest associations are with NPs very high on the animacy hierarchy, including pronouns and personal names, where *(ʔ)à* is (almost) obligatory. A similar thing happened in Khwe, although somewhat unexpectedly *(ʔ)à* is obligatory on personal names but not on pronouns. In Ts'ixa definiteness and word order seem to have been the major factors (see Table 7 above). In Kalahari Khoe languages obligatorification of *(ʔ)à* on object NPs remained local and restricted, unlike the situation for the *à* series of PGN markers (obligatorily chosen if a PGN was used on the object NP) and *-à* in Nama-Damara. Elsewhere *(ʔ)à* remained optional. Nonetheless, there were evidently statistical differences in the frequency of usage of *(ʔ)à* depending on these factors, and corresponding differences in motivations for presence vs. absence of *(ʔ)à*.

Let us see how the modern situations might have arisen historically. Here I outline the three relevant scenarios, linking them to actual situations in the modern languages. I do not attempt to account for the situations in the modern languages – impossible given the present state of knowledge.

In contexts in which the marker was infrequently used on object NPs use of *(ʔ)à* simply took the value of the morpheme as an attention-director, while no meaning was associated with its absence, the normal and unmarked condition. The expression-locus of the presentative meaning shifted from the morpheme itself to its use. This is the situation for inanimate and lower order animate object NPs in Shua.

Where neither use nor non-use of *(ʔ)à* was strongly dominant, the same shift in the expression-locus of meaning could have occurred, and use could still be associated with prominence as an attention director (although this may have been a somewhat reduced type of prominence vis-à-vis the initial state where the marker was rarely used). At the same time, as non-use of the marker became a less frequent choice, and this choice became more restricted, non-use could have begun to acquire a meaning. When use and non-use had become roughly equal in frequency the contrast between them was liable to be reinterpreted as an equipollent one, in which neither is marked with respect to the other. In this circumstance, rather than carrying a complementary meaning to use, non-use conveyed a qualitatively different meaning. According to my theory of optionality, there are restrictions on what this new meaning can be: it must be [backgrounded] (McGregor 2013). Thus one arrives at the situation represented in the final column of Table 5, which may be the situation for PGN-marked NPs in Shua (see Table 6).[19]

Where the frequency of use of *(ʔ)à* was or became high, as on non-prototypical object NPs such as pronouns in Shua and PGN-marked definite NPs in Khwe, the original attention-directing value of the marker would be completely lost with the high degree

[19] At this stage then for NPs of the specified type the speaker is forced to choose between foregrounding and backgrounding the object NP. There is no option of conveying a neutral meaning or a (strongly) focal meaning. If such meanings are desired, then other means of expression might be chosen by the speaker, e.g. expression by a pronominal rather than a lexical NP or use of another focal strategy such as word order or intonation.

of usage. Assuming the increase in frequency of use was a gradual process, the meaning associated with non-use as per the previous paragraph would have been retained. In such circumstances only non-use of the marker would be meaningful, as in the case of personal name objects in Shua. The association of meaning with non-use of *(ʔ)à* is not however dependent on gradual increase in the use of the marker. The same process as invoked in the previous paragraph could account for a meaningful non-use even if this arose virtually instantaneously.

To wind up this discussion, it is worth drawing a brief comparison with the grammaticalisation of optional ergative case-markers in Australian languages; this lends some credibility to the proposed grammaticalisation scenario for Khoe languages. A number of Australian languages exhibit, as suggested by e.g. McGregor (2010; 2013; 2017), the association of a type of focal marker with transitive subject NPs, where the focal marker was originally an indexical element. This is a plausible source for the optional ergative marker in some Australian languages. The critical grammaticalisation processes here are essentially the same as involved in the development of the optional accusative in the Khoe family: highlight and draw attention the unexpected and/or non-prototypical. The differences concern on the one hand which of the two roles of transitive clauses was selected for this special attention, and on the other the nature of the erstwhile indexical element – a presentative copula in Khoe languages, often a determiner or pronominal element in Australian languages. Furthermore, it is noteworthy that in both Australia and southern Africa evidence of the earlier attention-directing meaning remains in some languages in the otherwise inexplicable occasional use of the marker on subjects of intransitive clauses.

5 Conclusions

I have suggested that – despite the cautions rightly voiced by Fehn (2014: 319–320) – it is possible to propose a viable scenario for the emergence and development of the marker *(-)(ʔ)à* as an accusative marker in Khoe languages. This scenario is preferable to the proposals of Kilian-Hatz (2008: 55, 2013: 376–378). It postulates an initial state in which *(ʔ)à* was a presentative copula, and traces its development into the final vowel of a set of PGN markers that are consistently associated with NPs in the object role and an optional accusative marker in most Kalahari Khoe languages, and into an oblique suffix in Khoekhoe.

I have discussed the ranges of uses of *(-)(ʔ)à* across the Khoe family in as much detail as possible given present knowledge and limitations of space, in the belief that – in circumstances such as those that Khoe languages find themselves where time depth is seriously lacking – a motivated diachronic scenario requires a broad spectrum of synchronic variation. I have also as far as possible attempted to motivate stages and developments among them through reference to other documented processes of grammaticalisation – in the present instance, primarily to development of optional ergative case marking (e.g. McGregor 2010; 2013; 2017).

Much more work needs to be done aside from the above-mentioned need for careful synchronic investigations of the motivations of optional accusative marking in Khoe languages. First, I have ignored the dimension of word order, which is likely to also be a significant factor in the grammaticalisation of *(-)(ʔ)à*. This awaits more detailed investigations of word order in most modern Khoe languages. Second, my scenario focuses on grammaticalisations of *(-)(ʔ)à* to a marker of direct object NPs. I have not included in the diachronic story its role as a marker of indirect objects. Contrary to the assertions of Kilian-Hatz (2013: 373), *(ʔ)à* behaves in a very different way on indirect objects to direct objects, and it is not obvious how the account of the grammaticalisation of *(ʔ)à* as an accusative marker on direct objects should be extended to account for its use on indirect objects. Nor have I addressed the development of the genitive, attributive and identifying copula, and other functions of *(-)(ʔ)à* found in Khoe languages.

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Abbreviations

ABL	ablative	IRR	irrealis
ACC	accusative	J	juncture morpheme
ADV	adverbial	LOC	locative
AG	agentive nominalisation	M	masculine
ALL	allative	NEG	negative marker
APPL	applicative	NMLZ	nominaliser
ATV	non-past active	NP	noun phrase
C	common gender	NPST	near past tense
CAUS	causative	O	direct object
COMP	complementiser	OBL	oblique
CONJ	conjunction	PASS	passive
COP	copula	PER	perlative
DECL	declarative particle	PGN	person-gender-number (marker)
DEM	demonstrative	PL	plural
DOM	differential object marking	POSS	possessive
DU	dual	POT	potential
F	feminine	PROG	progressive
FOC	focus	PRS	present
GEN	genitive	PRV	privative
GN	geographical name	PST	past
HAB	habitual	REFL	reflexive
IDTF	identified	RPST	remote past tense
IPFV	imperfective	S	subject
IND	indicative	SDPST	same day past
INS	instrumental	SG	singular
IO	indirect object		

References

Comrie, Bernard. 1979. Definite and animate objects: A natural class. *Linguistica Silesiana* 3. 13–21.

DuBois, John W. 1987. The discourse basis of ergativity. *Language* 63(4). 805–855.

Fehn, Anne-Maria. 2014. *A grammar of Ts'ixa (Kalahari Khoe)*. Cologne: University of Cologne dissertation.

Güldemann, Tom. 2004. Reconstruction through 'de-construction': The marking of person, gender, and number in the Khoe family and Kwadi. *Diachronica* 21(2). 251–306.

Güldemann, Tom. 2014. 'Khoisan' linguistic classification today. In Tom Güldemann & Anne-Maria Fehn (eds.), *Beyond 'Khoisan': Historical relations in the Kalahari Basin*, 1–41. Amsterdam: John Benjamins.

Güldemann, Tom & Edward E. Elderkin. 2010. On external genealogical relationships of the Khoe family. In Matthias Brenzinger & Christa König (eds.), *Khoisan languages*

and linguistics: Proceedings of the 1st International symposium, January 4–8, 2003, Riezlern/Kleinwalsertal, 15–52. Cologne: Rüdiger Köppe.
Güldemann, Tom & Rainer Vossen. 2000. Khoisan. In Bernd Heine & Derek Nurse (eds.), *African languages: An introduction*, 99–122. Cambridge: Cambridge University Press.
Haacke, Wilfrid H. G. 2013a. Syntax: Namibian Khoekhoe (Nama/Damara). In Rainer Vossen (ed.), *The Khoesan languages*, 325–340. London: Routledge.
Haacke, Wilfrid H. G. 2013b. Syntax: !Gora. In Rainer Vossen (ed.), *The Khoesan languages*, 340–347. London: Routledge.
Haas, William. 1954. On defining linguistic units. *Transactions of the Philological Society* 53(1). 54–84.
Hagman, Roy Stephen. 1973. *Nama Hottentot grammar*. New York: Columbia University dissertation.
Halliday, Michael A. K. 1985. *An introduction to functional grammar*. London: Edward Arnold.
Heine, Bernd. 1999. *The ǁAni: Grammatical notes and texts*. Cologne: Institut für Afrikanistik, Universität zu Köln.
Kilian-Hatz, Christa. 2008. *A grammar of modern Khwe (Central Khoisan)*. Cologne: Rüdiger Köppe.
Kilian-Hatz, Christa. 2013. Syntax: Kxoe subgroup: Khwe. In Rainer Vossen (ed.), *The Khoesan languages*, 356–378. London: Routledge.
König, Christa. 2008. *Case in Africa*. Oxford: Oxford University Press.
Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar*. Vol. 1. Stanford: Stanford University Press.
Langacker, Ronald W. 1991. Cognitive Grammar. In Filip G. Droste & John E. Joseph (eds.), *Linguistic theory and grammatical description*, 275–306. Amsterdam: John Benjamins.
Levinson, Stephen C. 2000. *Presumptive meanings. The theory of generalized conversational implicature*. Cambridge, MA: MIT Press.
Mayer, Mercer. 1967. *A boy, a dog, and a frog*. New York: Dial Books for Young Readers.
McGregor, William B. 1997. *Semiotic grammar*. Oxford: Oxford University Press.
McGregor, William B. 1998. Optional ergative marking in Gooniyandi revisited: Implications to the theory of marking. *Leuvens contributions in linguistics and philology* 87(3–4). 491–571.
McGregor, William B. 2006. Focal and optional ergative marking in Warrwa (Kimberley, Western Australia). *Lingua* 116(4). 393–423.
McGregor, William B. 2008. Indexicals as sources of case markers in Australian languages. In Folke Josephson & Ingmar Söhrman (eds.), *Interdependence of diachronic and synchronic analyses*, 299–321. Amsterdam: John Benjamins.
McGregor, William B. 2010. Optional ergative case marking systems in a typological-semiotic perspective. *Lingua* 120(7). 1610–1636.
McGregor, William B. 2013. Optionality in grammar and language use. *Linguistics* 51(6). 1147–1204.
McGregor, William B. 2014. Numerals and number words in Shua. *Journal of African Languages and Linguistics* 35(1). 45–90.

McGregor, William B. 2015. Optional accusative marking in Shua. Australian National University. Paper presented at the Variation and asymmetries in case-marking.
McGregor, William B. 2017. Grammaticalization of ergative case marking. In Jessica Coon, Diane Massam & Lisa Travis (eds.), *The Oxford handbook of ergativity*, 447–464. Oxford: Oxford University Press.
Nakagawa, Hirosi. 1993. A preliminary report on the |Gui phonology and grammar [in Japanese]. *Asia Africa Bunpo Kenkyu* 22. 55–92.
Nakagawa, Hirosi. 2013. Syntax: ǁGana subgroup: |Gui. In Rainer Vossen (ed.), *The Khoesan languages*, 394–401. London: Routledge.
Ono, Hitomi. 2011. ʔa in G|ui: Copula, participant marker, or something else? Riezlern, Kleinwalsertal. 4th International Symposium on Khoisan Languages and Linguistics.
Shaumyan, Sebastian. 1987. *A semiotic theory of language*. Bloomington, IN: Indiana University Press.
Tomasello, Michael. 2003. *Constructing a language: A usage-based approach to child language acquisition*. Cambridge: Harvard University Press.
Tomasello, Michael & Michael Jeffrey Farrar. 1986. Joint attention and early language. *Child development* 6(57). 1454–1463.
Visser, Hessel. 2001. *Naro dictionary: Naro-English, English-Naro*. 4th edn. Gantsi, Botswana: Naro Language Project / SIL International.
Visser, Hessel. 2010. Verbal compounds in Naro. In Christa König & Matthias Brenzinger (eds.), *Khoisan languages and linguistics: Proceedings of the 1st international symposium, January 4-8, 2003, Riezlern/Kleinwalsertal*, 176–200. Cologne: Rüdiger Köppe.
Visser, Hessel. 2013. Syntax: Naro. In Rainer Vossen (ed.), *The Khoesan languages*, 379–394. London: Routledge.
Vossen, Rainer. 2010. The verbal "linker" in Central Khoisan (Khoe) in the context of verbal derivation. *Journal of Asian and African Studies* 80. 47–60.
Vossen, Rainer. 2013a. Introduction. In Rainer Vossen (ed.), *The Khoesan languages*, 1–12. London: Routledge.
Vossen, Rainer. 2013b. Syntax: Shua subgroup. In Rainer Vossen (ed.), *The Khoesan languages*, 401–407. London: Routledge.
Vossen, Rainer (ed.). 2013c. *The Khoesan languages*. London: Routledge.
Voßen, Rainer. 1997. *Die Khoe-Sprachen: Ein Beitrag zur Erforschung der Sprachgeschichte Afrikas*. Cologne: Rüdiger Köppe.
Widlok, Thomas. 2013a. Morphology: Haiǁom. In Rainer Vossen (ed.), *The Khoesan languages*, 157–165. London: Routledge.
Widlok, Thomas. 2013b. Syntax: Haiǁom. In Rainer Vossen (ed.), *The Khoesan languages*, 347–355. London: Routledge.

Chapter 10

The rise of differential object marking in Hindi and related languages

Annie Montaut
INALCO, Paris (SEDYL UMR 8002, CNRS/INALCO/IRD), Labex 083 (Empirical Foundations of Linguistics)

Differential object marking (DOM), which involves a contrast between zero marking and accusative marking by means of an originally dative postposition, appeared in Indo-Aryan languages only a few centuries ago as opposed to Dravidian languages which had it right from the earlier attested stage (1st century) and have a specific accusative marker. Hindi like other Indo-Aryan languages uses the dative postposition to mark this specific accusative, a postposition which appeared at around the same period for marking experiencers. It is now required with human objects with very few exceptions, and optional with inanimate objects even when definite and individuated. But the historical evolution of the marking shows that the prevalence of animacy over definiteness is quite recent. The paper is an attempt to find explanations for this evolution, which only partly corresponds to the scenario put forward by Aissen (2003), according to which the obligatoriness of marking develops by extension from an initial kernel of marked objects. The paper will first analyze the properties and range of DOM in Modern Standard Hindi (semantic, discourse related, particularly topic related, and syntactic ones; §2 and §3), a fairly well explored topic. I will then inquire into the historical emergence of DOM (§4), and its presence in non-standard varieties or "dialects" (§5), both topics far less studied. Finally it will suggest some hypotheses on the emergence and grammaticalization of the marked accusative in Hindi and related dialects (§6).

1 Introduction

Differential object marking (DOM), which involves a contrast between zero marking and accusative marking by means of an originally dative postposition, is a relatively new phenomenon in Indo-Aryan languages (Masica 1982) as is the rise of dative experiencer subjects, both expressed with the dative marker. This contrasts with Dravidian languages where DOM is attested since the earliest texts, with a specific accusative marker. It is obligatory in Hindi only with human individuated objects, and optional with inanimate objects even when individuated. However, an inquiry in the historical evolution of the marking shows that the supposed prevalence of animacy over definiteness is quite recent.

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The aim of this paper is to attempt to find explanations for this evolution, which only partly corresponds to the scenario put forward by Aissen (2003), according to which the obligatoriness of marking develops by extension from an initial kernel of marked objects. The paper will first analyze the properties and range of DOM in Modern Standard Hindi (semantic, discourse related, particularly topic related, and syntactic ones; §2 and §3), before looking at the historical emergence of DOM (§4) and its presence in non-standard varieties or "dialects" (§5), and suggesting some hypotheses on its emergence and grammaticalization (§6).

2 Basic facts in modern Hindi DOM

DOM is largely grammaticalized in Modern Standard Hindi, where identified objects are both case marked and can trigger a change in verb agreement: in ergative constructions,[1] as well as in passive constructions, the verb agrees with an unmarked patient, but not with a marked patient. DOM is constrained first by the semantic or inherent properties of the argument (obligatory overt marking), and secondarily by discourse related properties (optional marking). DOM occurs only with formally transitive verbs and formal transitivity is found only with verbs high on the transitivity hierarchy (Hopper & Thompson 1980; Tsunoda 1985), involving a binary relation between real agent and real patient. It follows that DOM occurs only with typical agents. In turn, marked objects are more sensible to topicality (Dalrymple & Nikolaeva 2011) than to, as suggested by Næss (2004), affectedness. As for what is often analyzed as syntactic properties of marked objects, they ultimately can also be accounted for in terms of discourse related properties, such as topicality or saliency.

2.1 Morphological properties: flagging and indexation

The case marker is the postposition *ko* (suffixed to pronouns), the same which is also used for beneficiaries or experiencers, a syncretic case for dative/accusative. Example (1a) illustrates the obligatory marking of human objects (particularly proper nouns and personal pronouns) with no effect on agreement in the present, whereas (1b) illustrates the same marking with a verb showing default agreement (masculine singular) in ergative constructions (past transitive clauses), and in the non-promotional passive (1c). The contrast between agreement with unmarked objects (2b) and default agreement (2a) is found with inanimate objects:

[1]Hindi is a language with (aspectually) split ergativity: *laṛke ne film dekhī* [boy.M.SG.OBL ERG film.F.SG see.F.SG] 'The boy saw the film' vs. *laṛkā āyā* [boy.M.SG come.3SG] 'The boy came', *laṛkā āegā* [boy.M.SG come.FUT.3M.SG] 'The boy will come'. Examples are from everyday exchanges or my own when not otherwise indicated.

(1) Modern Standard Hindi (own data)

a. *maĩ* ***tumko*** / ***Rām*** ***ko*** / *apnī* ***beṭī*** ***ko*** *dekh* *rahā* *hū̃*
1SG 2.ACC Ram ACC REFL daughter ACC see PROG.M.SG PRS.1SG
'I am looking at you /Ram / my daughter.'

b. *maĩne* ***tumko*** / ***Rām*** ***ko*** / *apnī* ***beṭī*** ***ko*** *kal* *nahĩ̃* *dekhā*
1SG.ERG 2.ACC Ram ACC REFL daughter ACC yesterday NEG see.PFV.3M.SG
'I did not see you /Ram / my daughter yesterday.'

c. *donõ* ***ādmiyõ*** ***ko*** *dekhā* *gayā*
the.two man.M.PL ACC see PASS.PST.M.SG
'Both men were seen'

(2) Modern Standard Hindi (own data)

a. *maĩne* ***is*** ***film*** ***ko*** *dekhā*
1SG.ERG DEM movie.F.SG ACC see.PFV.3M.SG

b. *maĩne* ***yah*** ***film*** *dekhī*
1SG.ERG DEM movie.F.SG see.PFV.3F.SG
'I have seen this film.'

2.2 Type of arguments: Animacy, definiteness, specificity

Since the role played by the semantics of the verb as suggested in Mohanan (1994: 81) can be seriously questioned (cf., *inter alia*, Self 2012 for an overview), and given the limitations of this study, it will not be treated here.

As in many languages, the animacy (human > animate > inanimate) and definiteness scales, into which specificity can be integrated (Croft 2003: 132) (Personal pronoun / Proper name > Definite NP > Indefinite specific NP > Non-specific NP) overlap, with an apparent prevalence of animacy: (3a) with an indefinite human object is obligatorily marked, and so are proper nouns referring to human objects, in contrast with those referring to inanimate objects (3b). Pronominalized inanimate objects are more often marked than the corresponding nouns (3c). Example (3d) shows that the pronominalization of 'the note' does trigger the accusative marking, whereas the same noun ('the note') occurs thereafter in the unmarked form:

(3) Modern Standard Hindi (own data)

a. *kisī* ***ko*** *bulāo!*
INDEF ACC call.IMP
'Call somebody!'

b. *maĩne Dilīp ko (*Dilīp) dekhā / maĩne Kalkattā dekhā*
1SG.ERG Dilip ACC (Dilip) see.PFV 1SG.ERG Calcutta see.PFV
'I saw Dilip / I saw Calcutta'

c. *koī pitā bhī* ***ise*** *(is bāt ko / yah bāt)*
INDEF father even 3SG.ACC this thing ACC this thing
bardaśt nahĩ̃ kar saktā
tolerate NEG do can.M.SG
'No father at all could tolerate this (this thing).'

d. *jeb se do rupae kā noṭ nikālā "Jivrākhan,* ***ise***
pocket from two rupies of note took.out Jivrakhan 3SG.ACC
rakh-lo" Jivrākhan ne noṭ mānī beg mẽ rakh-liyā
put-take.IMP Jivrakhan ERG note money bag in place-took
'He took a two rupee note out of his pocket, "Jivrakhan, take it". Jivrakhan put the note into his purse.'

Animacy seems at first sight to be the prevalent trigger for accusative marking, while definiteness and specificity seem to act as an optional trigger only, as summarized in Aissen (2003: 469) on the basis of the dominant view in Hindi linguistics. However, the deviant cases can be better explained in terms of specificity or saliency as will be argued below.

2.2.1 Deranking

Human animates can, exceptionally, remain unmarked, a case of "deranking" in Aissen's 2003 terms: for example, variation is found with NPs that are used to refer to the function their referents are associated with, and not to the respective individuals (4a)–(4b), NPs with collective reference (5a)–(5b), and NPs used in comparisons decreasing the referentiality of the NP (6a):

(4) Modern Standard Hindi (own data)

a. *merī sahelī ne nayā naukar rakhā*
my friend.F.SG ERG new servant.M.SG place.PFV.M.SG
'My friend took a new servant.'

b. *ve laṛkā dekh rahe haĩ*
3PL boy.M.SG look PROG PRS.3M.PL
'They are visiting a boy (a suitable groom).'

(5) Modern Standard Hindi (own data)

a. *maĩne bahut log dekhe, bahut gāṛiyā̃ dekhĩ̃, bahut gandagī dekhī*
1SG.ERG many people.M.PL see.M.PL many car.F.PL see.F.PL much dirt.F.SG see.F.SG
'I saw a lot of people, a lot of cars, much dirt.'

b. *maĩne* *bahut* ***logõ*** ***ko*** *dekhā*
1SG.ERG many people.M.PL ACC see.PFV.3M.SG
'I saw many people.'

(6) Modern Standard Hindi (own data)
a. *tum* *jaisā* *koī* *nahī* *dekhā*
2 like.M.SG INDEF NEG saw.PFV.M.SG
'I didn't see anybody like you' (movie title)
b. *maĩne* *kisī* *ko* *nahĩ* *dekhā*
1SG.ERG INDEF ACC NEG saw
'I didn't see anybody.'

Examples such as (4) have been well discussed in the literature (Mohanan 1994; Dayal 2011) and are analyzed in Self (2012) as an illustration of what he calls the specificity requirement, which, according to him, may be the main and only constraint. This constraint requires the object NP to be specific in order for it to be marked. Examples such as (5) and (6) are less frequently discussed, but also show that human non-specific objects can be unmarked, when they involve a collectivity considered as an indivisible whole (5b) rather than a set of individuals (5a) or decrease in referentiality by a comparison in a negative context (6a).

2.2.2 Upranking

Certain inanimates and abstract nouns in the object position are very frequently marked: this type of upranked objects have been noted for nouns with unique referents such as 'moon', 'sun', 'earth' or 'ocean', whose reference can be identified on the basis of shared knowledge. Abstract nouns such as 'death' or 'time', which belong to a different class and are not referential, are in fact quite frequently marked:

(7) Modern Standard Hindi (own data)
cãd ***ko*** *dekho!*
time ACC look.IMP
'Look at the moon!'

(8) Modern Standard Hindi (Agyeya, 1951, *Nadi ke dvip*)
ham *kyā* *samay* ***ko*** / *mrityu* ***ko*** *rok* *sakte* *haĩ?*
1PL INT time ACC death ACC stop can PRS.1M.PL
'Can we stop time, death?'

In Spanish abstract nouns are far more often marked than concrete inanimates, since 79% occur with the preposition *a,* whereas only 21% concrete inanimates occur with the preposition *a* (Company Company 2002: 209). In Hindi, non-referential abstract nouns can be marked, such as 'glass', 'darkness', 'outside':

(9) Modern Standard Hindi (Self 2012, from Burton Page 1957)
lohā *sīse* *ko* *kāṭtā* *hai*
iron glass ACC cut PRS.3M.SG
'Iron cuts glass.'

(10) Modern Standard Hindi (Vinod Kumar Shukla, 1996, *Khilega to dekhenge*)
a. *ham* ***andhere*** ***ko*** *rok* *dete*
1PL darkness ACC stop give.COND.1M.PL
'We would stop the darkness.'
b. *hamne* ***pūre*** ***bāhar*** ***ko*** *band* *kar* *diyā* *hai*
1PL.ERG whole outside ACC closed make give PRF.3M.SG
'We have locked up all the outside.'

One might think that the whole series displays nouns like mass nouns such as 'glass' in (9), which are according to Self (2012) similar to natural kind terms, and natural kind terms may have the properties of definite NPs (Gross 2009). However, the fact that they are more often marked than other inanimates (as in Spanish), which are marked only when specific, both in Hindi and Spanish, requires a different explanation. The reason, not explored to my knowledge, maybe because such abstract nouns, with semantic rigidity, are not liable to variations of definiteness/specificity – except when they change status and become discrete ('a specific blue', 'the very same sadness') they tend to be marked for their semantic rigidity. Hypotheses along these lines should be checked in a distinct study.

2.3 Syntactic properties of the object with attribute

It has been argued that marked objects have differential control properties: no unmarked object can control a non-finite adjunct (Bhatt 2007), whereas propositional adjuncts are commonly controlled by marked objects, particularly after main verbs of perception. Bhatt's 2007 examples are the following:

(11) Modern Standard Hindi (Bhatt 2007: 17)
a. *Minā*$_i$ *ne* *bāzār* *mẽ* *ek* *sailānī*$_j$ *ko* *nācte* *hue*$_j$ *dekhā.*
Mina ERG market in a tourist ACC dancing being see.PFV
'Mina$_i$ saw a tourist$_j$ dancing$_j$ in the bazar.'
b. *Minā*$_i$ *ne* *bāzār* *mẽ* *ek* *sailānī*$_j$ *nācte* *hue* $_{i/*j}$ *dekhā.*
Mina ERG market in a tourist dancing being see.PFV
'In the market Mina$_i$ saw a tourist$_j$ when she$_{i/*j}$ was dancing.' (*a tourist dancing)

According to Bhatt Bhatt (2007), the non-finite adjunct 'dancing' in (11b) can only be controlled by the subject of the matrix clause *Mina*, not by the unmarked object, whereas the same, when marked, controls the adjunct. However, unmarked objects are commonly

used with an adjunct that they control, although they are in this case typically inanimate. In (12a), the implicit subject of the participial clause 'having come back / be back' (state, past) is controlled by the unmarked object *gāṛī* 'car', and in (12b), the participial clause (dynamic event, present) is controlled by the unmarked object *jāmun* 'Java plums'. Both sentences involve a coverb, whose subject is controlled by the main verb's subject, and the same control rule within the participial clause apply as in (11a):

(12) Modern Standard Hindi (Krishna Baldev Vaid, *Dusra na koi*)

a. *gāṛī* *vāpas* *āī* *huī* *dekhkar* *maĩne* *socā…*
car.F.SG back come be.PTCP.F.SG see.CV 1SG.ERG think.PFV.M.SG
'I saw the car having come back and thought…' (not 'Having come back/I came back and I saw the car.')

b. *kāle-kāle* *jāmun* *gāyab* *hote* *dekhkar* *uske* *mũh* *se*
black-black jamun vanished being see.CV his mouth from
zāl *ṭapakne* *lagī*
salive.F.SG drip start.PFV.F.SG
'Seeing the black Java plums disappearing his mouth started watering.'/ 'He saw the black Java plums disappearing and he started salivating'

Both participles *āī huī* past participle of verb *ānā* 'to come' in (12a) and *gāyab hote*, present participle of verb *gāyab honā* 'to disappear', are clearly controlled by the object of the coverb. In other words, a small clause complement of a matrix verb may license an unmarked noun only if it is inanimate and accompanied by an attributive participle, as in (12), not when the noun is animate.

The differential behavior of (11b) and (12), both with unmarked object, can be explained by the fact that in (11b) the unmarked object is a human being in the singular, which makes its unmarkedness highly atypical: a tourist in the market, as an unmarked human patient, must be totally devoid of individuation (like 'people' in example 5a), treated as a mere element of the bazaar. Therefore. its individuation by means of a striking event (dancing in the bazaar) contradicts its implicit characterization as non salient. The 'car' or the 'Java plums' in (12) in contrast are definite inanimates, but their unmarkedness conforms to the tendency for inanimates to remain unmarked if devoid of discourse prominence (cf. below). What is centre-staged in (12) is not the entity ('plum' or 'car') but the global scenario of the disappearance or re-appearance respectively. The objects are not described for their own sake since what prevails for the speaker is the event in which the object is involved, not the object itself.

Similar reasons account for the systematic marking of all objects with nominal or adjectival attributes, whether human or inanimate and non-specific, a fact which remains unnoticed in the literature on Hindi DOM. The following series (13) involves verbs with two objects such as 'judge' / 'consider' / 'call' / 'make' (X Y), a main object and its attribute:

[1]The complex predicate *gāyab honā* 'to disappear' is formed with the adjectival unit *gāyab* and light verb ho 'be', here in the present participle form.

(13) Hindi (own data)

a. *maĩ* *cor* ***ko*** / **Ø* *cor* *kahtā* *hữ*
1SG thief ACC thief say PRS.1SG
'I call a thief a thief.'

b. *maĩ* *billī* *ko* *apnā* *duśman* / *beimān* *māntā* *hữ*
1SG cat ACC REFL enemy disloyal consider PRS.1SG
'I consider cats as my personal enemies/disloyal.'

c. *ve* *rassī* ***ko*** / **Ø* *sā̃p* *samajhte* *haĩ*
3PL rope ACC snake understand PRS.M.PL
'They mistake a rope for a snake' (or 'ropes for snakes').

d. *ve* *puṇya* ***ko*** / **Ø* *pāp* *banāte* *haĩ*
3PL virtue ACC sin make PRS.M.PL
'They transform virtue into sin.'

The marking is obligatory even for non-specific indefinite inanimate objects. Here the attributive adjunct, noun or adjective, does not describe an event in which the object could in principle be a simple element less salient than the process itself as in (12), where the adjunct is a mere qualification. The sentence amounts to attributing a property to the noun, and this attribution itself makes the noun centre-staged and not secondary to the property or part of it.

2.4 Information structure

The above examples (11)–(13) corroborate a major principle of differential object marking that Dalrymple & Nikolaeva (2011) as well as Iemmolo (2010) have captured with the relevance of information structure and the notion of topicality (Iemmolo 2010) or secondary topicality (Dalrymple & Nikolaeva 2011). The syntactic properties analyzed in §2.3 are in conformity with a more general tendency which holds also in the absence of syntactic constraints. Dalrymple & Nikolaeva (2011) assume that topical objects are marked, while narrow focused objects – even if definite specific – are obligatorily unmarked, giving the following Hindi example:[2]

(14) Hindi (Dalrymple & Nikolaeva 2011: 167)

a. *ham* *mez* *paũchẽge*
1PL table wipe.FUT.M.PL

b. *ham* *mez* *ko* *paũchẽge*
1pl table ACC wipe.FUT.M.PL
'We will wipe the table.'

[2]Wide focused objects are preferably unmarked, narrow focused objects are obligatorily unmarked as opposed to topicalized objects, which are marked. For a definition of wide *vs.* narrow focus, see Rebuschi & Tuller (1999: 215). Wide focus sentences felicitously answer "out of the blue" questions such as "What happened?", whereas in narrow focus at least one of the participants is given or known, such as "What did X do?, What did X do with Y?".

In (14a) "the object is construed as part of the event and is not individuated as a pragmatically salient element: informationally, it is part of wide focus" (Dalrymple & Nikolaeva 2011: 167), whereas in (14b) the 'table' was already the centre of attention.

However, topics can remain unmarked in Hindi, either by simple fronting (15a) or fronting with topic particle (15b), which suggests that topicality, whether secondary or primary, is not in itself responsible for the marking of objects.

(15) Hindi (own data)

a. *yah* *film* *kisne* *dekhī?*
this film.F.SG who.ERG see.PFV.F.SG
'This film, who saw it?'

b. *yah* *bāt* *to* *ham* *sab* *jānte* *haĩ*
this thing TOP 1PL all know PRS.PL
'This thing, we all know it.'

Besides, internal objects, which are, by nature, very low in topicality, may be marked and statements such as (16) are in no way exceptional:

(16) Hindi (Vinod Kumar Shukla, 1996, *Khilega to dekhenge*)
zindagī ***ko*** *jīnā* *sthagit* *maut* ***ko*** *jīnā* *hai*
life ACC live postponed death ACC live is
'To live life is to live a deferred death.'

The reason why some topics remain unmarked whereas some internal objects are marked is, again, related to how the speaker wishes to represent the situation involving the object: even a topicalized object may be deprived of saliency in comparison with the process that it is part of (knowing in (15b)) or with the focus in (15a), and thus can remain unmarked, since it is the event or the focus, and not the object, that is discursively salient. An initial sentence like (15b) can be followed by a proposition discussing its whole content ("but we don't care"), but not bearing on the topicalized notion ("this thing is most important or interesting").[3] In contrast, internal objects, if emphasized for the purpose of parallel contrast as is the case in (16), acquire sufficient saliency to be marked: this is not really life that we are living, it is rather like living death. Semantically the added meaning to 'life' is its opposite ('death'), hence the marking. Without marking, the object comes back to its ordinary status as an internal, non-individuated object, which is part of a process from which it cannot be dissociated.

In a discourse with no particular constraints, the same reasons account for the marking of the vast class of optionally marked inanimate objects. In (17) for instance, the same object 'door' occurs first as marked and then as unmarked, although the first occurrence

[3]For instance *phir bhī log is saccāī se dūr bhāgte haĩ* 'however people run away from this truth' [that *jisne is dharti par janm liyā hai use mrityu prāpt hogī* 'whoever was born on this earth will die'] (Bollywoodtadka). A continuation bearing on the topicalized notion requires an initial sentence with a marked object (*is bāt ko*). One may hypothesize that both sentences in (15) have a focused constituent, which makes topicality less prominent.

refers to an indefinite, and the second has more specifying properties since it does not refer to just any 'door', but to 'our own' door.

(17) Hindi (Vinod Kumar Shukla, 1996, *Khilega to dekhenge*)

ek	***darvāze***	***ko***	*band*	*kar,*	*hamne*	*pūre*	*bāhar*	*ko*	*band*	*kar*
one	door	ACC	close	do.CV	1PL	all	outside	ACC	close	do
diyā		*hai.*	*…*	*apne*	*kamre*	*kā*	*darvāzā*	*band*	*kar*	*sārī*
give.PFV.3M.SG		PRT		REFL	room	of	door	closed	do.CV	all
duniyā	*ko*	*bāhar*	*band*	*kar*	*diyā.*					
world	ACC	outside	closed	do	give.PFV.3M.SG					

'By closing a (mere) door, we have locked up the whole outside. (…) By closing the door of our room, we have locked outside the whole world.'

The door in the first sequence, although appearing as new information and not specific, is singled out as responsible for huge consequences, in contrast with its triviality: hence the marking. In the second occurrence, this disparity is already given, and it is the event as a whole (to lock oneself in one's room) that is emphasized: hence the absence of marking.

In (18), this object is already present in the anterior context, where the village head asked the master, Guruji, to open a lock on a door. In (18a), lock, the object, is topicalized by its position and it is definite, however it is not marked: what is emphasized is the inference of the speaker's ability of the speaker to do the unlocking, since he had locked the door himself. Besides, the subject is focalized (preverbal position). In contrast, in the very next sequence, the same lock, again in a topic position (18b), is given centre stage because the protagonist is confronting it for itself (testing its solidity), and since, in segment (18c) as well, the process singles out the lock (and key) as the centre of everybody's attention, although it is non-topicalized. When the protagonist goes to open the lock, everybody's attention shifts from the lock to the process of opening the lock:[4]

(18) Hindi (Vinod Kumar Shukla, 1996, *Khilega to dekhenge*)

a. *'Yah tālā maĩne xud lagāya hai',*
this lock 1SG.ERG REFL put.PRF 3M.SG
'This lock, I put it myself,'

b. ***tāle ko*** *Gurūjī ne jhanjhanāyā. (…)*
lock ACC Guruji ERG shake.PFV.3M.SG
'Guruji shaked **the lock** noisily.'

c. *'Maĩ* ***tāle ko*** *khol saktā hũ̃,* *cābī mere pās hai'.*
1SG lock ACC open can PRS.1M.SG key 1SG near be.PRS.3SG
'I can open **the lock**, I have the key with me'.

[4] As confirmed by his wife's insistence on the act of opening, totally backgrounding (omitting) the object: *bahār* '*khaṛī uskī strī ne kahā 'maĩ khol dũ̃?'* 'His wife, who stood outside said 'Shall I open it (myself)?'

d. *Unhõne* *cābī* *ṭēṭ* *se* *nikālī.* *Ve* ***tālā*** *kholne* *jā*
3.HON.ERG key belt ABL take.out.PFV.F.SG 3HON lock open go
rahe *the.*
PROG PST.3HON
'He took the key from his belt. He was going to open the lock.'

What such examples highlight with marked objects is their saliency (Croft 1991: 155; Montaut & Haude 2012), a notion I am invoking in the sense of Dalrymple & Nikolaeva (2011: 14–15, 57) on the role played by a referent in the pragmatic structure of the proposition, rather than Næss's (2004) more general interpretation of the term (which focuses on the question as to which entities are of greater interest for human perception in general).

3 Particular clause types in Hindi

3.1 The case of non-promotional passive

A characteristic of the Hindi passive, apart from the fact that it applies equally to intransitives, is that it is very frequently non-promotional, and retains the object marker *ko* for the noun which is the corresponding object in the equivalent active clause, with the result of blocking the agreement (cf. example (1c) above). The conditions for marking the ex-object are not the same as those form marking the object in an active sentence and an attempt is made below to define them better. Given the fact that promotional passive is also frequent, and consequently marked objects in the passive are less frequent than in the active, one would expect that the obligatorily marked objects of an active sentence such as a human referential object is better retained in the passive sentence than inanimate objects, which are only optionally marked in the active sentence.[5] But this is not the case. Unmarked human patients which are absolutely compulsory in active sentences, such as first person pronouns (19b) or proper nouns (20), are quite frequent, as are marked inanimates in (21) and (22):

(19) Modern Standard Hindi (own data)

a. ***mujhe*** *aspaṭāl* *le* *jāyā* *gayā*
1SG.ACC/DAT hospital take go PASS.PFV.3M.SG
'I was taken to the hospital.'

b. ***maĩ*** *aspaṭāl* *le* *jāyī* *gayī*
1SG hospital take go PASS.PFV.F.SG
'I was taken to the hospital.' (feminine speaker)

[5] In keeping with Aissen's (2003: 468) "basic hypothesis: if overt marking is possible with direct objects with property α, then it is possible with direct objects with property β, where β dominates α".

(20) Modern Standard Hindi (*Times of India*, January 2013)
śef Hemant Oberāy apne das sahyogiyõ kesāth vahā̃ bheje gae
Chef Hemant Oberoy REFL ten helper.M.PL with there send PASS *the*
PPRF.M.PL
'The chef Hemant Oberoi had been sent there with ten of his helpers.'

(21) Modern Standard Hindi (*Times of India*, January 2013)
mere hazārõ samarthakõ ko *Madurai ikāī se nikāl diyā*
my thousand supporter.M.PL ACC Madurai unit from expel give
gayā hai
PASS PRF.M.SG
'Thousands of my supporters have been ousted from the Madurai unit.'

(22) Modern Standard Hindi
a. ***mṛtyu ko*** / ***samay ko*** *rokā nahī̃ jā saktā*
death ACC time ACC stop NEG PSV can.PRS.3M.SG
'Death / time cannot be stopped.' (single entities, common knowledge) (own data)
b. *par bahut dinõ tak sthagit* ***maut ko*** *bhī nahī̃ jiyā jā*
but many days till postponed death ACC even NEG live PASS
saktā
can.PRS.3M.SG
'But one cannot live even a deferred death for very long.' (Vinod Kumar Shukla, 1996, *Khilega to dekhenge*)
c. ***unke vilamban ko*** *24 janvarī kī subah us vaqt kiyā*
3PL.GEN suspension ACC 24 January of morning that time do
gayā jab…
PASS.M.SG when
'Their suspension occurred on the morning of January 24 when…' (*Times of India* 13/1/2015)

The marking of such inanimates, which are essentially compact abstract nouns, is common to active and passive sentences. The non-marking of human patient in contrast is possible only in passive sentences. The fact that the marking of abstract nouns such as in series (22), is maintained irrespective of the construction, whether active or passive, seems to suggest that this category may be deemed as ranking high in the hierarchy of markable objects.

3.2 Reduced passive clauses

Passive nominalizations do not confirm this equal frequency of marked human and inanimates, since human objects behave quite differently from inanimates in reduced passive clauses, and there is a triple distinction for inanimates. In Hindi, the nominal or adverbial reduction of a clause, whether active or passive, requires the genitive marking of its subject when distinct from the main subject ((23a) and (23b)), with a few exceptions (23c) corresponding to nouns analyzed as pseudo-incorporated (Dayal 2011) and analyzed in Montaut (2012) as anti-salient, or as having extremely low individuation.[6]

(23) Modern Standard Hindi (own data)

a. *āpkā* *yahɑ̃* *ānā* *mujhe* *bilkul* *acchā* *nahĩ* *lagā*
2H.GEN here come.INF 1SG.DAT really really NEG seem.PFV.M.SG
'I did not like at all (the fact) that you came here.'

b. *rām* *ke* *āte* *(*rām* *āte)* *hī* *sab* *gāyab* *ho* *gae* *the*
Ram GEN coming Ram coming just all.M.PL disappeared be go PPRF.M.PL
'Right after Ram came, all had disappeared.'

c. *andherā* *(*?ke)* *hote* *hī* *sab* *gāyab* *ho* *gae* *the*
darkness GEN being just all.M.PL disappeared be go PPRF.M.PL
'Right after the coming of darkness all had disappeared.'

In the nominalized passive clause, the patient is in the subject position and can either be marked by accusative *ko,* by the genitive or unmarked, depending on the type of passive (promotional or not) and on the type of (promoted) object (animate vs. inanimate referent, individuation). While a human patient is obligatorily marked in the active and optionally marked in the passive, the nominalized clause echoes both possibilities with the optionality of a regular subject marking in the genitive and a retention of the accusative marking, but it cannot remain unmarked (24):

(24) Modern Standard Hindi (Bhatt 2007: 9)
Rina *kā* / *ko* / **Ø* *bāzār* *mẽ* *dekhā* *jānā* *śaram* *kī* *bāt* *hai.*
Rina GEN / DAT market in see PASS.INF shame of thing is
'For Rina to be seen in the market is a matter of shame.'

In contrast, inanimate nouns may either be marked as ordinary subjects, retain their object marking or have no marking at all like the so-called incorporated objects:

[6]The way Dayal (2011) and Mohanan (1994) define incorporation excludes the morphophonological features usually associated with the notion, hence the suggested appellation of "semantic incorporation" (Dayal 2011).

(25) Modern Standard Hindi (Bhatt 2007: 9; author's translation)

Peṛ	*kā*	/ *ko*	/ *Ø*	*is*	*tarah*	*kāṭā*	*jānā*	*śaram*	*kī*	*bāt*	*hai.*
tree	GEN		DAT	this	way	cut	PASS.INF	shame	of	thing	is

'The fact that the/a tree was cut in this way/this kind of tree cutting is a matter of shame.'

3.3 The opposite type of noun-verb relation: "Incorporated" objects

Example (25) shows a distinct meaning of the unmarked noun, devoid of any individuation to the point of being incorporated. The notion of (semantic) incorporation in Hindi was elaborated by Dayal (2011) to account for a type of bare nominals with special behavior, particularly in disallowing pronominal anaphorization. Such objects fail to control agreement in sentences ordinarily constraining object agreement, namely ergative sentences involving a complement infinitive (26), and abilitative or obligative sentences with transitive main verb in the infinitive (27). The standard Object-Verb agreement occurs in (26b) and (27b), where the feminine object *sāikil* 'bike' controls the agreement of the matrix verbs 'do' and 'come' as well as the infinitive 'drive', which in Hindi, may vary in gender. In (26a) and (27a), on the contrary, it does not vary, and the infinitive remains in the masculine form, controlling the agreement of the matrix verb, as do intransitive verbs (26c):

(26) Modern Standard Hindi (own data)

a.

bacce	*ne*	*sāikil*	***calānā***	*śurū*	*kiyā*
child.M.SG	ERG	bike.F.SG	drive.INF.M.SG	beginning	do.PFV.3M.SG

'The boy started to ride a bicycle.' (has started bicycle riding)

b.

bacce	*ne*	*sāikil*	***calānī***	*śurū*	*kī*
child.M.SG	ERG	bike.F.SG	drive.INF.F.SG	beginning	do.PFV.3F.SG

'The boy started to ride a bicycle.'

c.

baccõ	*ne*	*skūl*	***jānā***	*śurū*	*kiyā*
child.M.PL	ERG	school	go.INF.M.SG	beginning	do.PFV.3M.SG

'The children started going to school.'

(27) Modern Standard Hindi (own data)

a.

mujhe	*sāikil*	***calānā***	*ātā*	*hai*
1SG	bike.F.GS	drive.INF.M.SG	come	PRS.3M.SG

'I know how to ride a bicycle (how to cycle).'

b.

mujhe	***sāikil***	*calānī*	*ātī*	*hai*
1M.SG	bike.F.SG	drive.INF.F.SG	come	PRS.3F.SG

'I know how to ride a bicycle.'

In (26a) and (27a) the constituent triggering agreement is the whole infinitival clause, sometimes considered to be an instance of incorporation of the object into the verb since *sāikil calānā* "bicycle drive" it behaves in this respect like an intransitive verb.

Although both alternating constructions can be used in similar unmarked contexts, there is a preference for the non-agreeing type, with some conventional object-verb expressions like 'drink tea' or 'buy vegetable'.[7] Here, the infinitive triggers agreement on the matrix verb:

(28) Modern Standard Hindi (own data)

mujhe	*sabzī*	***kharīdnā***	/	??	*kharīdnī*	*hai*
1SG	vegetable.F.SG	buy.INF.M.SG			buy.INF.F.SG	be.PRS.3.SG

'I have to buy vegetable.'

To summarize, only "incorporated" objects with very low individuation can dispense with indexation on the verb in the relevant clause types. Marked objects pattern at the opposite side of the following hierarchy of objects: incorporated (unmarked) > unmarked (non incorporated) > marked.

The triggering feature for this triple syntactic differentiation is individuation. It is not, directly, topicality, nor is it the role played within the focus, although of course, the semantic feature individuation is also relevant in information structure.

4 The emergence of object marking

Most scholars do not date the emergence of Modern standard Hindi before the 18th century. Previous to this stage, the language, although it is systematically called medieval or ancient Hindi, is expectedly not standardized, and as such it is much closer to some of the regional varieties today analyzed as independent languages. What is generally called "Old Hindi" is the so-called *sant bhasha*, a poetic language forged by the first mystic poets who expressed their religious opposition to the brahmanic world order by using popular vernacular speech instead of Sanskrit. This language, which was first used by the devotional mystic Kabir (14th c.), and later by Mira Bai (16th c.), has been fairly well studied and shown to display various regional features, taken more from the Eastern languages in Kabir, and more from the Western varieties in Mira, but fused in what will become the literary *koine* of medieval Northern India. In what follows I will discuss the three main stages of the DOM evolution in pre-modern "Hindi".

4.1 First New Indo-Aryan stage: 14th century

During the first stages of Hindi and of other New Indo-Aryan languages (NIA), the inflectional system of Sanskrit is in the process of being replaced by adpositions (nominal cat-

[7] Similarly, in ergative sentences, like 'I began/wanted to drink tea' or 'I wanted to buy vegetables' minimal individuation is required for the object of the complement infinitive to trigger agreement, and agreement with the object is highly improbable with the bare noun (as opposed to 'I wanted to buy various vegetable' or 'drink this excellent tea'. More examples in Montaut (2012).

egory) and auxiliaries (verbal category). Yet this process is far from being completed and the absence of clear relators is a common feature of ordinary discourse, the few oblique cases maintained in the language being used for various syntactic purposes: the *-i* locative for the agent in past transitive processes, and a syncretic oblique *-hi* (derived from the fusion of the old dative/instrumental already achieved in Middle Indo-Aryan) for all kinds of obliques. Most of the time, nouns remain unmarked, the meaning being easily recoverable from the context and sequence since sentences are usually minimal. This *-hi* ending is the most frequent marker of objects in Kabir, whereas the postpositional marking (*kũ/kau*) is just starting to appear (Strnad 2013: 325), but in both inflectional or adpositional cases, the marking is far from systematic.

Human objects, including proper names, are either marked (29b) or unmarked (29a), and sometimes in the same sequence both marked and unmarked proper nouns occur (29b):

(29) a. *Hiranākasa* *māryau.*
Hiranakashyapu kill.PFV.M.SG
'[He] killed Hiranyakashyapu.'

b. *Rāma**hi*** *janai* *janai* *Rahimã̃na.*
Ram.ACC know.PRS.3SG know.PRS.3SG Merciful.Ø
'[He] knows Ram, he knows the Merciful.' (Kabir, verse 302)

Even a proper name, if occurring with a predicative adjective, can be unmarked (30a), whereas other human referents can be marked (30b):

(30) a. *Rāma.Ø* *kari* *sanehī.*
Ram make.CV dear
'Making Ram your dear.' (Kabir, verse 381)

b. *āpana* *ãdha* ***aura*** ***kũ*** *kahai* *kanãnã*
self blind other ACC say.PRS.3SG one-eyed
'[Being] himself blind, he will call others one-eyed.' (Kabir, verse 149)

The only category which is systematically marked is the personal pronoun (1st and 2nd person), and occurrences of the 3rd person are frequently unmarked even when referring to a human entity.

(31) *jaga.Ø* *maĩ* *deṣũ̃* *jaga* *na* *deṣi* ***mohi***
world 1SG see.PRS.1SG world NEG see.PRS.3SG 1SG.ACC
'I see the world, the world does not see me.' (Kabir, verse 76.3)

Given the fact that humanity, which is today the main (compulsory) trigger for object marking, does not apply, we would expect that inanimate objects are systematically unmarked, but this is not the case, and the marking of inanimates seem to be as random as the marking of human objects. Example (32) for instance displays two parallel clauses patterning identically, with the same construction, the same semantic class of objects

(the so-called class of single entities), the same relation between predicate and object and the same ordering of both sequences. Yet 'ocean' is marked and 'sun' is unmarked:

(32) *ulaṭī* *Gangā* *sāmudra-**hi*** *sosai,* *sasihara* *sūra.Ø* *grāsai*
reversed Ganga ocean-ACC dry.up.PRS moon sun swallow.PRS
'The reversed Ganga dries up the ocean, the moon swallows the sky.'

The adpositional marking by means of *kū/kau*, infrequent and more recent, occurs in similar conditions, and most often without apparent reason. In (33), we may hypothesise that the relative pronoun is topicalized since the Hindi correlative system amounts to topicalizing the relative clauses (Gupta 1986; Montaut 2012) in the same way as conditionals (Haiman 1978), but in (34), the noun *pada* 'word, line', which is a marked object, is not the head of the relativized expression:

(33) *jākũ* *yahu* *jaga* *ghini* *kari* *cālai*
REL.ACC DEM world horrible do.CV go.PRS.3SG
'That which this world avoids with disgust.' (*lit.* that which considering horrible the world goes by) (Kabir, verse 185.4)

(34) *yā* *pada* *kũ* *bujhai* *tākũ* *tinyũ* *trībhuvana*
DEM verse ACC understand.PRS.3SG 3SG.DAT three world
sūjhai
think.PRS.3SG
'[Who] understands this pada, he knows the three worlds.'

In (34) the reason why the inanimate is marked is probably, apart from definiteness (not in itself a triggering factor as shown by (29)), the intrinsic importance of the word 'word/verse' in the ideological context of the time: for a devotional mystic nothing is more central and more emphasized than the deity's speech, or the word pointing to the deity. What is also noticeable is the parallel marking of the marked object (*jākũ, pada kũ*) and the dative subject (*tākũ*) by the same postposition in (33).

4.2 Second stage: 16th century

In 16th century classical texts like Tulsidas Ramayana (T), the inflectional marking (*-hi*) is maintained yet the postpositional marking occurs more often, in conditions similar to the ones in stage 1: pronouns for 1st and 2nd person are consistently in the oblique, (35) and (36), as in the stage 1, and the same oblique form is also used for oblique subjects (36). But unlike the earlier period, human objects are systematically marked ((35) and (37)), and only exceptionally unmarked, either as proper nouns or pronouns (38):

(35) ***tehi*** *na* *jānā* *nṛpa.Ø,* *nṛpa-**hi*** *so* *jānā*
3SG.OBL NEG know.PFV king king-OBL 3SG know.PFV
'The king did not recognize him, he recognized the king.' (T 140)

(36) *kahā* *tapas* *nr̥pati.Ø* *jānaũ* ***tohi*** … *lāg* *bhala* *mohi*
said hermit king know.1SG 2.OBL seem good 1SG.OBL
'Said the hermit: "I know you as the king [this move] pleased me/I liked"' (T 160)

(37) a. *Raghupati-**hi*** *nihāri* *prabhū-**hi*** *citaï.*
Sun.lord-OBL look.CV Lord-OBL look.CV
'[Sita] seeing Rama (king of sun linage).' '[Sita] looking at the Lord.' (T 140)

b. *Sīya-**hi*** *biloki.*
Sita-OBL see.CV
[Ram] 'Looking at Sita.' (T 250)

(38) a. *Rām* *biloke* *log* *[…]* *citaï* *Sīya* *kr̥pāyatan* *jāni* *vikal*
Ram see.PFV people look.CV Sita gracefully knew worried
biseṣi.
special
'Ram saw the folk, […] looking at Sita with mercy he perceived her great distress.' (T 251)

b. *rāu* *tr̥śit* *nahĩ* *so* *Ø* *pahicānā*
prince thirsty NEG 3SG recognize.PFV
'The king, overcome by thirst, did not recognize him.' (T 158)

Whereas the unmarkedness of the collective *log* 'people' is still possible (cf. §1), the zero marking of the proper noun Sita is no longer grammatical, even though it was quite usual two centuries earlier. Indeed, all instances of X looks at/sees Y exhibit marking of proper names in (37): whether Ram looks at Sita or Sita at Ram, whatever verb is used (*cita* 'look at/gaze', *nihār* 'see/look', *bilok* 'see/look').

Another difference with the previous stage it seems to be a more frequent marking of nouns in small clauses (39) – which however is still not systematic (40) – even when the small clause includes a participle (41):

(39) *bhale-**hi*** *manda* *manda-**hi*** *bhale* *karahũ̃*
good-OBL vile vile-OBL good do.PRS.2SG
'You debase the good man (make vile the good), you praise the vile.'

(40) *kol* *biloki* *bhūpa* *baṛa* *dhīrā* *bhāgi* *paiṭh* *giriguhã̃*
boar see.CV king much determined flee enter mountain.cave
gabhīra
deep
'Seeing the king so much determined the boar entered a deep cave.'

(41) *jo* *prabhū* *tumah* *bipin* *phirat* *dekhā*
REL Lord 2PL forest roaming see.PFV
'The Lord whom you saw roaming in the forest.'

Examples (37) to (41) are from Tulsidas *Ramayana*, in an Eastern variety (Awadhi), but in the Western dialects the situation was similarly unconstrained. Even proper nouns can remain unmarked, as was the case in the first stage:

(42) *māī* *rī* *mhã̃* *liyā* *Govinda* *mol*
sister INTERJ 1SG take.PFV Govinda buy.CV
'Sister, I bought (and took) Govinda [a name for Krishna].' (Mira Bai, 16th c.)

4.3 Third stage: 17th–18th centuries: the modern system

There is not much to comment after the 17th century since the system does not present noticeable differences with the modern system. The literature available during this period makes a more liberal use of Persian idioms and structures (particularly ezafe for determination of nouns) than in earlier Hindi and today standard Hindi. Ezafe specified objects can be either marked (in (43a) 'fire of torment') or unmarked (in (43b) 'heat'): what prevails is the degree of topicality in the discourse:

(43) a. *wafādārī* *ne* *dilbar* *kī* *bujhāyā* ***ātiś-e-gam*** ***ko***
faithfulness.F.SG ERG lover of extinguish.PFV.3M.SG fire-of-torment ACC

b. *ke* ***garmī*** *dafā* *kartā* *hai* *gulāb* *āhistā* *āhistā*
that/as heat off make PRS.3M.SG rose slowly slowly
'My faithful love has quenched the fire of my love (FOC), as rose dispels the effect of heat, step by step.' (Wali, mid. 17th c.)

(44) *jab* *sõ* *dekhā* *nahĩ̃* *nazar-bhar* *kākul-e-muśkin-e-yār*
when from see.PFV NEG glance-full locks-EZ-scented-EZ-beloved
'Since I did not see fully her [my love's] scented locks (FOC).' (Wali, mid 17th c.)

In the two parallel constructions (X diminishes Y) of (43), the first object, an abstract NP, is extracted and put in a postverbal position at the rime, in conformity with its discourse function, since love torment is the main topos of the poems. It is marked. In turn, the second object, also an abstract noun, remains preverbal as an ordinary part of the wider focus and is unmarked. However, in (44), an ezafe-specified object similar to (43a), 'scented locks of the beloved', remains unmarked although concrete and in a postverbal position; even though it is strongly emphasized by its position, it is not given centre stage. Discourse saliency is the triggering factor, as it is today for inanimates.

Objects are always marked when controlling nominal or adjectival adjuncts, either relative pronouns with inanimate reference (whereas relative pronoun with human referent could be unmarked in the earlier period) or nouns, inanimate as well as animate:

(45) *ke* ***jisko*** *kasīne* *kabhī* *vā* *na* *dekhā*
that REL.ACC INDEF.ERG ever open NEG see.PFV.M.SG
'That which (ACC) nobody has seen bloom.' ('which' = merā dil 'my heart')

(46) *kiyā* *mujh* *īśq* *ne* ***zālim*** ***ko*** *āb* *āhistā* *āhistā*
do.PFV.3SG my love ERG despot ACC water slowly slowly
ke *ātiś* ***gul*** ***ko*** *kartī* *hai* *gulāb* *āhistā* *āhistā*
that/as fire flower ACC do PRS.3FSG rose slowly slowly
'My love has melted the despot (made this despot water), step by step, as fire distil (make the flower rose-perfume) the essence of rose, step by step.' (Walid, mid 17th c.)

The following tables provide an overview of the different referent types according to the animacy and definiteness scales (1), and the syntactic constraints (2).[8]

Table 1: Animacy and definiteness constraints on DOM

		Stage 1: 14 c.	Stage 2: 16 c.	Stage 3: 17–18 cc.	Modern Hindi
Human objects	SAP pronouns	always	always	always	always
	Proper noun	optional	frequent	always	always
	Third person pronoun	optional	frequent	always	always
	Other human nouns	optional	frequent	always	always
Inanimate nouns	Specific nouns	optional	optional	optional	optional
	Abstract (compact) nouns	optional	optional	frequent	frequent

Table 2: Syntactic constraints on object marking

	Stage 1: 14 c.	Stage 2: 16 c.	Stage 3: 17–18 cc.	Modern Hindi
Human noun in small clause (human referents)	optional	frequent	always	always
Inanimate noun in small clause with participle	optional	optional	frequent	very frequent
Passive finite clauses	no data	no data	optional (human, inanimate)	optional (human, inanimate)

The only objects obligatorily marked in stage 1 and 2 are first and second person pronouns, whereas neither person names, nor titles and nouns referring to culturally prominent persons are consistently marked. Objects controlling adjectival / nominal adjuncts

[8]Table 1 does not take into account the cases of deranking. In Table 2 data is lacking for passive transformation in the earlier stages of the language since passive was rare and always with a modal meaning of incapacity.

are still only optionally marked before stage 3 (17th c.). Inanimates are optionally marked right from stage 1 as well as animates other than first person pronouns. At no stage was marking used as a distinguishing device, contrary to Comrie's (1979) or Croft's (1988) hypothesis, and in accordance with the observations made by Malchukov (2008: 213) that the discriminatory function is quite rare across languages, by Arkadiev (2009) that it is not relevant for Indo-Iranian languages, and by de Hoop & Narasimhan (2005) that it is absent in Hindi.

Regarding pronouns, the consistent marking from the very beginning of 1st and 2nd person pronouns should not be over-emphasized, since they retained the accusative inflection till the late Middle Indo-Aryan stage as opposed to all other nominal categories (including 3rd person pronoun: unmarked in (38b) and marked in (35)). Table 3 is according to Bubenik (2006) the table of pronominal forms in the late Apabhramsha stage (10–11th c.): 1st and 2nd persons retain an accusative, which is distinct both from nominative and from dative/ablative, whereas accusative is fused with nominative for the 3rd person:

Table 3: Syntactic constraints on object marking

1st	NOM *hau/haũ* (Sk *aham*)	ACC *maï, maĩ, maĩ̃, me* (Sk *mām*)	DAT *mujjh*
2nd	NOM *tuhu/tuhũ* (Sk *tvam*)	ACC *paï, paĩ, taĩ* (SK *tvām*)	DAT *tujjh*
3rd	NOM/ACC *so* (M.SG), *sa* (F.SG)		

A considerable morphological restructuring of the system occurred between this stage and the first stages of New Indo-Aryan, with the genitive in *-r-* in most regional varieties, and various oblique forms depending on the region, which came to be used both for marked accusative and dative (36), before adpositions substituted for inflectional morphemes with the same bi-functional use as the old dative/accusative. Remarkably, modern standard Hindi maintained the oblique form *mujh* and *tujh* before postpositions and the old inflectional forms *mujhe* and *tujhe* for dative/accusative, in alternation with the adpositional forms *mujhko* and *tujhko*, and it extended this system to the third person: the direct (*vah*) and oblique (*us*) cases are distinct, and in the dative accusative there are two alternate forms, one inflectional (*use*) and one adpositional (*usko*). Yet the fact that the distinctive accusative was retained throughout Middle Indo-Aryan certainly played an important role in the marking of 1st and 2nd person pronouns, in contrast with third person pronoun and other nouns.

5 Object marking in the "dialects" of Hindi

A good deal of ambiguity prevails in the field of language description since these language varieties are considered, administratively and politically, as dialects of Hindi, with various names and inner variation. Yet linguistically the variations in comparison with modern standard Hindi are so important that many regard them as distinct languages:

nominal and verbal flexions are different, some languages (like Bhojpuri, Awadhi, Maithili) ignore grammatical gender and ergative alignment, others have three grammatical genders or had them until recently (Western Rajasthani, or close to the three genders, languages like Gujarati and Marathi). The modern stage of these "dialects" itself displays great variations regarding the object marking, some maintaining the old situation as sketched above, some closer to the system of standard Hindi. A comprehensive representation of the whole picture, that involves 331 distinct varieties, out of which there are at least a dozen distinct languages, is obviously outside the limits of this study. I will therefore limit myself to the presentation of a few features that are distinct from modern standard Hindi, and that may help explain the general trends in the evolution of object marking.

Let us begin with a step ahead of the evolution of standard Hindi, if one takes agreement to be a reliable marker of the integration into the grammatical system. In Hindi the verb never agrees with a marked object, and indexation on the verb is only by default. In Marwari, a Western dialect of Rajasthan, like in Gujarati, on the contrary, the marked object is indexed on the verb (gender number agreement) as shown by (47). This is also the case in Magahi, an Eastern dialect (Bihari) that shows agreement with marked objects, though somewhat differently, since all animate participants are indexed in the verb (48):

(47) Marwari (Khokhlova 2001)

mhaĩ	*śaraṇ*	*naĩ*	*dekhā*
1SG	Sharan.F.SG	ACC	see.F.SG

'I have seen Sharan.'

(48) Magahi (Verma 1991)

ham	*dekh-l-i*	*ham*	*dekh-l-i-a*	*ham*	*dekh-l-i-ain*
1SG	see-PST-1	1SG	see-PST-1-3NONH	1SG	see-PST-1-3H

'I saw it.' 'I saw him (servant).' 'I saw him (guru).'

One could also argue that indexing the marked object the same way as the unmarked object is not a step further if it is expected that marked objects should also be indexed in a marked way. Yet no example in the various stages of object marking in Indo-Aryan displays an agreement with marked objects prior to agreement with unmarked objects (the ergative pattern precedes the emergence of DOM by far), whereas all other examples point to the agreement blocking effect of DOM.

Another factor observed in certain regional varieties which is at discrepancy with standard Hindi and its historical emergence is the correlation in object and subject marking: in 19th century Kumaoni for instance, no marked object occurs with an ergative agent, as in (49), even when controlling an adjunct, as in (50), whereas with a nominative subject, objects are marked when human or specific centre-staged inanimates, as in (51):

(49) Kumaoni (Grierson 1903–1928: IX-4)

myārā	*dagaṛiyana.le*	*ek*	*bāman*	*pakaṛo*
my	companion.M.PL.ERG	one	Brahmin	seize.PFV.M.SG

'My companions captured a Brahmin.'

(50) Kumaoni (Grierson 1903–1928: IX-4)

prithvi.m	*lag*	*yo*	*pahāṛ*	*hamārī*	*thātī*	*raci*	*dev.le*
earth.on	too	this	mountain	our	place.to.live	make.PFV	god.ERG

'God made this mountain a place to live for us on earth too.'

(51) Kumaoni (Grierson 1903–1928: IX-4)

tab	*ū*	*wī*	*bwaj*	*kaṇi*	*apan*	*ghar*	*huni*	*lī*	*āy*
then	3SG	DEM	load	ACC	REFL	home	ALL	take	come.PFV

'Then he brought this load to his house.'

According to Stroński (2013) and Sharma (1987), object marking has now in some varieties started to extend to ergative sentences: a modern development, still unknown in standard Kumaoni, as in (52a), which contrasts with Garhwali, very closely related to Kumaoni and part of the same sub-group of Pahari languages, which allows the object to be marked in presence of an ergative agent, as in (52a):

(52) Kumaoni (Krzysztof Stroński p.c.)

a.

mī.le	*naunai*	**saṇī*	*baĩṭ*	*le*	*māre*
1SG.ERG	child	ACC	cane	INS	strike.PFV

'I hit the boy with a cane.'

a. Garhwali (personal field work)

mī.na	*naunai*	*taĩ̃*	/	*saṇī*	*(nauno.Ø)*	*baĩṭ*	*na*	*māri*
1SG.ERG	child	ACC		ACC	child	cane	INS	strike.PFV

'I hit the boy with a cane.'

In Garhwali, the marked object is allowed in a sentence displaying an ergative agent right from the first attested texts collected by Grierson (1903–1928) (53), whether the object is inanimate or human, but it is not compulsory even today, except for proper names (54). Its optionality is not constrained by the presence vs. absence of an ergative agent. In folk songs, which are linguistically archaic, it is optional, and prosodic considerations, for instance, may possibly apply, as in (55) where a married girl is not allowed to visit her family. The objects nouns consisting of one long syllable and one short, 'mother', 'brother' are marked, while nouns with two long syllables 'father', 'sister in law', 'sister' remain unmarked.

(53) Garhwali (Grierson 1903–1928: IX-4)
ve-na *sattu* *saṇī* *ve* *talau* *mā* *ḍāl* *dini/dine*
3SG-ERG sattu ACC DEM lake in throw gave
'He threw the sattu (a sort of cereal) in the lake.'

(54) *Tā* *Anīl* *Rawat* *taĩ/saṇi/kū* *jāndi* *cha?*
2SG Anil Rawat ACC/ACC/ACC know PRS
'(Do) you know Anil Rawat?'

(55) a. *chorie,* *mu* *jāṇ* *na* *deule*
girl 1SG go NEG give.FUT.1SG
'girl, I won't let you go.' (GCT 124)

b. *tero* *bāpū* *yakhī* *bulaulo,* *mu* *jāṇ* *na* *deule*
your father here call.FUT 1SG go NEG give.FUT.1SG
'I will invite your father, I won't let you go.'

c. *terī* *amī* *ku* *yakhī* *bulaulo,* *mu* *jāṇ* *na* *deule* *...*
your mother ACC here call.FUT, 1SG go NEG give.FUT.1SG

d. *tere* *bhāi* *ku* *yakhī* *bulaulo,* *mu* *jāṇ* *na* *deule* *...*
your brother ACC here call.FUT 1SG go NEG give.FUT.1SG

e. *terī* *bhābhī* *yakhī* *bulaulū,* *mu* *jāṇ* *na* *deule* *...*
your sister.in.law here call.FUT 1SG go NEG give.FUT.1SG

f. *terī* *dīdī* *yakhī* *bulaula,* *mu* *jāṇ* *na* *deule* *...*
your sister here call.FUT 1SG go NEG give.FUT.1SG
'I will invite your mother, I won't let you go. I will invite your brother, I won't let you go. I will invite your sister-in-law, I won't let you go. I will invite your elder sister, I won't let you go.'

Similarly in Bhojpuri, which is not a language as closely related as Garhwali and Hindi, popular songs display unmarked human objects such as 'my child' in (56a), whereas in modern speech a similar object 'my son' is obligatorily marked with the dative/accusative marker *ke* in (56b):

(56) Bhojpuri (Saxena 1937 [1970])

a. *apnā* *bālaka* *mohi* *dīte,* *apnā* *bālaka* *nahĩ* *debo*
REFL male-child 1SG.DAT give.COND.1SG REFL male.child NEG
give.FUT.1SG
'If you give me your son – I will not give [you] my son.'

b. *tū* *apnā* *laïkā* *ke* *bhejā*
2SG REFL boy ACC send.IMP
'Send your son.'

Obligatoriness in flagging human objects giving the priority to human referents over inanimates is clearly a recent phenomenon, in Bhojpuri as well as in Hindi, and it is limited to certain dialects. Discourse related triggers are active everywhere, and affectedness does not play a noticeable role (cf. (1) and (34)). As for agreement, it is exceptionally present in the Hindi belt and has been attributed to contact with in the case of Magahi (see example (48)): Verma (1991) suggests that this peculiarity of the language, which also presents numerous cases of double agreement, results from contact with Mundari, an Austro-Asiatic tribal language spoken in central-eastern India. With few exceptions, DOM can co-occur with differential agent marking when the subject is an ergative agent, which is a clear indication that the discriminatory function is weakly relevant. It never co-occurs with an experiencer subject in the dative case, nor did it in stage 1 (34), because DOM is strictly restricted to formally transitive clauses, while experiential clauses, even with two arguments, are not transitive *sensu stricto*.

The fact that the accusative marker is morphologically identical to the dative marker, whatever the form of the marker in the various dialects, also accounts for this situation. In Dravidian languages, where the accusative is distinct from the dative, in Tamil for instance, *-ai/e* (ACC) vs. *-akku* (DAT), such a constraint does not hold:

(57) Tamil (own data)

enakku	*avar.ai*	*pidikkum*	/	*teriyum*
1SG.DAT	3M.SG.ACC	like		know

'I like / know him.'

(58) Modern Standard Hindi (own data)

mujhe	*vah*	**usko*	*acchā*	*lagtā*	*hai*	/	*milā*
1SG.DAT	3SG	3SG.ACC	good	seem	PRS.3SG		meet.PFV

'I like / met him.'

6 Some hypotheses regarding the origin of the marking and the markers

6.1 Contact with substratum, adstratum and prestige language

As already mentioned, DOM is part of the dozen features that are systematically considered to define South Asia as a linguistic area, along with dative subjects, prevalence of complex predicates, coverbs, causative derivation, lack of 'have' verb, head final order, reduplication, etc. (Masica 1976; Emeneau 1980). Its appearance in Indo-Aryan is more or less contemporary with the rise of dative subjects: it has not been inherited from Sanskrit, a inflectional language where accusative is a structural case (all objects are case-marked, a purely syntactic phenomenon). On the contrary, the agglutinative Dravidian languages had, right from the first attested texts (slightly before the Christian era), a DOM marking for human objects (suffix *-ai*), while it developed the Dative Subject pattern much later with a distinct suffix (Murugaiyan 2004), only slightly before

Indo-Aryan languages. Given the importance of structural borrowings from Dravidian in IA, such as the use of coverb and quotative, and the evidence of a Dravidian substratum in the area now occupied by Indo-Aryan speakers (Witzel 1995), Dravidian could be a plausible source for the IA marking. The behavior of the "accusative" suffix *-ai* in modern Tamil, however, is not constrained by transitivity since it can occur with dative subjects, as in (57), unlike in Hindi, as in (60):[9]

(59) Tamil (own data)

enakku	*avar.ai*	*pidikkum*	/	*teriyum*
1.SG.DAT	3M.SG.ACC	like		know

'I like / know him.'

(60) Modern Standard Hindi (own data)

mujhe	*vah*	**usko*	*acchā*	*lagtā*	*hai*	/	*milā*
1.SG.DAT	3SG	3SG.ACC	good	seem	PRS.3SG		meet.PFV

'I like / met him.'

Moreover, the wide time gap observed before the borrowing makes the hypothesis of a structural borrowing dubious. Similarly, Austro-Asiatic languages which also played a non-trivial role in the evolution of early Indo-Aryan (Witzel 1995), have always been around so that a sudden borrowing in the second millennium is little convincing. They consistently index human objects as well as beneficiaries on the predicate, but do not index inanimates, whatever their syntactical function, since indexing is constrained by semantics, particularly the animacy and activity, and by the general grammatical structure as in semantically aligned languages. Moreover, they do not have differentially marked objects:

(61) a. *(in)* *lel-jad-in-a-e*
(1SG) see-PST-1SG-V-3SG
'He saw me' (V marks the predicative function, in a language with no noun-verb polarity)

b. *(in)* *om-am-tan-a-in*
(1SG) give-2SG-PRS-V-1SG
'I give (it/them) to you'

Such features can only very indirectly be deemed responsible for new features in IA, whether DSM (Montaut 2013) or DOM, yet they may have acted as favoring factor.

The other possible source in terms of contact is Persian, which came to be the dominant cultural and administrative language at the time when DOM became systematic in Hindi (16th c. onwards). Extremely influential in the renewal of the predicate lexicon by means of complex predicates (Montaut 2015), Persian, which extensively uses a marker

[9]Note that Bengali also allows the accusative marker, even if the same as the dative marker, in experiential sentences such as Tamil (57), because experiential subjects are in the genitive in Bengali.

(*râ*) (originally a topic marker) for specific objects, is also sometimes credited to have triggered DOM in Hindi/Urdu. Krishnamurti et al. (1986: 143) observe that the development of DOM is more developed in the North Western IA languages than in central and Eastern ones, and conclude on a probable influence of Persian and more generally of central Asian languages.[10]

While none of these hypotheses fully explains the rise of DOM in Indo-Aryan – as expected in keeping with its interpretation as a mainly discourse factor – the latter, allowing for a possible convergence with other substrata in the sub-continent, must definitely be taken into account. The origin of the new case markers has in contrast nothing to do with contact.

6.2 The origin of the case markers

Since the function is anterior to the morphological renewal of markers as seen in examples (29b), (31) and (32) with inflectional forms in *-hī* (§3.1), one can expect that some other case marker, already present in the language, extends its range of functions to the marking of certain objects, and that the dative is chosen for such an extension as for instance the Spanish preposition *a*. But the new Hindi marker appeared at the same time as the other case markers, continuing the oblique flexion of the earlier language, which was largely syncretic and not restricted to goals. It is obvious, however, that in all IA languages, although they display several distinct forms of markers for accusative, the same marker is now used for dative (including DSM) and marked accusative (Krishnamurti et al. 1986): the case meaning specialization (its syntactic function) came later than the marking itself of DOM, and the double use of a single marker as a dative and an accusative has a logic *per se,* which is found in too many languages in the world to be specific to the area.

Now the question remains: why are there so many morphologically unrelated markers for dative/accusative case in languages which are so closely related, in contrast with Dravidian languages, which all exhibit related forms? Marathi for instance has *lā*, Gujarati has *ne*, Konkani, until recently considered a dialect of Marathi has *-k*; Hindi/Urdu has *ko*, Punjabi which is structurally extremely close to Hindi/Urdu and established a distinct identity after the 16th c. has *nũ*, Hindi "dialects" such as central Paharis (Garhwali, Kumaoni) have *saṇī*, Eastern Pahari, such as Nepali, has *lāi*.

The basis used most extensively is *lā* (*le, lāi, lai*), *ko* (*kau, kū, kũ*) or *ne* (*nai, nẽ, nũ*), and neither of them, except *lā* to a certain degree, derives from a clearly allative notion. The base for *lā* and its reflexes for instance is generally derived since Beames (1970 [1875]) from the verbal root *lag*, meaning 'touch', 'be stuck to' (although some scholars have suggested the verb *labh* 'to get, obtain' as an alternative derivation (Tiwari 1955). The regular path is as follows; *lagya* 'having come in touch with' > *lage* >*laï, lai (le)* 'for the

[10]Eastern IA has other devices for marking specificity such as the so-called "article" or "classifier" *-ṭa*, which does not co-occur with the accusative marker as shown by Dasgupta (2015 (manuscript)). Besides, all Dardic languages, spoken in the North West of the South Asian area, have always shared features with Iranian languages, before the Mughal Empire which marked the entrance of Persian as a cultural language in Central India.

sake of', 'with the object of' (Juyal 1976). As for *ko* and its reflexes, it comes from the Sanskrit noun *kakṣa* 'side, place', with intermediate forms closer to the original in certain Pahari varieties (*kakh, kākh, kakhã̃*), initially a locative, which further developed a directional meaning, then became dative/accusative marker (Strnad 2013: 325). Similarly *ne* and its reflexes were initially locatives derived from a Sanskrit noun meaning 'ear': a shortened form of *kaṇhaĩ* according to Tessitori (1914–1916), from **karṇasmin* (itself a reconstructed analogical locative of Sanskrit *karṇe*, the locative case of the noun 'ear'), which is attested in Apabhramsha as *kaṇṇahī* and developed the meaning 'aside, near', then 'towards, to'. Trumpp (1872: 401) also gives the original meaning 'near' for *naï/ne*, a derivation accepted by Tiwari (1955; 1966) and by Chatak (1980) who relates to it the alternate form *kuṇī,* frequent in Garwhali (central Pahari). The originally locative meaning is very clear in (62):

(62) Old Rajasthani (Tessitori 1914–1916: 68–70)

a. *cārāï* *naï* *nirmala* *nīra*
road LOC pure water
'A limpid lake close by the road'

a. *ãv̄yā* *rā* *kaṇhai*
come.M.PL king LOC/ALL
'[They] went to the Raja (king)'

a. *te* *savihũ̃* *naï* *karaũ* *paranām*
3PL all.OBL LOC/ALL do.PRS.1SG salutation
'I bow to all of them (in front of/ for)'

The adessive/locative meaning still visible in (62a), is also the original meaning of the 'side' base (at the origin of *ko*), and the main meaning of the 'touch/be in contact' base (origin of *lai*). As a matter of fact, the word 'ear', is according to Heine & Kuteva (2002: 121), a very infrequent source for dative, and mentioned only as a source for locative.

Other sources for DOM markers are even farther from a goal source or they are semantically totally empty: not common but not rare either (it is present in Sinitic languages, cf. Chappell 2014), is the comitative source, which is found in markers such as Garhwali/Kumaoni *saṇī (haṇī*), from the Sanskrit noun *sanga* 'society, company', then 'with', now the dative/accusative most usual marker. Other unusual markers, also used in Pahari languages, are *taĩ, tai*, derived from the locative of the indefinite *tavati* (*tāvahĩ, tāmhĩ*taaĩ, *tannĩ, tāĩ*) 'so long, so far, up to, till', *thaĩ* from the existential verb *sthā* 'stand', 'exist' and *te/tī*, from the present participle of the verb 'be' in the locative (Sk *bhavati* > *hontai*, *hunti*). One marker has not yet been convincingly traced to a reliable origin, *baĩ, be*, dative/accusative marker in modern Kullui (Western Himalaya) as well as in Bundeli (South Madhya Pradesh).

This *be* is perhaps related to the Garhwali/Kumaoni *bāṭi,* used in these languages as an ablative, and derived from the verbal noun *vartamāna* (from Sanskrit *vr̥t* 'turn, expand', then 'what happens', 'present'). Ablative and goal obviously encode with opposite se-

mantic meanings, but similar "opposite" uses of case markers are extremely common across IA: *te/tī* is also used as an ablative in other northern dialects, *ne* is a frequent marker for ergative (Hindi/Urdu, Panjabi, Marathi) and *le* (a reflex of *lai*) is the Nepali and Kumaoni ergative marker.

Even more striking is the fact that, in the very same language, the same marker may work as an ergative, an instrumental/ablative, and a dative/accusative, as is the case in Bangaru in both southern (63a) or northern (63b)–(63c) varieties:

(63) Bangaru

a. *rupay* *tī* *us-tī* *le* *lo*
money ACC 3SG-ABL take take.IMP
'Take the money from him' (Tiwari 1955: 177)

b. *kutte* *nae* *dande* *nae* *mārya*
dog ACC stick INS strike.INS
'Strike the dog with the stick' (Singh 1970)

c. *balkā* *nae* *toṛiyā* *honge*
child.M.PL ERG break PRSUMPT.3M.PL
'The children have probably broken [it]' (Singh 1970)

All the IA case markers are derived from words with such a vague semantic content that they are able to fulfill all casual functions, with the exception of the new locative *mẽ/mā*, even if in most languages they are now more or less specialized into broad functions. New functions (DOM, EXP) as well as inherited ones (ERG, DAT, INS) selected any of the available markers when case marking shifted from the old inflections, by then much eroded and syncretic, to the new postpositional system during the first part of second millennium. But, interestingly, none developed a specific marker on the Dravidian or Persian model, and none selected a DOM marker distinct from the DAT one.

7 Conclusions

As a result of the identical case-marking for dative and accusative, experiential subjects and marked objects are similarly encoded, and the rise of DOM and DSM is chronologically very comparable: starting with only sporadic non-consistent occurrences during the 14th c. and getting systematic and consistent after the 17th c. Is it an argument for making both processes complementary as suggested by Aissen (2003)? This is highly controversial since experiential subjects are strictly constrained by the lexical semantics of the predicate (and to a certain degree by its morphology since it occurs almost exclusively in Hindi with complex predicates), whereas marked objects obey discourse constraints. Specificity can be considered the more important triggering factor for DOM, yet in order to account for those alternations which at first glance seem to be syntactically constrained (§2.3 and §3) another factor is required, namely discourse saliency. This is not incompatible with Dalrymple & Nikolaeva's (2011) notion of secondary topicality,

nor with the prominence involved in the twin scales of animacy and specificity, yet it also allows us to account for examples where unmarked objects are in a topicalized position and vice-versa. Not surprisingly, the first constraints which emerged during the diachronic evolution of the structure are neither animacy nor specificity but discourse prominence, of which prosodic requirements can be considered an auxiliary. Besides, the existence of a threefold distinction between objects ('incorporated', unmarked and accusative-marked) in nominalizations, depending on their individuation, has no equivalent for subjects.

Abbreviations

1	first person	INS	instrumental
2	second person	INTR	intransitive
3	third person	M	masculine
ACC	accusative	NEG	negation, negative
ALL	allative	NON	non-
COND	conditional	NOM	nominative
CV	coverb	OBL	oblique
DAT	dative	PASS	passive
DEF	definite	PFV	perfective
DEM	demonstrative	PL	plural
DET	determiner	POSS	possessive
ERG	ergative	PPRF	pluperfect
EZ	ezafe	PRF	perfect
F	feminine	PROG	progressive
FOC	focus	PRS	present
FUT	future	PRSUMPT	presumptive
GEN	genitive	PST	past
H	human	REFL	reflexive
HON	honorific	REL	relative
IMP	imperative	SG	singular
INDEF	indefinite	TOP	topic
INF	infinitive	V	predicative function

References

Aissen, Judith. 2003. Differential object marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21(3). 435–483.

Arkadiev, Peter M. 2009. Differential argument marking in two-term case systems and its implications for the general theory of case marking. *Studies in Natural Language and Linguistic Theory* 72. 151–171.

Beames, John. 1970 [1875]. *A comparative grammar of the modern Aryan languages of India*. Delhi: Munshiram Manoharlal.

Bhatt, Rajesh. 2007. Unaccusativity and case licensing. http://people.umass.edu/bhatt/papers/mcgill-may2007-handout1.pdf.
Bubenik, Vit. 2006. Cases and postpositions in Indo-Arian. In John Hewson & Vit Bubenik (eds.), *From case to adposition. The development of configurational syntax in Indo-European languages*, 102–130. Amsterdam: John Benjamins.
Burton Page, John. 1957. Compound and conjunct verb in Hindi. *Bulletin of the School of Oriental and African Studies* 19(3). 469–478.
Chappell, Hilary. 2014. Sources for differential object markers in Sinitic languages. Paper presented at the international workshop Le marquage différentiel de l'objet à l'épreuve du contact linguistique. Colloque international Typologie et Universaux Linguistiques/ SEDYL (INALCO/CNRS/IRD), December 5–6, 2015.
Chatak, Govind. 1980. *Mādhya pahārī kā bhāṣāśā strī ya adhyāyan*. Delhi: Radhakrishna Press.
Company Company, Concepción. 2002. Grammaticalization and category weakness. In Ilse Wischer & Gabriele Diewald (eds.), *New reflections on grammaticalization*, 201–215. Amsterdam: John Benjamins.
Comrie, Bernard. 1979. Definite and animate objects: A natural class. *Linguistica Silesiana* 3. 13–21.
Croft, William. 1988. Agreement vs. Case marking and direct objects. In Michael Barlow & Charles Ferguson (eds.), *Agreement in natural language: Approaches, theories, descriptions*, 159–179. Stanford: CSLI Publications.
Croft, William. 1991. *Syntactic categories and grammatical relations. The cognitive organization of information*. Chicago: Chicago University Press.
Croft, William. 2003. *Typology and universals*. 2nd edn. Cambridge: Cambridge University Press.
Dalrymple, Mary & Irina Nikolaeva. 2011. *Objects and information structure*. Cambridge: Cambridge University Press.
Dasgupta, Probal. 2015 (manuscript). *Basic morphology and syntax*. Kolkata: Indian Statistical Institute.
Dayal, Veneeta. 2011. Hindi pseudo-incorporation. *Natural Language & Linguistic Theory* 29(1). 123–167.
de Hoop, Helen & Bhuvana Narasimhan. 2005. Differential case-marking in Hindi. In Mengistu Amberber & Helen de Hoop (eds.), *Competition and variation in natural languages. The case for case*, 321–346. Amsterdam: Elsevier.
Emeneau, Murray Barnson. 1980. *Language and linguistic area: Essays*. Stanford: Stanford University Press.
Grierson, George A. 1903–1928. *The linguistic survey of India*. Calcutta: Office of the Superintendant of Government Printing.
Gross, Steven. 2009. Natural kind terms. In Alex Barber & Robert J. Stainton (eds.), *Concise encyclopedia of philosophy of language and linguistics*, 501–504. Amsterdam: Elsevier.
Gupta, Sagarmal. 1986. *Discourse grammar of Hindi: A study in relative clauses*. Delhi: Bahri Publications.

Haiman, John. 1978. Conditionals are topics. *Language* 54(3). 564–589.
Heine, Bernd & Tania Kuteva. 2002. *World lexicon of grammaticalization*. Cambridge: Cambridge University Press.
Hopper, Paul J. & Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56(2). 251–299.
Iemmolo, Giorgio. 2010. Topicality and differential object marking. Evidence from Romance and beyond. *Studies in Language* 34(2). 239–272.
Juyal, Govind. 1976. *Madhya Pahari Bhasha (Garhvali Kumaoni) ka anushilan aur uska hindi se sambandh*. Lucknow: Navyug Granthagar.
Khokhlova, Ludmila V. 2001. Ergativity attrition in the history of Western new Indo-Aryan languages (Panjabi, Gujarati and Rajasthani). In Rajendra Singh & Probal Dasgupta (eds.), *The yearbook of South Asian languages and linguistics*, 159–184. Berlin: De Gruyter Mouton.
Krishnamurti, Bhadriraju, Colin P. Masica & Anjali K. Sinha. 1986. *South Asian languages: Structure, convergence, and diglossia* (Dhanesh Jain). Delhi: Motilal Banarsidass.
Malchukov, Andrej L. 2008. Animacy and asymmetries in differential case marking. *Lingua* 118(2). 203–221.
Masica, Colin. 1976. *Defining a linguistic area: South Asia*. Chicago: University of Chicago Press.
Masica, Colin. 1982. Identified object marking in Hindi and other languages. *Topics in Hindi Linguistics* 2. 16–50.
Mohanan, Tara. 1994. *Argument structure in Hindi*. Stanford: Center for the Study of Language & Information.
Montaut, Annie. 2012. Saillance et anti-saillance en hindi. *Faits de Langue* 39(1). 83–100.
Montaut, Annie. 2013. The rise of non-canonical subjects and semantic alignments in Hindi. In Ilja A. Seržant & Leonid Kulikov (eds.), *The diachronic typology of non-canonical subjects*, 91–118. Amsterdam: John Benjamins.
Montaut, Annie. 2015. Noun-verb complex predicates in Hindi and the rise of non-canonical subjects. In Pollet Samvelian & Lea Nash (eds.), *Approaches to complex predicates*, 142–174. Amsterdam: John Benjamins.
Montaut, Annie & Katharina Haude. 2012. Présentation générale. *Faits de Langues* 39(1). 5–14.
Murugaiyan, Appasamy. 2004. Note sur les prédications existentielles en tamoul classique. *Bulletin de la Société Linguistique de Paris* 99. 363–382.
Næss, Åshild. 2004. What markedness marks: The markedness problem with direct objects. *Lingua* 114(9–10). 1186–1212.
Rebuschi, Georges & Laurice Tuller. 1999. *The grammar of focus*. Amsterdam: John Benjamins.
Saxena, Baburam. 1937 [1970]. *The evolution of Awadhi*. Delhi: Motilal Banarsidass.
Self, Stephen. 2012. "Differential *-ko* marking": Case and object-marking in Hindi. Paper presented at the Graduate Institute of Applied Linguistics Academic Forum, Dallas, TX, 11 October 2012.
Sharma, Devīdatta. 1987. *The formation of Kumauni language*. New Delhi: Bahri.

Singh, Jag Deva. 1970. *A descriptive grammar of Banguru*. Kurukshetra: Kurukshetra University.
Strnad, Jaroslav. 2013. *Morphology and syntax of Old Hindī*. Amsterdam: Brill.
Stroński, Krzysztof. 2013. Evolution of stative participles in Pahari. *Lingua Posnaniensis* 55(2). 135–150.
Tessitori, Luigi. 1914–1916. Notes on the grammar of the Old Western Rajasthani with special reference to Apabhramsha and to Gujarati and Marathi. *The Indian Antiquary* 43–45. 1–106.
Tiwari, Udaya N. 1955. *Hindī bhāṣā kā udgatan aur uskī vibhinn boliyā̃*. Allahabad: Bharti.
Tiwari, Udaya N. 1966. *The origin and development of Bhojpuri*. Calcutta: The Royal Asiatic Society.
Trumpp, Ernest. 1872. *Grammar of the Sindhi language*. London: Trübner. 618.
Tsunoda, Tasaku. 1985. Remarks on transitivity. *Journal of Linguistics* 21(2). 385–396.
Verma, Manindra K. 1991. Exploring the parameters of agreement: The case of Magahi. *Language Sciences* 2(13). 125–143.
Witzel, Michael. 1995. Early Indian history: Linguistic and textual parametres. In George Erdosy (ed.), *The Indo-Aryans of ancient South Asia. Language, material culture and ethnicity*, 85–125. Berlin: De Gruyter.

Chapter 11

The diachronic development of Differential Object Marking in Spanish ditransitive constructions

Klaus von Heusinger
Universität zu Köln

Differential Object Marking (DOM) in Spanish synchronically depends on the referential features of the direct object, such as animacy and referentiality, and on the semantics of the verb. Recent corpus studies suggest that the diachronic development proceeds along the same features, which are ranked in scales, namely the Animacy Scale, the Referentiality Scale and the Affectedness Scale. The present paper investigates this development in ditransitive constructions from the 17th to the 20th century. Ditransitive constructions in Spanish are of particular interest since the literature assumes that the differential object marker *a* is often blocked by the co-occurrence of the case marker *a* for the indirect object. The paper focuses on the conditions that enhance or weaken this blocking effect. It investigates three types of constructions with a ditransitive verb: (i) constructions with indirect objects realized as *a*-marked full noun phrases, (ii) constructions with indirect objects as clitic pronouns, and (iii) constructions with non-overt indirect objects. The results clearly show that DOM is more frequent with (iii) and less frequent with (i). Thus the results support the observation that the co-occurrence of an *a*-marked indirect object (partly) blocks *a*-marking of the direct object to a certain extent. Furthermore, the results show for the first time that indirect objects realized as clitic pronouns without the marker *a* have a weaker blocking effect, but still a stronger one than constructions without overt indirect objects. In summary, the paper presents new and original evidence of the competition between arguments in a diachronic perspective.

1 Introduction

Differential Object Marking (DOM) in Spanish is realized by the marker *a*, which is derived from the preposition *a* 'to' and which is also used to mark the indirect object. DOM in Spanish depends on referentiality, animacy and affectedness (see Pensado 1995; Brugè & Brugger 1996; Leonetti 2004; von Heusinger & Kaiser 2007). The *a*-marking of the direct object can easily co-occur with the prepositional *a*, but in ditransitive constructions with

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a-marked indirect objects, the *a*-marking of the direct object can or must be dropped. In this paper I focus on the development of DOM in Spanish ditransitive constructions. While the development of DOM in transitive constructions is well-investigated (see Melis 1995; Laca 2002; 2006; von Heusinger 2008), there are very few studies that investigate competition of the marker *a* between the direct object and the indirect object (but see Company Company 1998; 2002; Ortiz Ciscomani 2005; 2011; Rodríguez-Mondoñedo 2007). I will provide a qualitative corpus search, complementing the investigation of Ortiz Ciscomani and providing new material to discuss the relation between the development of *a*-marking in transitive sentences with the one in ditransitive sentences. I take the result to support the view that DOM in ditransitive constructions has developed similarly to DOM in transitive constructions, but that both, an indirect pronoun and an indirect full noun phrase, reduce the number of DOM for direct objects.

In contemporary Spanish, a human definite direct object in a transitive construction must be marked by the differential object marker *a* as illustrated in (1). The *a*-marked definite direct object can co-occur with a prepositional object marked by *a*, as in (2), but is generally blocked or disfavored by the occurrence of an *a*-marked indirect object realized by an *a*-marked full noun phrase in a ditransitive construction, as in (3). The co-occurrence of an *a*-marked direct object and an *a*-marked indirect object is subject to controversial grammaticality judgments, cf. (4) – judgments according to Company Company (2001: 20).

(1) *Busco al / *el médico.*
seek.1SG DOM.the / the doctor
'I am seeking the doctor.'

(2) *Envié a mi hermana a Caracas.*
sent.1SG DOM my sister to Caracas
'I sent my sister to Caracas.'

(3) *El maestro presentó Ø su mujer a los alumnos.*
the teacher introduced.3SG his wife to the students
'The teacher introduced his wife to the students.'

(4) *??/*El maestro presentó a su mujer a los alumnos.*
??/*the teacher introduced.3SG DOM his wife to the students
'The teacher introduced his wife to the students.'

There is a controversy about the effect of clitic doubling of the indirect object. According to certain grammatical conditions, indirect objects can or must be doubled by a clitic (pronoun) form that agrees in case and number with the indirect object (Campos 1999; Gabriel & Rinke 2010). There are at least three positions on the effect of clitic doubling in ditransitive constructions: it facilitates *a*-marking of the direct object, it favors blocking of *a*-marking, or it makes *a*-marking ungrammatical. (i) Company Company (1998; 2002) claims that the clitic *le* in (5) facilitates the *a*-marking of the direct object. (ii) Rodríguez-Mondoñedo (2007: 216) claims that "[…] clitic-doubled IOs seem to allow the dropping

[of the *a* marker] more easily than their non-doubled counterparts, at least for some speakers […]." (iii) Fábregas (2013: 31) reports that *a*-marking of the direct object is more grammatical without clitic than with clitic, as in (6). Ormazabal & Romero (2013: 224) also assume that clitic doubling bans *a*-marking of the direct object.

(5) *El maestro le presentó a su mujer a Juan.*
the teacher DAT.3SG introduced.3SG DOM his wife to Juan
'The teacher introduced his wife to Juan.' (judgement according to Company Company 2001: 20)

(6) **Le enviaron a todos los heridos a la doctora.*
DAT.3SG sent.3PL DOM all the injured to the doctor
'They sent all the injured to the doctor.' (judgement according to Fábregas 2013: 31)

The diachronic development of DOM in Spanish is fairly well documented and investigated primarily in transitive construction (see Melis 1995; Melis & Flores 2009; Laca 2002; 2006; von Heusinger & Kaiser 2007; von Heusinger 2008). Diachronic data of ditransitive constructions with two full noun phrases are rare and therefore difficult to collect, but the examples below provide some interesting observations. Already in ditransitive constructions in the 13th century, an alternation between *a*-marked direct objects (7) and unmarked direct objects (8) can be seen.

(7) *E dio Ercules a Manilop a la reyna Anthipa, su Hermana.*
and gave.3SG Hercules to Manilop DOM the queen Anthipa his sister
'And Hercules gave his sister, Queen Anthipa, to Manilop.' (GEII (General Estoria, segunda parte), 21, 13th century, quoted after Ortiz Ciscomani 2011: 167)

(8) *El dio Ø sus fijas a aquellos dos infantes ante todos sus ricos omnes.*
he gave.3SG his daughters to those two infants in.front.of all his rich men
'He gave his daughters to those two princes in front of all his rich men.' (GE (General Estoria), 344, 13th century, quoted after Ortiz Ciscomani 2011: 168)

One also finds this alternation in sentences with clitic-doubled indirect objects: The direct object *Leonor* is *a*-marked in (9), while the direct object *media mujer* ('half woman') is unmarked in (10) (examples from the 17th century):

(9) *A Mendo, hijo de hermana menor, le quiero dar a Leonor.*
to Mendo son of sister younger DAT.3SG want.1SG give.INF DOM Leonor
'To Mendo, son of (my) younger sister, I want to give Leonor.'
(Moreto, Agustín. (1618–1669), El lindo Don Diego)

(10) *Aun si les dieran Ø media mujer a cada uno,*
even if DAT.3PL gave.3PL half woman to each one.MASC
fuera menor el daño.
would.be.3SG less the damage
'Even if they gave half a woman to each one (of them), the damage would be less.'
(Castro, Guillén de. (1569–1631), El conde de Irlos.)

We can summarize the observations regarding DOM in transitive and ditransitive constructions. DOM in transitive constructions in Spanish is well-investigated: Synchronically specific indefinite human direct objects are obligatorily marked, non-specific ones are optionally marked, and non-human direct objects are nearly never marked (Brugè & Brugger 1996; Leonetti 2004; von Heusinger & Kaiser 2007; García García 2014). DOM is blocked or less often used in ditransitive constructions with the indirect object realized by a full noun phrase with the dative case marker *a*. There is variation in diachronic data, but so far the relevant parameters for this variation, if any, cannot be identified.

There are various theories of DOM with different emphasis on syntactic, semantic or functional properties of the *a*-marker. For the sake of the argument (and broadly simplifying), I assume four positions, which do not necessarily exclude each other: (a) DOM as a case marker, (b) DOM in competition with indirect object case marking, (c) DOM indicates the syntactic status of a noun phrase as an argument, (d) DOM as a means to disambiguate between subject and object. (a) It is often assumed that DOM is the case marker of the direct object, which is shown by the dependency on certain syntactic constructions, such as small clauses (Brugè & Brugger 1996; Rodríguez-Mondoñedo 2007; Ormazabal & Romero 2013). Such a syntactic perspective predicts a certain stability of the phenomenon and a clear prediction following general case principles (only one case assignment in a clause). (b) Company Company (1998; 2002) argues that direct objects are marked by DOM, while there are different means in addition to the *a*-marking to mark an indirect object (such as clitic doubling) – see also Delbecque (1998; 2002) for a construction grammar approach. In the history of Spanish, there has been continuous competition between these two strategies. DOM is a strategy for marking direct objects, and becomes unavailable when it creates an ambiguity with indirect objects. If, however, there are no other means available, *a*-marking is reserved for the indirect object and cannot be simultaneously used for the direct object. This picture provides an account of some of the diachronic data, but does not always seem to be confirmed by synchronic data (see Melis & Flores 2009 for discussion). (c) Synchronically, it is assumed that DOM signals that the direct object is a proper argument that saturates the verbal frame, while unmarked direct objects are more like bare nouns that modify the verb (Chung & Ladusaw 2004; López 2012). This view predicts a certain stability in similar semantic contexts. It is, however, not clear how this view can account for the diachronic data, in particular the observation that in earlier stages of Spanish, DOM was only obligatory for pronouns and proper names, but not for definite noun phrases. Still, definite noun phrases are arguments in Chung & Ladusaw's (2004) account and should be *a*-marked according to López (2012). (d) Functional theories assume that one of the main functions of DOM is to identify a direct object, if it is too similar to the subject, i.e. if it has too many properties

of prototypical subjects. Besides this main function, DOM can additionally express other semantic or pragmatic features, such as topicality, referentiality or specificity (Comrie 1975; Bossong 1985; Aissen 2003) or telicity (Torrego Salcedo 1999) or affectedness (von Heusinger & Kaiser 2011). DOM is often overextended and conventionalized (grammaticalized), i.e. used in contexts where a distinction between subject and object is already given by other means (e.g. verbal agreement; see Aissen 2003 for discussion). The functional view seems to be flexible enough to model diachronic change, and it predicts a certain variability in the actual realization of DOM. In this paper I cannot answer the question which of the four positions is the most appropriate one. I rather provide additional observations that might support one or the other account.

The main focus of this paper is to compare the development of DOM in transitive constructions with the development in ditransitive constructions. I have restricted the data to direct objects realized by human noun phrases, i.e. definite NPs and indefinite NPs. For transitive constructions, I will use the material presented in the literature (Melis 1995; Laca 2006; von Heusinger & Kaiser 2007; 2011; von Heusinger 2008) and compare this with the data of Ortiz Ciscomani (2005; 2011). I have also created my own corpus, including three realizations of ditransitive constructions, which all have a direct object realized as a human definite or indefinite noun phrase (but not all subjects are realized or realized as full noun phrases): In type (i), the indirect object is not realized – either because the indirect object is inferred from the context or because it is left unspecified. Type (ii) realizes the indirect object as a clitic pronoun – generally before the finite verb. Type (iii) realizes the indirect object as full noun phrase that is obligatorily marked by *a* (see Table 1).

Table 1: Types of constructions and argument realizations

	Example	IO
(i)	*El maestro presentó (a) su hijo*	not realized
(ii)	*El maestro le presentó (a) su hijo*	clitic pronoun
(iii)	*El maestro presentó (a) su hijo al alumno* 'The teacher introduces his son (to him, to the student).'	full NP

I put forward the following hypotheses, which will be tested using data extracted from diachronic corpora:

- H1: The type of the ditransitive construction determines the blocking effect:
  - i constructions with indirect objects realized as *a*-marked full noun phrases (definite NPs, indefinite NPs) show a high blocking effect
  - ii constructions with indirect objects as clitic pronouns show a low blocking effect, and
  - iii constructions with non-overt indirect objects do not show any blocking effect

- H2: DOM in ditransitive constructions has a comparable development to DOM in transitive constructions.
- H3: Verb classes differ with respect to the way they influence DOM and DOM-blocking.

In §2 I summarize the synchronic and diachronic conditions for DOM in Spanish. §3 presents the synchronic restrictions on DOM in ditransitive constructions. §4 summarizes earlier research on ditransitives in Spanish (Company Company and Ortiz Ciscomani), introduces the corpus created for this paper, and discusses the results of the corpus search. §5 provides the evaluation of the results with respect to the three hypotheses and a general discussion of DOM in ditransitive construction.

2 DOM in transitive constructions

2.1 Synchrony of nominal and verbal parameters related to DOM

I will limit the investigation to European Spanish throughout this paper, but see Company Company (2002) for Mexican Spanish. It is commonly assumed that there are at least four main factors for DOM in the languages of the world: (i) animacy properties of the direct object; and (ii) referential properties, such as indexicality (deixis), definiteness and specificity, of the direct object. The referentiality status is clearly indicated by the morphological form of the noun phrase and ordered on the Referentiality Scale (see below (14)). (iii) Information structure might determine DOM, in particular topical direct objects tend rather to be marked than not. (iv) Finally, transitivity properties of the verb also influence DOM (see Comrie 1975; Bossong 1985; Aissen 2003; de Swart 2007; Iemmolo 2010; Iemmolo & Klumpp 2014; Witzlack-Makarevich & Seržant 2018). DOM or *a*-marking in Spanish is determined by all four main parameters:

(i) Only human direct objects can be marked, while non-human (animate) and inanimate direct objects are obligatorily unmarked. However, there is small class of verbs, such as verbs of substitution, that allow DOM for inanimate direct objects (see García García 2014, 2018 [this volume] for an extensive discussion), cf. (13). In the remainder, I will exclude inanimate direct objects as I am not aware of ditransitive constructions that allow DOM for inanimates.

(11) *Conozco* **(a)* *este* *actor.*
know.1.SG DOM this actor
'I know this actor.'

(12) *Conozco* *(*a)* *esta* *película.*
know.1.SG this film
'I know this film.'

(13) *En esta receta la leche puede sustituir *el/al huevo.*
in this recipe the milk can substitute the/DOM.the egg
'In this recipe the milk can substitute the egg.'

(ii) Specific indefinite human direct objects and all direct objects that are higher on the Referentiality Scale (14) must be *a*-marked, cf. (15). Even non-specific indefinites can optionally be *a*-marked, cf. (16), where the subjunctive *sepa* ('might know') of the relative clause indicates that the head noun *un ayudante* ('an assistant') is non-specific. Determinerless noun phrases ('bare nouns' in their 'non-argumental' function) as *camarero* ('waiter') in (17) must not be *a*-marked.

(14) *Referentiality Scale:*
personal pronoun > proper noun > definite NP > specific indefinite NP
> non-specific indefinite NP > non-argumental

(15) *Vi *(a) la/una mujer.*
saw.1SG DOM the/a woman
'I saw the / a woman.'

(16) *Necesitan (a) un ayudante que sepa inglés.*
need.3PL DOM an assistant that know.3SG English
'They need an assistant who knows English.'

(17) *Necesitan (*a) camarero.*
they.need waiter
'They need a waiter.'

(iii) Topicality is also often said to be a parameter of DOM in Spanish. Like in many other DOM languages, leftwards-moved direct objects are obligatorily *a*-marked, cf. (18), see Leonetti (2004: 86). It is, however, much harder to argue that non-moved *a*-marked noun phrases are topical. Iemmolo (2010) argues that such noun phrases show certain properties of topics and links DOM to topichood, while Dalrymple & Nikolaeva (2011) assume that DOM indicates a secondary topic, as a direct object is rarely the primary sentence topic.[1]

(18) **(A) muchos estudiantes, ya los conocía.*
*(DOM) many students, already them knew.1SG
'Many students I already knew.'

(iv) Verbal categories are also decisive for DOM in Spanish. Bello (1847: 567–570) and Fernández Ramírez (1951: 151–190) present rich material on the variation according to different verb types in Spanish. Pottier (1968: 87) proposes the scale in (19) for *a*-marking

[1]See also Chiriacescu (2014) and Guntsetseg (2016) for the function of DOM as a secondary topic in Romanian and Mongolian, respectively.

in Spanish, which is slightly modified by von von Heusinger & Kaiser (2007: 94) to the Scale of Affectedness and Expected Animacy, cf. Table 2 (see also von Heusinger & Kaiser 2011 for a different affectedness categorization, based on Tsunoda 1985).

(19) Verbal Scale (Pottier 1968: 87: ''un axe sémantique verbal'')
matar 'kill' > *ver* 'see' > *considerar* 'consider' > *tener* 'have'

Table 2: Scale of Affectedness and Expected Animacy (von Heusinger & Kaiser 2007: 94)

Class 1 [+ human] >	Class 2 [± human]	> Class 3 [(±)/– animate]
matar 'kill', *herir* 'hurt'	*ver* 'see', *hallar* 'find'	*tomar* 'take', *poner* 'put'

The scale in Table 2 predicts that verbs like *matar* ('to kill'), which clearly prefer a human direct object, are much more likely to mark the direct object than verbs that do not show such a preference, such as *ver* ('to see'). Verbs that prefer an inanimate direct object show synchronically the lowest rate of *a*-marking of their human direct objects.

2.2 Diachrony of NP-related properties

Like Modern Spanish, Old Spanish exhibits DOM. However, as shown in several diachronic studies (Melis 1995, Laca 2006), DOM in Old Spanish is less frequent than in Modern Spanish and used under different conditions. Human definite direct objects are optionally *a*-marked, as the two examples in (20)–(21) illustrate. Non-human animate indefinite direct objects are generally not *a*-marked, as in (22).

(20) Old Spanish (Cid, 2637)

Reçiba	*a*	***mios***	***yernos***	*commo*	*elle*	*pudier*	*mejor.*
receive.IMP.2SG	DOM	my	sons.in.law	as	he	could.3SG	better

'Have him welcome my sons-in-law as best he can.'

(21) Old Spanish (Cid, 2956)

Ca	*yo*	*case*	***sus***	***fijas***	*con*	*yfantes*	*de*	*Carrion.*
for	I	married.1SG	his	daughters	with	Infantes	of	Carrion

'for I married his daughters to the Infantes of Carrion.'

(22) Old Spanish (Cid, 480–481)

Tanto	*traen*	*las*	*grandes*	*ganançias,*	***muchos***	***gañados***	***de***
very	brought.3PL	the	big	wealths	many	herds	of

ovejas	***e***	***de***	***vacas.***
sheep	and	of	cows

'They brought such great wealth, many herds of sheep and cows.'

Table 3 summarizes the findings of Laca (2006), which is based on the manual collection of utterances in her corpus of documents from the 12th to the 19th century. Proper names are *a*-marked from the time of Old Spanish, while definite and indefinite NPs show a clear development. Non-human direct objects are rarely marked.

Table 3: Diachronic development of a-marking in Spanish according to the Referentiality Scale (selection from Table 3 of Laca 2006: 442). I replaced the original abbreviations in the following way: NPrHum: human proper name, HumDef–Pro: human definite NP, HumInd–Pro: human indefinite NP, Hum0: human bare noun

	century						
	12th	14th	15th	16th	17th	18th	19th
proper name	96% (26)	100% (8)	100% (35)	95% (44)	100% (65)	79% (29)	89% (27)
definite NP	36% (36)	55% (66)	58% (65)	70% (122)	86% (136)	85% (53)	96% (76)
indefinite NP	0% (6)	6% (31)	0% (11)	12% (59)	39% (53)	62% (32)	41% (29)
bare noun	0% (12)	0% (7)	16% (12)	5% (40)	2% (39)	9% (22)	6% (17)

Figure 1 presents Laca's data in a graphic that illustrates that the rate of *a*-marking has increased over time and along the Referentiality Scale.

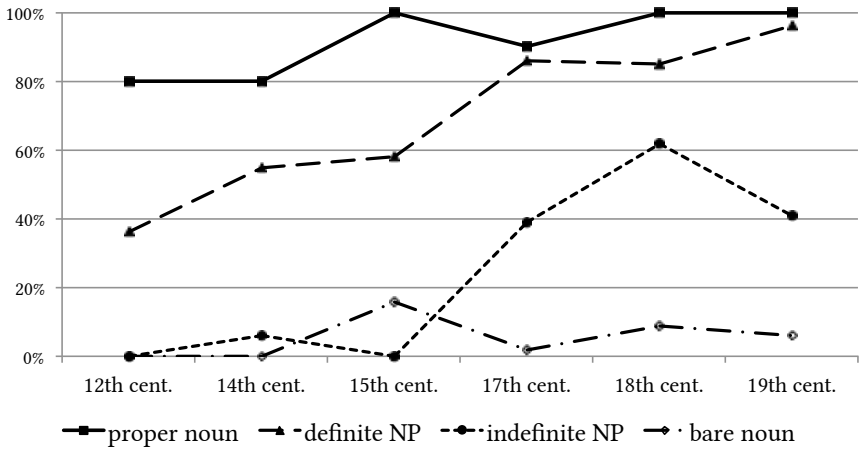

Figure 1: Diachronic development of *a*-marking in Spanish according to the Referentiality Scale (based on Laca 2006: 442, Table 5; from von Heusinger & Kaiser 2011, Fig. 3)

2.3 Diachrony and affectedness

Von Heusinger & Kaiser (2007) apply the Scale of Affectedness, cf. Table 2, to a small corpus from the Bible to show the diachronic development along this scale. The corpus consists of the two books of Samuel and the two Books of Kings in three Bible translations, abbreviated as A–C: translation A is from the 14th century and was only available as a printed version. All other translations were electronically available at Biblegate: B, *Reina Valera Antigua* from 16th/17th century, its contemporary version C from 1995 (*Reina Valera*). (23) nicely illustrates the development and its interaction with topicalization. The verb *tomar* ('take') is from Class 3, i.e. from those verbs that strongly prefer an inanimate direct object. In the translation from the 14th century, the direct object *a vuestra fijas* ('your daughter') is *a*-marked, since it is left-moved, while the direct object in the translation from the 16th century is not moved and unmarked. However, the translation from the 20th century provides DOM for the direct object in the base position, as expected for definite human noun phrases.

(23) 1 Samuel 8, 13

A (14th)	E **a vuestras fijas *tomará*** por espeçieras e cosineras e panaderas.
B (16th)	***Tomará*** también Ø **vuestras hijas** para que sean perfumadoras, cocineras, y amasadoras.
C (20th)	***Tomará*** también **a vuestras hijas** para perfumistas, cocineras y amasadoras.
English	'He will ***take*** (A: DOM, B: Ø, C: DOM) **your daughters** to be perfumers, cooks and bakers.'

In a detailed analysis, von Heusinger & Kaiser (2007) searched the small corpus for all instances of definite and indefinite noun phrases that filled the direct object of the following six verbs categorized in three classes: Class 1: *matar* 'kill', *herir* 'hurt', Class 2: *ver* 'see', *hallar* 'find', and Class 3: *tomar* 'take', *poner* 'put', cf. Table 2. These classes differ not so much in affectedness of the direct object, but rather in the expectedness of animacy of the direct object. Class 1 has a very high expectation that the object is human, while class 2 is rather neutral, and class 3 has an expectation of an inanimate direct object. Table 4 provides the figures for human definite direct objects and Table 5 for human indefinite direct objects.[2]

Figure 2 summarizes the two tables and clearly shows that referentiality is the main parameter for DOM: Definite direct objects are more often *a*-marked than indefinite direct objects. Furthermore, the verb class is a crucial parameter for DOM. Both parameters add up (there is no interaction).

Von Heusinger (2008) provides a corpus search to more precise historical periods, using Mark Davies' *Corpus del Español*. The corpus comprises 100 million words of Spanish texts from the 12th to the 19th century. The corpus interface allows one to search for lemmas, rather than for word forms (as in simple text files of the Bible texts). However, such

[2] An alternative view is that not the animacy, but the agentivity of the direct object is the relevant parameter for DOM (see García García 2014 for this view).

Table 4: Percentage of *a*-marking of human definite direct objects. (Bible translations of 1+2 Samuel and 1+2 Kings, from von Heusinger & Kaiser 2011: 606)

class	14th cent.	16th/17th cent.	20th cent.
1. *matar* 'kill', *herir* 'hurt'	60% (24/40)	66% (37/56)	92% (36/39)
2. *ver* 'see', *hallar* 'find'	38% (9/24)	48% (13/27)	81% (26/32)
3. *tomar* 'take', *poner* 'put'	30% (7/23)	30% (7/23)	67% (20/30)

Table 5: Percentage of *a*-marking of human indefinite direct objects. (Bible translations of 1+2 Samuel and 1+2 Kings, from tvon Heusinger & Kaiser 2011: 607)

class	14th cent.	16th/17th cent.	20th cent.
1. *matar* 'kill', *herir* 'hurt'	7% (1/14)	7% (1/14)	91% (10/11)
2. *ver* 'see', *hallar* 'find'	0% (0/11)	15% (2/13)	45% (5/11)
3. *tomar* 'take', *poner* 'put'	0% (0/15)	0% (0/28)	17% (2/12)

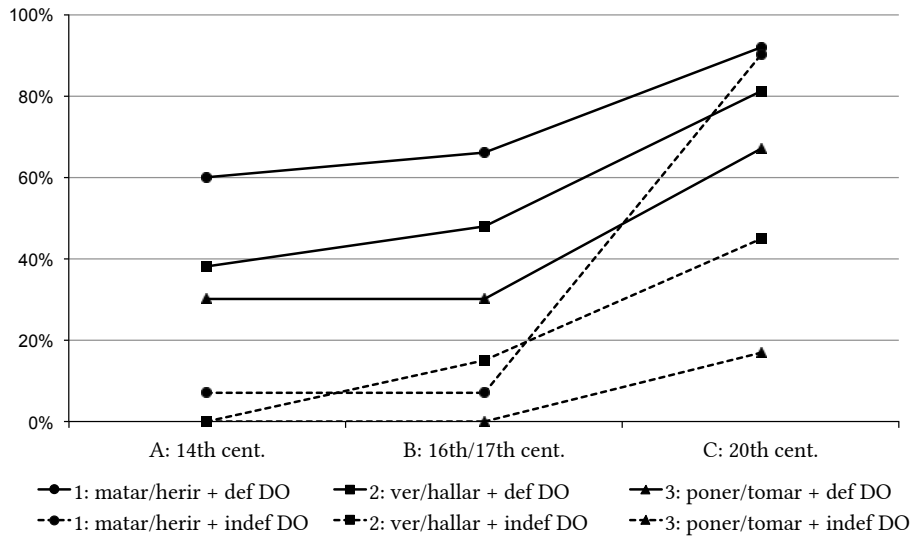

Figure 2: Percentage of *a*-marking depending on verb class, definiteness and time; Class 1: *matar* 'kill', *herir* 'hurt', Class 2: *ver* 'see', *hallar* 'find', and Class 3: *tomar* 'take', *poner* 'put' (Three Bible translations of 1+2 Samuel and 1+2 Kings, from von Heusinger & Kaiser 2011: 607)

searches are still very time-consuming since one has to select the definite or indefinite human direct objects by hand. In the case of *tomar* only about 1–7% of all hits were human definite or indefinite full NPs. The others were either inanimate, or human and of a different type on the Referentiality Scale, such as clitics, personal pronouns, proper names or different types of quantifiers. The study originally differentiates between eight time periods from the 12th to the 19th century, which have been reduced to four time periods. Furthermore, the search was restricted to two verb classes, and one verb for each class: *matar* 'to kill' for class 1 and *tomar* 'to take' for class 3 (see von Heusinger 2008 for the details, and von Heusinger & Kaiser 2011 for a compact presentation). Table 6 shows that in the 12th and 13th century, 50% of human definite direct objects of *matar* are marked with *a*. This number continually increases and reaches about 90 percent by the 18th and 19th century. The marking of the definite direct object of *tomar* is less preferred. Only about 40% in the 12th and 13th century are marked, a number that continuously increases to about 80% in the 18th and 19th century. Table 7 provides the numbers for human indefinite direct objects. As expected, *a*-marking is less preferred, but there is a clear increase over time and some difference between the two verb classes.

Table 6: Percentage of *a*-marking of human definite direct objects. (Corpus del Español, from von Heusinger & Kaiser 2011: 608)

class	12th + 13th cent.	14th + 15th cent.	16th + 17th cent.	18th + 19th cent
1. *matar* 'kill'	50% (25/50)	63% (27/43)	78% (32/41)	91% (39/43)
3. *tomar* 'take'	40% (38/95)	55% (30/55)	70% (7/10)	83% (20/24)

Table 7: Percentage of *a*-marking of human indefinite direct objects (Corpus del Español; from von Heusinger & Kaiser 2011: 608)

class	12th + 13th cent.	14th + 15th cent.	16th + 17th cent.	18th + 19th cent
1. *matar* 'kill'	5% (2/42)	8% (3/40)	15% (6/40)	37% (16/43)
3. *tomar* 'take'	3% (1/34)	4% (2/47)	11% (1/9)	23% (7/31)

Figure 3 compares the development of *a*-marking for definite and indefinite human direct objects for the two verbs. It shows three points: (i) *a*-marking in Spanish increases over time; (ii) it depends on the Referentiality Scale as human indefinite direct objects show less preference for DOM than definite ones; (iii) there is a tendency for *a*-marking to depend on the verb class, i.e. on the preference of the verb for the animacy of the direct object. Note that only human direct objects were counted, which means that there are two independent parameters: first the actual animacy of the direct object and second the preference of the verb for the animacy of the direct object.

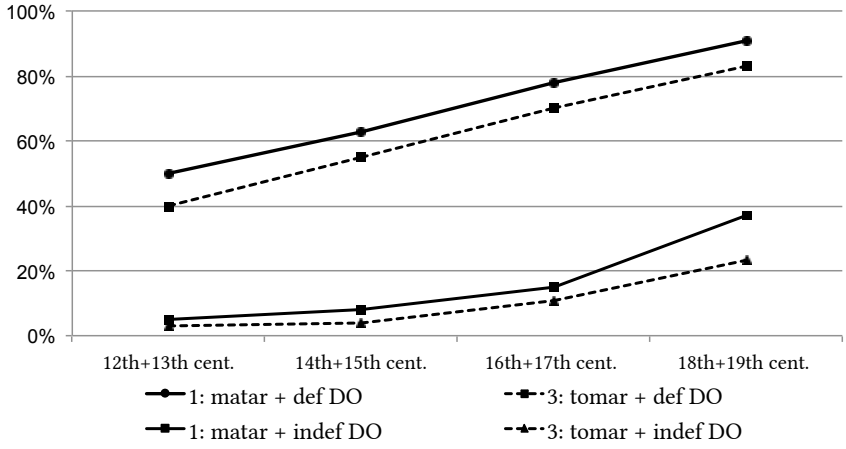

Figure 3: Percentage of *a*-marking depending on verb class, definiteness and time; Class 1: *matar* 'kill' and Class 3: *tomar* 'take' (Corpus del Español; from von Heusinger & Kaiser 2011: 606)

3 Blocking of DOM in ditransitive constructions

As mentioned above, DOM in Spanish is realized by the marker *a*, which is also used for marking the indirect object and this marker also represents the main preposition for direction – the marker derives from Latin *ad* 'to', which can clearly be seen in its prepositional use. The marker *a* is differentially used for the direct object and obligatorily for the indirect object. I assume that *a*-marked direct objects are not datives, but accusatives as shown by the following criteria: a) passivation, cf. (24); b) the replacement by the pronoun *lo* for masculine and *la* for feminine, cf. (25); and c) the doubling of a leftwards-moved direct object by a clitic pronoun *lo* or *la*, cf. (26) (Campos 1999).

(24) a. *Ema y Tito observaron a Ana.*
Ema and Tito observe.PST.3SG DOM Ana
'Ema and Tito observed Ana.'

b. *Ana fue observada por Ema y Tito.*
Ana was observed by Ema and Tito
'Ana was observed by Ema and Tito.'

(25) a. *A: ¿Viste a Kiko?*
see.PST.2SG DOM Kiko
'Did you see Kiko?'

b. *B:* *Sí,* *lo* *vi.*
Yes, ACC.3SG see.PST.1SG
'Yes, I saw him.'

(26) *A* *Claudito* *lo* *vi* *por* *primera* *vez* *en* *diciembre.*
DOM Claudito ACC.3SG see.PST.1SG for first time in December
'Claudito, I saw him for the first time in December.'

The indirect object in the dative is defined by the impossibility to form a passive, cf. (27)–(28) and the replacement by a clitic pronoun *le* in the singular and *les* in the plural, (cf. (29)).[3]

(27) *Juan* *(le)* *dio* *una* *limosna* *a* *nuestro* *vecino*
Juan (DAT.3SG) give.PST.3SG a charity DAT our neighbor
ayer.
yesterday
'Juan gave our neighbor a charity yesterday.'

(28) **Nuestro vecino fue dado una limosna.*
intended reading: Our neighbor was given a charity.

(29) *Juan* *regaló* *un* *libro* *a* *María,* *y* *Pablo* *le*
Juan present.PST.3SG a book to Maria, and Pablo DAT.3SG
regaló *flores.*
present.PST.3SG flowers
'Juan presented a book to Maria and Pablo presented her flowers.'

[3]The following assumes non-leísta varieties of Spanish. Spanish grammars describe as 'leísta' varieties the use of Spanish where the form *le* stands for the direct object (instead of *lo, la*) as in (i) (under certain conditions – depending on the leísta-type). The verb *conocer* 'to know' takes a direct object, in the first sentence the *a*-marked direct object *a Juan*. In the second sentence, non-leista varieties would use the accusative pronoun *lo*, while leísta varieties take *le* (for the accusative).

(i) *¿Conoces* *a* *Juan?* *Sí,* *le* *conozco* *hace* *tiempo.*
know.2SG DOM Juan. Yes, ACC.3SG know.1SG since time
'Do you know Juan? Yes, I know him since some time.'

In general, the question of leísta-varieties should not interfere with the question of *a*-marking of the direct object since only definite indirect objects are clitic doubled, but not direct objects (in most varieties of Spanish). Thus the clitic (pronoun) *le* in (ii) can only double the indirect object *al alumno* (the student), but not the direct object *su hijo* ('his son'), which has optionally DOM, see Fernández-Ordoñez (1999).

(ii) *El* *maestro* *le* *presentó* *(a)* *su* *hijo* *al* *alumno.*
the teacher DAT.3SG present.PST.3SG (DOM) his son to.the student
'The teacher presented his son to the student.'

Finally, a preposition introduced by *a*, as in (30) can never be replaced by a clitic pronoun *le*. Rather it must be picked up by a locative expression.

(30) *María viaja a París, y Ana *le / allá viaja, también.*
María travel.3SG to Paris, and Ana *DAT.3SG / there travel-3SG, too
'María travels to Paris and Ana travels there, too.'

To summarize, the form *a* is used for marking the direct object (and then glossed as DOM), for marking the indirect object (optionally glossed as 'to' or 'DAT') and as a regular preposition 'to'. One can clearly distinguish between the different functions.

3.1 DOM and clitic doubling of indirect objects

According to Campos (1999: 1548), there are two classes of indirect objects, goals and benefactive: goals stand with predicates of movement or transferring, while benefactives cover indirect objects that are included in the event described by predicates of creation, destruction, ingestion or preparation. For goal datives, clitic doubling is optional, cf. (31); for benefactives, clitic doubling is obligatory, cf. (32).

(31) *Lola (le) dio el jugete a Pablo.*
Lola (DAT.3SG) give.PST.3SG the toy to Pablo
'Lola gave the toy to Pablo.' (CInd)

(32) *Lola *(le) rompió el jugete a Pablo.*
Lola break.PST.3SG the toy DAT Pablo
'Lola broke Pablo's toy.' (CInd)

Campos (1999: 1554) also quotes the grammar of the Real Academia Espanola (RAE 1973: §3.4.6), which states that DOM may be dropped in order to disambiguate.

(33) *Presentaron Ø la hija a los invitados.*
introduce.PST.3SG the daughter to the guests
'They introduced the daughter to the guests.'

According to Campos, the simultaneous use of the marker *a* for the DO and IO becomes ungrammatical when a dative clitic doubles the indirect object (34) (Campos 1999: 1554, fn. 79):

(34) **Les presentaron a la hija a los invitados.*
DAT.3PL introduce.PST.3PL DOM the daughter to the guests
'They introduced the daughter to the guests.' (Campos 1999: 1554, fn. 79)

There is extensive literature on clitic doubling in Spanish (or more generally in Romance languages). There are also studies on the development of clitic doubling in Spanish, I cannot do justice to all of them, but see Fontana (1993); Fischer & Rinke (2003); Gabriel & Rinke (2010); von Heusinger (2017).

3.2 Causative constructions

López (2012: 24) observes that in causative constructions the human indefinite causee of an intransitive verb, as in (35), is accusative and *a*-marked according to its referentiality status as specific. It is accusative since it cannot be doubled by a clitic in the dative and if it were inanimate it would not be marked by *a*. If the complement of a causative predicate is a transitive verb, the causee is obligatorily *a*-marked, but this time it is dative, as can be observed from the clitic doubling in (36), which is plural, agreeing with *a unas empleadas*. DOM is now optional for the direct object of the embedded verb.

(35) *María hizo trabajar los domingos a/*Ø un empleado.*
María made work the Sundays DOM an employee
'María made an employee work on Sundays.'

(36) *María les hizo visitar a/Ø un enfermo a/*Ø unas empleadas.*
María PL.DAT made visit DOM a sick DAT some employees
'María made some employees visit a sick person.'

López also observes that the same facts hold of perception verbs. The direct object of perception verbs are obligatorily *a*-marked if human and at least specific, as in (37). While the subjects of the embedded clause are indirect objects and thus obligatorily *a*-marked, the direct object of the embedded clause in (38) is optionally *a*-marked.

(37) *María vio caer a/*Ø un niño.*
María saw fall DOM a child
'María saw a child falling.'

(38) *María vio a/*Ø una empleada visitar a/Ø un enfermo.*
María saw DAT an employee visit DOM a sick
'María saw an employee visiting a sick person.'

Thus, alternating or blocking DOM by a second *a*-marked NP can not only be found in ditransitive constructions with direct and indirect objects, but also in causative constructions or constructions with perceptual verbs.

3.3 Semantic and pragmatic effects

A-marking of indefinite direct objects can signal wide-scope readings, while the lack of *a*-marking often signals narrow scope readings (I leave it open whether the following examples are instances of scope or of a referential vs. non-referential reading of the indefinite). López (2012: 77) argues that the unmarked direct object *un niño* 'a child' cannot take scope over the operator expressed by *la mayoria* 'the most', while the *a*-marked *a un niño* can. This contrast is also found in ditransitive constructions, as in (40): the *a*-marked version *a un niño* expresses wide scope (a pragmatically not very prominent reading).

(39) *Ayer* *vieron* *la* *mayoría* *de* *los* *hombres* *a/Ø* *un* *niño.*
yesterday saw the most of the men DOM a child
'Yesterday most of the men saw a child.'
∃>MOST only with DOM

(40) *Ayer* *entregaron* *a/Ø* *un* *niño* *a* *la* *mayoría* *de* *las* *madres.*
yesterday delivered DOM a child DAT the majority of the mothers
'Yesterday they delivered a child to most of the mothers.'
∃>MOST only with DOM

Leonetti (2004: 102) argues that the *a*-marked *un prisionero* in (41) is a more prominent binder than the unmarked *un prisionero*, and therefore can bind the possessive *su* in the indirect object. In the version with *un prisionero*, the possessive *su* is most probably bound by another antecedent.

(41) *Devolvieron* *a/Ø* *un* *prisionero* *a* *su* *tribu.*
They-returned DOM a prisoner to his tribe
'They returned a prisoner to his tribe.'

3.4 Summary of the observation for DOM in ditransitive constructions

DOM in ditransitive constructions is restricted by the co-occurrence of the indirect object marker *a*. The very short review above provides the following picture: in most constructions that require DOM in transitive contexts, DOM in ditransitive or causative contexts can be blocked by an indirect object realized by a full descriptive noun phrase with the marker *a*. The characteristics of this blocking are still not well-investigated.

4 A diachronic account of DOM in ditransitive constructions

In this section, I present the results of an intensive corpus search on three types of constructions of ditransitive verbs: (i) constructions with indirect objects realized as *a*-marked full noun phrases (definite NPs and indefinite NPs), (ii) constructions with indirect objects as clitic pronouns, and (iii) constructions with non-overt indirect objects. In §4.1 I give a short summary of a similar study of Ortiz Ciscomani (2005; 2011), in §4.2 I provide information on how I collected the material and composed the corpus, and §4.3 the results and discussion of the three hypotheses formulated in §1 are presented.

4.1 Earlier studies in ditransitive constructions

Ortiz Ciscomani (2005; 2011) has analyzed a diachronic corpus of Spanish with respect to ditransitive construction from the 13th to the 20th century. In her corpus Ortiz Ciscomani (2011: 20) identified 3,061 ditransitive constructions, of which 2,269 occur with finite and 792 with nonfinite verbs. For ditransitive constructions with full noun phrases, she restricts her analysis to the finite contexts. In her study (Ortiz Ciscomani 2005), she investigates the 13th, 14th, 16th, 19th and 20th century with 1,661 ditransitive constructions with 141 instances of full human noun phrases for the direct object and for the indirect object:[4,5]

Table 8: Percentage of human direct object with DOM and without DOM with respect to all instances of ditransitive constructions (Ortiz Ciscomani 2011: 162; Ortiz Ciscomani 2005: 198)

century	% DO with DOM	% DO without DOM	% total
13th	2.2% (7/316)	8.2% (26/316)	10.4% (33/316)
14th	5.2 % (6/115)	30.4% (35/115)	35.7% (41/115)
16th	1.1% (6/567)	8.3% (47/567)	9.3% (53/567)
19th	0.8% (3/381)	1.6% (6/381)	2.4% (9/381)
20th	1.4% (4/282)	0.4% (1/282)	1.8% (5/282)
total	1.6% (26/1661)	7% (115/1661)	8.5 (141/1661)

Ortiz Ciscomani (2005) observes that (i) the percentage of this construction (with two full human noun phrases) with respect to all constructions decreases from 10% and 36% in the 13th and 14th century to about 2% in the 19th and 20th century; (ii) that the contrast between DOM and the lack of DOM persists through time. She does not calculate the percentages of DOM vs. non-DOM constructions for full noun phrases (both direct object and indirect object), but see Comrie (2013: 47) and Table 9 for a different presentation of the same material such that one can compare the relation between DOM vs. non-DOM at each century. It becomes obvious that DOM increases through time even though the 19th and 20th centuries provide very few data. Table 9 compares the figures for ditransitive constructions with the figures of Laca (2006), see Table 3 above) for transitive constructions. One can assume that the stark contrast between definite and indefinite direct objects with respect to DOM observed for transitive construction also holds for ditransitive construction.

[4]Ortiz Ciscomani (2011: 162) notes that languages resist a construction with full noun phrases for a human direct and a human indirect object. Only 8.5% of all investigated cases show this configuration. See also von Heusinger & Kaiser (2011), who report from similar low percentages of full noun phrases for human direct objects in transitive constructions.

[5]Note that Ortiz Ciscomani uses two different tables. In her dissertation (Ortiz Ciscomani 2011) she presents the table as in Table 10 with all centuries from 13th to 20th, while in her article (Ortiz Ciscomani 2005) she only selects 13th, 14th, 16th, 19th and 20th – hence the different numbers.

Table 9: Percentages of DOM based on number of ditransitive constructions with human direct objects and human indirect objects (reanalysis of Table 6 of Ortiz Ciscomani 2005: 198) – compared to the data of transitive constructions (see Laca 2006: 442 and Table 3 above)

	% of DOM with ditr. verbs for definite and indefinite NPs (Ortiz Ciscomani 2005)		% of DOM with tr. verbs (Laca 2006)	
cent.		cent.	definite NPs	indefinite NPs
13th	21% (7/33)	12th	36% (13/36)	0% (0/6)
14th	15% (6/41)	14th	55% (36/66)	6% (2/31)
16th	11% (6/53)	16th	70% (85/122)	12% (7/59)
19th	33% (3/9)	19th	96% (73/76)	41% (12/29)
20th	80% (4/5)	20th	-	-
total	18% (26/141)	total	69% (207/300)	17% (21/125)

Ortiz Ciscomani (2011: 166) also observes that only certain ditransitive verbs are constructed with DOM, as Table 10 shows.

Table 10: Verbs with DOM in ditransitive constructions with human direct objects and human indirect objects (Ortiz Ciscomani 2011: 166; my own translation, KvH)

	century								
Verbo	13th	14th	15th	16th	17th	18th	19th	20th	Total
dar 'to give'	2	1		1			1		5
enviar 'to send'	2	5	4	4				1	16
encomendar 'to entrust'	1				1	2	1		5
toller 'to take away'	1								1
echar 'to throw'	1		1						2
llevar 'to carry'				1					1
entregar 'to submit'							1		1
mandar 'to order, to send'								1	1
mostrar 'to show'								1	1
presenter 'to present'								1	1
total	7	6	5	6	1	2	3	4	(34/2269) 1.5%

To summarize, Ortiz Ciscomani (2011) provides the first quantitative approach to the diachrony of ditransitive constructions. She has analyzed more than 3,000 sentences with ditransitive constructions, of which less than 10% are with a human full NP as indirect object and a human full NP as a direct object. There are less than 20% of instances

with *a*-marking for both arguments and the data suggest a development towards this kind of marking (and less blocking). However, data are very scarce and therefore quantitative conclusions cannot be drawn from her analysis. She has also identified certain verb classes that allow DOM in this construction. While this study is very instructive, it needs complementary studies in larger corpora.

4.2 Data collection

4.2.1 Method

In order to complement the corpus study of Ortiz Ciscomani (2005; 2011), I started an extensive corpus search focused on particular verbs. I used Mark Davies' Corpus del Español, which comprises 100 million words of Spanish texts from the 12th to the 19th century. The corpus interface allows one to search for lemmas, rather than for word forms. In a first step I identified the verbs to be analyzed. I started from Ortiz Ciscomani's (2005; 2011) list of verbs and modified it according to assumed verb properties and their behavior in contemporary Spanish. I identified two verb classes with two verbs each: A: verbs of caused perception (*presentar* 'to present', *recomendar* 'to recommend'; and B: verbs of caused motion (*enviar* 'to send', *poner* 'to put').

In the Corpus del Español, I searched for the corresponding lemmata for *presentar* for four different centuries: 17th, 18th, 19th, and 20th, for *recomendar* I collected data from the 18th and 20th century and for *enviar* and *poner* from the 17th and 20th century. When the search resulted in more than 1,000 hits per century, the search was restricted to the first 1,000 hits and filtered to cases with human full noun phrases as direct objects (definite NPs and indefinite NPs), since only those cases qualify for DOM. I distinguished three types of constructions: (i) The indirect object is realized as a human full noun phrase. (ii) The indirect object is realized by a clitic pronoun, and (iii) the indirect object is not overtly realized, i.e. the construction looks like a transitive construction. E.g. the search for the lemma *presentar* resulted in 1,031 hits from the 17th century. I analyzed the first 1,000 hits; there were 47 instances with a human full noun phrase as direct object. Out of these 47 cases, there were 8 (2+6) with a human full noun phrase as indirect object; 18 (2+16) instances of the indirect object realized as a clitic pronoun, 18 (9+9) instances of no overt indirect object, and 3 cases I could either not analyze or not categorize into one of the three categories. For the first three categories I distinguished between DOM or the lack of it, as summarized in Table 11.

Table 11: Sample analysis for *presenter* 'to present' for the 17th century in the Corpus del Español

	cent	full human IO		IO as clitic only		no overt IO		hits			
		DOM	no DOM	DOM	no DOM	DOM	no DOM	else	analyzed	searched	all
presentar	17	2	6	2	16	9	9	3	47	1000	1031

About 13,000 entries in total were analyzed out of which about 600 had a human direct object, i.e. a direct object that can be optionally *a*-marked. Some verbs and constructions had to be eliminated such that eventually 322, i.e. about 2.5% of the analyzed hits, could be used for the final analysis, as presented in Table 12.[6]

Table 12: Overview of the distribution of hits to verb classes and DOM vs. no DOM instances in the Corpus del Español (17th to 20th century).

Verb class	DOM	NO DOM	Sum
A (caused perception)	**64**	**61**	**125**
presentar 'to present'	54	50	104
recomendar 'to recommend'	10	11	21
B (caused motion)	**92**	**105**	**197**
enviar 'to send'	73	90	163
poner 'to put'	19	15	34
total	**156**	**166**	**322**

4.2.2 Analyzing particular examples

Before I discuss the overall results, I will present some particular examples in detail. This will provide more information about the structure of the examples, but also show that in each particular case, additional parameters might have contributed to the *a*-marking of the direct object, its blocking or its lack of *a*-marking (one cannot always clearly distinguish between a blocking effect and a case in which *a*-marking is not licensed due to other parameters). In order to facilitate the reading of the examples, I annotated the subject (Sub), the direct object (DO), the indirect object (IO) and highlighted the verb, the direct object and the indirect object. In some cases I mark long noun phrases by brackets for the ease of parsing. In (42) the direct object *el celebrado don Diego de Covarrubias y Leiva* 'the celebrated don Diego de Covarrubias y Leiva' is *a*-marked besides the *a*-marked indirect object *a nuestro obispado* 'our bishopric'. In (43) the direct object *los enfermos* is not *a*-marked, even though the construction and word order are very similar. There are clear differences between the two direct objects: the direct object in (42) is a

[6]Four other verbs had to be excluded from further analysis: the search for the lemmata *acusar* ('to accuse') and *denunciar* ('to denounce') resulted in only transitive constructions, but not in ditransitive constructions. I also excluded the verb *encomendar* ('to entrust', 'to (re)commend') as it seems to be conventionalized in using it with an indirect object either *a Dios* ('God') or *a la Madre del cielo* ('the mother of heaven'). The great majority of these examples have *a*-marking for the direct object. I speculate that the meaning is conventionalized and understood as an opaque idiomatic expression. I also excluded the 16 instances of *dar* 'to give', since they were difficult to categorize and often close to idiomatic or light verb constructions, as well as all bare nouns and proper names since their referentiality status obligatorily determines DOM or no DOM, respectively, see §4.3.1 and Table 13 below.

proper name, is singular and has much more descriptive content – all parameters known to contribute to DOM.

(42) (ia): DOM and full indirect object
Promovido a Valencia don Martín Pérez Ayala, ***presentó*** *el rey*$_{Sub}$ ***a nuestro obispado***$_{IO}$ ***[al celebrado don Diego de Covarrubias y Leiva]***$_{DO}$*, que al presente era obispo de Ciudad Rodrigo.* (Colmenares, Diego de. (1586–1651), Historia de la insigne ciudad de Segovia y compendio de las historias de Castilla)
'After the promotion of don Martín Pérez Ayala to Valencia, the king **introduced to our bishopric the celebrated don Diego de Covarrubias y Leiva** who currently was the bishop of the city (of) Rodrigo.'

(43) (ib): no DOM and full indirect object
Los Médicos$_{Sub}$ *son los*$_{Sub}$ *que* ***presentan al Rey***$_{IO}$ ***los enfermos***$_{DO}$*.* (Feijoo, Benito Jerónimo (1676–1764), Cartas eruditas y curiosas, vol. 1)
'The doctors are the ones who **present the sick to the king**.'

In (44) the indirect object is realized as the postclitic pronoun *os*, and the direct object *al señor conde del Verde Saúco* is *a*-marked. In (45), however, the direct object *profetas y doctores* is unmarked. Again, there are further differences between these two examples: the direct object in (44) is a proper name, while it is a plural indefinite in (45). According to the Referentiality Scale a proper name obligatorily takes DOM, while a plural indefinite can take it optionally.

(44) (iia): DOM and indirect object realized as clitic pronoun
Tengo el honor de ***presentar-os***$_{IO}$ ***[al señor conde del Verde Saúco]***$_{DO}$*, de quien acabamos de recibir esa carta pidiéndonos nuestra hija en matrimonio.* (Larra, Mariano José de. (1809–1837), No más mostrador)
'I have the honor of **introducing to you the count of Verde Sauco** […].'

(45) (iib): no DOM and indirect object realized as clitic pronoun
Con estas dos causas, que una bastara ante vos, parezco, ***y [profetas y doctores]***$_{DO}$ ***por testigos os***$_{IO}$ ***presento****.* (Calderón de la Barca, Pedro. (1600–1681), El pleito matrimonial del cuerpo y el alma)
'With these two cases I appear, so that one should suffice before you, and I **present to you prophets and doctors** as witnesses.'

In the following two instances, the indirect object is not overtly expressed. In (46) the descriptively rich proper name is *a*-marked, while the indefinite plural noun phrases in (47) are not. This seems to replicate the effect of (44) vs. (45) in that the position on the Referentiality Scale determines DOM.

(46) (iiia): DOM and indirect object not overtly realized
Tuvo el emperador$_{Sub}$ *aviso en Alemania de la muerte de nuestro obispo don Antonio Ramírez; y* ***presentó*** *para obispo* ***[a nuestro gran segoviano fray***

***Domingo de Soto]$_{DO}$**, que interpolado el santo concilio, fue llamado del césar para su confesor.* (Colmenares, Diego de. (1586–1651), Historia de la insigne ciudad de Segovia y compendio de las historias de Castilla)

'While in Germany the emperor was informed about the death of our bishop don Antonio Ramírez; and he **proposed** as bishop **our great Brother Domingo de Soto from Segovia** who was called by the emperor as his confessor after the interpolation of the holy council.'

(47) (iiib): no DOM and indirect object not overtly realized
Luego veintiocho hermanos conducidos de Juan de Dios; de la Victoria, ochenta, por su ministro provincial regidos. ***Ochenta y seis$_{DO}$ San Augustín$_{Sub}$ presenta, ciento$_{DO}$ da San Francisco$_{Sub}$, y otros ciento$_{DO}$ santo Domingo$_{Sub}$ da** con igual cuenta.* (Espinosa, Pedro. (1578–1650), Poesía)

'Afterwards twenty eight brothers brought from Juan de Dios; from Victoria eighty, controlled by the provincial minister. San Augustin **presents eighty six**, San Francisco **gives hundred**, Santo Domingo **gives hundred more** with identical bill.'

4.3 Main results

4.3.1 Referentiality

Referentiality of the direct object is one of the main factors in determining *a*-marking in transitive constructions. This also holds for ditransitive verbs. As can be seen in Table 13, nearly all direct objects realized as bare nouns are unmarked and all except one realized as proper names are marked. This means that the variation only affects definite and indefinite noun phrases.

Table 13: Referentiality or types of direct objects (bare, indefinite, definite, proper name) and DOM in the Corpus del Español (17th to 20th century).

Type of noun phrase	DOM	No DOM	Sum
bare noun	10% (1)	90% (9)	100% (10)
definite NPs	67% 116)	33% (56)	100% (172)
indefinite NPs	27% (40)	73% (110)	100% (150)
proper name	99% (66)	1% (1)	100% (67)
total	56% (223)	44% (176)	100% (399)

Therefore, the remaining discussion has been limited to definite and indefinite noun phrases, 322 hits in total, with nearly as much DOM direct objects as no DOM direct objects, as listed in Table 14.[7] There is the expected difference between these two groups

[7]Note that the 322 hits are the number that has already been presented in Table 12, where only definite and indefinite direct objects were listed.

of referential expressions: one third of indefinite noun phrases are marked, while two thirds of definites are marked.

Table 14: Distribution of definite and indefinite direct objects and DOM in the Corpus del Español (17th to 20th century).

Type of noun phrase	DOM	No DOM	Sum
definite NPs	67% (116)	33% (56)	100% (172)
indefinite NPs	27% (40)	73% (110)	100% (150)
total	48% (156)	52% (166)	100% (322)

4.3.2 Type of ditransitive construction

Hypothesis 1 said that the type of ditransitive construction determines the blocking effect. One distinguished between (i) constructions with indirect objects realized as *a*-marked full noun phrases (definite NPs, indefinite NPs), (ii) constructions with indirect objects as clitic pronouns, and (iii) constructions with non-overt indirect objects do not show any blocking effect.

The data show that (i) construction with a full indirect object blocks *a*-marking of the direct object blocks DOM: only 24% of the direct objects are *a*-marked in this construction. On the other side, if the indirect object is not realized, 54% of the direct objects are *a*-marked. This very much corresponds to the percentage of DOM with transitive verbs, see Table 3 above. (ii) The construction with an indirect object realized as clitic pronoun shows less blocking than the full noun and more blocking than the case without overt indirect object.[8]

Table 15: Distribution of types of indirect objects in percentage of *a*-marking (absolute values) in the Corpus del Español

realization of IO	full human IO	clitic pronoun IO	no overt IO	sum
DOM	24% (8/34)	44% (27/64)	54% (121/224)	48% (156/322)

4.3.3 Diachronic development

Table 16 summarizes the diachronic development from the 17th/18th century to the 19th/20th century – two centuries have been collapsed in order to have a larger number of instances. For a zero realization and the realization by a clitic pronoun of the indirect

[8]The contrast between these three constructions is not an effect of an uneven distribution of definite vs. indefinite direct objects (see Table 14). In all three construction types, the number of definite and indefinite direct objects is more or less equal.

object, no blocking effect is observable. In both construction types the *a*-marking increases over time, such as in the cases of the transitive verbs (see Melis 1995, Laca 2006, von Heusinger & Kaiser 2007; von Heusinger 2008, see Table 3–Table 7 in §2 above). What is surprising, though, is that for full indirect objects the *a*-marking of the direct object is blocked by 70% and 100%, respectively. This would suggest that only the overt *a* for the indirect object blocks the *a*-marking of the direct object. Note, however, that there were only 7 instances of this construction.

Table 16: DOM for human full direct objects and 17th/18th vs. 19th/20th century in percentage (absolute values) in the Corpus del Español

cent	full human IO	pronominal clitic IO	no overt IO
17th/18th	30% (8/27)	22% (7/32)	45% (46/102)
19th/20th	0% (0/7)	67% (20/30)	60% (75/124)

4.3.4 Verb class

The second hypothesis is that verb class differences are mirrored in the blocking of the *a*-marking of the direct object (or in the strength with which the *a*-marking of the direct object has to be obtained). In earlier work it was shown that there is a clear difference for different transitive verb classes. According to the study discussed in §2.2 above, transitive verbs that require an animate direct object (such as *matar* 'to kill') more often take DOM than verbs like *tomar* ('to take') that prefer an inanimate direct object (see Table 4–Table 7 in §2.3 above). In a forced choice experiment conducted by von Heusinger (2017), verbs of caused perception (*presentar* 'to present', *proponer* 'to propose' received DOM in 54% (98/182) of the cases, while verbs of caused motion (*enviar* 'to send', *mandar* 'to send') received DOM in 65% (119/182) of the cases. Therefore, I predict that in the diachronic corpus there will be more verbs of caused motion with *a*-marking, than verbs of caused perception, even in typical blocking contexts. However, as can be seen in Table 17, there are more *a*-marked direct objects with verbs of caused perception (68%) than *a*-marked verbs of caused motion (49%) if the indirect object is not realized. And there is a slight preference for *a*-marking for verbs of caused perception over verbs of caused motion in the other conditions as well.

Table 17: DOM for human animate full direct objects and verb class in percentage (absolute values) in the Corpus del Español

verb class	full human IO	IO as clitic only	no overt IO
A: *presentar, recomendar*	26% (5/19)	45% (25/56)	68% (34/50)
B: *enviar, poner*	20% (3/15)	33% (2/6)	49% (87/176)

5 General discussion and conclusion

In §1 I put forward three hypotheses, which are repeated below and which were tested by the extended corpus search and the analysis in the last section. Due to the scarce data I cannot make any statistically significant claims, but the figures show certain tendencies for the hypothesis.

- H1: The type of the ditransitive construction determines the blocking effect:
  - i constructions with indirect objects realized as *a*-marked full noun phrases (definite NPs, indefinite NPs) show a high blocking effect
  - ii constructions with indirect objects as pronominal clitics show a low blocking effect, and
  - iii constructions with non-overt indirect objects do not show any blocking effect
- H2: DOM in ditransitive constructions has a comparable development as DOM in transitive constructions.
- H3 Verb classes differ with respect to the way they influence DOM and DOM-blocking.

The analysis of the corpus data suggests that Hypothesis 1 is correct: Type (i) realizes the indirect object as a full noun phrase that is obligatorily marked by *a*. Here *a*-marking of the direct object is very low. In type (iii), the indirect object is not realized – either because the indirect object is inferred from the context or left unspecified. Here, *a*-marking of the direct object is high and similar to pure transitive constructions. In type (ii), the indirect object is realized as a clitic pronoun. Here the rate of *a*-marking lies between construction (i) and (iii) – if correct, this is surprising since no overt *a* for the direct object is available.

The diachronic development of DOM in ditransitive constructions follows the diachronic development of DOM in transitive constructions. However, the blocking effect for construction (i) is becoming stronger over the years. Due to the very low figures I cannot estimate whether this is a stable tendency or not. There is no clear evidence for Hypothesis 3, as the contrast between the two verb classes are minor, except for the transitive construal (iii), where a tendency towards more marking of verbs of caused perception can be seen.

The investigation of a corpus of diachronic data of ditransitive constructions in Spanish has revealed that DOM in ditransitive constructions has developed similarly to DOM in transitive constructions – along the Referentiality Scale and the Affectedness Scale. However, DOM in ditransitive constructions occurs with a lower frequency than in transitive constructions. This effect is generally assumed to be the result of some blocking between the *a*-marking of the indirect object and the *a*-marking (i.e. DOM) of the direct object. I have investigated three types of ditransitive constructions: (i) with indirect objects realized as *a*-marked full noun phrases (definite NPs, indefinite NPs), (ii) with

indirect objects as clitic pronouns, and (iii) non-overt indirect objects. There is a clear difference between these three types: DOM is more frequent with (iii) and less frequent with (i). The data revealed an interesting interaction with the diachronic development: for construal (i) I found more DOM in the 17th and 18th century than in the 19th and 20th. The data did not support a strong interaction between verb class and DOM. Nevertheless, they show the importance of an analysis that allows to distinguish nominal from verbal parameters.

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Abbreviations

1	first person
2	second person
3	third person
ACC	accusative
DAT	dative
DO	direct object
DOM	differential object marking
GEN	genitive
IMP	imperative
INF	infinitive
IO	indirect object
MASC	masculine
NOM	nominative
PL	plural
PST	past
SG	singular
SUBJ	subject

References

Aissen, Judith. 2003. Differential object marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21(3). 435–483.

Bello, Andrés. 1847. *Gramática de la lengua castellaña destinada al uso de los americanos. Con las notas de Rufino José Cuervo.* Vol. 2. Madrid: Arco Libros.

Bossong, Georg. 1985. *Differentielle Objektmarkierung in den neuiranischen Sprachen.* Tübingen: Narr.

Brugè, Laura & Gerhard Brugger. 1996. On the accusative *a* in Spanish. *Probus* 8. 1–51.

Campos, Hector. 1999. Transitividad e intransitivitad. In Ignacio Bosque & Violeta Demonte (eds.), *Gramatica descriptiva de la lengua española*, vol. 2, 1519–1574. Madrid: Espasa.

Chiriacescu, Sofiana. 2014. *The discourse structuring potential of indefinite noun phrases. Special markers in Romanian, German and English*. Stuttgart: University of Stuttgart dissertation.

Chung, Sandra & William Ladusaw. 2004. *Restriction and saturation*. Cambridge, MA: MIT Press.

Company Company, Concepción. 1998. The interplay between form and meaning in language change. Grammaticalization of cannibalistic datives in Spanish. *Studies in Language* 22(3). 529–565.

Company Company, Concepción. 2001. Multiple dative-marking grammaticalization. Spanish as a special kind of primary object language. *Studies in Language* 25(1). 1–47.

Company Company, Concepción. 2002. El avance diacrónico de la marcación prepositiva en objetos directos inanimados. In Alberto Bernabé, José Antonio Berenguer, Margarita Cantarero & José Carlos de Torres (eds.), *Presente y futuro de la lingüística en España. La Sociedad de Lingüística 30 años después*, 146–154. Madrid: Consejo Superior de Investigaciones Científicas.

Comrie, Bernard. 1975. Definite and animate direct objects: A natural class. *Linguistica Silesiana* 3. 13–21.

Comrie, Bernard. 2013. Human themes in Spanish ditransitive constructions. In Dik Bakker & Martin Haspelmath (eds.), *Languages across boundaries. Studies in memory of Anna Siewierska*, 37–52. Berlin: De Gruyter Mouton.

Dalrymple, Mary & Irina Nikolaeva. 2011. *Objects and information structure*. Cambridge: Cambridge University Press.

de Swart, Peter. 2007. *Cross-linguistic variation in object marking*. Nijmegen: Radboud University Nijmegen dissertation.

Delbecque, Nicole. 1998. Why Spanish has two transitive construction frames. *Leuvense Bijdragen* 87. 387–514.

Delbecque, Nicole. 2002. A construction grammar approach to transitivity in Spanish. In Kristine Davidse & Béatrice Lamiroy (eds.), *The nominative & accusative and their counterparts*, 81–130. Amsterdam: John Benjamins.

Fábregas, Antonio. 2013. Differential object marking in Spanish: State of the art. *Borealis* 2. 1–80.

Fernández Ramírez, Salvador. 1951. *Gramática española. Vol. 4: El verbo y la oración*. Madrid: Arco/Libros.

Fernández-Ordoñez, Inés. 1999. Leísmo, laísmo y loísmo. In Ignacio Bosque & Violeta Demonte (eds.), *Gramatica descriptiva de la lengua española*, vol. 1, 1317–1397. Madrid: Espasa.

Fischer, Susann & Esther Rinke. 2003. Explaining the variability of clitic doubling across Romance: A diachronic account. *Linguistische Berichte* 236. 455–472.

Fontana, Josep M. 1993. *Phrase structure and the syntax of clitics in the history of Spanish.* Philadelphia: University of Pennsylvania dissertation.

Gabriel, Christoph & Esther Rinke. 2010. Information packaging and the rise of clitic doubling in the history of Spanish. In Gisella Ferraresi & Rosemarie Lühr (eds.), *Diachronic studies on information structure. Language acquisition and change*, 63–86. Berlin: De Gruyter Mouton.

García García, Marco. 2014. *Differentielle Objektmarkierung bei unbelebten Objekten im Spanischen.* Berlin: De Gruyter Mouton.

García García, Marco. 2018. Nominal and verbal parameters in the diachrony of DOM in Spanish. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *The diachronic typology of differential argument marking*, 214–248. Berlin: Language Science Press.

Guntsetseg, Dolgor. 2016. *Differential case marking in mongolian.* Wiesbaden: Harrassowitz.

Iemmolo, Giorgio. 2010. Topicality and differential object marking. Evidence from Romance and beyond. *Studies in Language* 34(2). 239–272.

Iemmolo, Giorgio & Gerson Klumpp. 2014. Introduction to the special issues "Differential Object Marking: Theoretical and empirical issue". *Linguistics* 52(2). 271–279.

Laca, Brenda. 2002. Gramaticalización y variabilidad: Propiedades inherentes y factores contextuales en la evolución del acusativo preposicional en español. In Andreas Wesch, Waltraud Weidenbusch, Rolf Kailuweit & Brenda Laca (eds.), *Sprachgeschichte als Varietätengeschichte. Historia de las variedades lingüística*, 195–203. Tübingen: Stauffenburg.

Laca, Brenda. 2006. El objeto directo. La marcación preposicional. In Concepción Company Company (ed.), *Sintaxis historica del español. Primera parte: La frase verbal*, vol. 1, 423–475. Mexico: Universidad Nacional Autónoma de México.

Leonetti, Manuel. 2004. Specificity and differential object marking in Spanish. *Catalan Journal of Linguistics* 3. 75–114.

López, Luis. 2012. *Indefinite objects. Scrambling, choice functions, and differential marking.* Cambridge, MA: The MIT Press.

Melis, Chantal. 1995. El objeto directo personal en El Cantar de Mio Cid. Estudio sintáctico-pragmático. In Carmen Pensado (ed.), *El complemento directo preposicional*, 133–163. Madrid: Visor Libros.

Melis, Chantal & Marcela Flores. 2009. On the interplay between forces of erosion and forces of repair in language change. A case study. *Folia Linguistica Historica* 30. 271–310.

Ormazabal, Javier & Juan Romero. 2013. Differential object marking, case and agreement. *Borealis: An International Journal of Hispanic Linguistics* 2(2). 221–239.

Ortiz Ciscomani, Rosa María. 2005. Los objetos concurrentes y la bitransitividad en el español en perspectiva diacrónica. In David Eddington (ed.), *Selected Proceedings of the 7th Hispanic Linguistics Symposium*, 192–202. Somerville, Massachusetts: Cascadilla Proceedings Project.

Ortiz Ciscomani, Rosa María. 2011. *Construcciones bitransitivas en la historia.* México: Universidad Nacional Autónoma de México, lnstituto de Investigaciones Filoloógicas.

Pensado, Carmen. 1995. El complemento directo preposicional: Estado de la cuestión y bibliografía comentada. In Carmen Pensado (ed.), *El complemento directo preposicional*, 11–60. Madrid: Visor Libros.

Pottier, Bernard. 1968. L'emploi de la préposition a devant l'objet en espagnol. *Bulletin de la Société de Linguistique* 1. 83–95.

Rodríguez-Mondoñedo, Miguel. 2007. *The syntax of objects: Agree and Differential Object Marking*. Storrs: University of Connecticut dissertation.

Torrego Salcedo, Esther. 1999. El complemento directo preposicional. In Ignacio Bosque & Violeta Demonte (eds.), *Gramática descriptiva de la lengua española. Las construcciones sintácticas fundamentales. Relaciones temporales, aceptuales y modales*, vol. 2, 1779–1805. Madrid: Espasa Calpe.

Tsunoda, Tasaku. 1985. Remarks on transitivity. *Journal of Linguistics* 21(2). 385–396.

von Heusinger, Klaus. 2008. Verbal semantics and the diachronic development of DOM in Spanish. *Probus* 20. 1–31.

von Heusinger, Klaus. 2017. A case marker in conflict: How clitic doubling and word order determine DOM in ditransitive sentences in Spanish. ms.

von Heusinger, Klaus & Georg A. Kaiser. 2007. Differential object marking and the lexical semantics of verbs in Spanish. In Georg A. Kaiser & Manuel Leonetti (eds.), *Proceedings of the Workshop "Definiteness, Specificity and Animacy in Ibero-Romance Languages"*, 83–109. Universität Konstanz: Fachbereich Sprachwissenschaft.

von Heusinger, Klaus & Georg A. Kaiser. 2011. Affectedness and differential object marking in Spanish. *Morphology* 21. 593–617.

Witzlack-Makarevich, Alena & Ilja A. Seržant. 2018. Differential argument marking: Patterns of variation. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *Diachrony of differential argument marking*, 1–40. Berlin: Language Science Press. DOI:10.5281/zenodo.1228243

Chapter 12

Structural case and objective conjugation in Northern Samoyedic

Melani Wratil
University of Düsseldorf

In Samoyedic syntactic objects and, to a much lesser extent, syntactic subjects are morphologically marked in some way if they pragmatically deviate from the prototypical grammatical relation they represent. The present paper focuses on the Northern Samoyedic branch in this respect, where morphological case and possessive marking, the selection of conjugational patterns and even argument drop is employed to a variable extent in order to assign grammatical functions and to distinguish between the involved arguments and their semantic and pragmatic characteristics. It provides evidence for the fact that the synchronic variation in the manifestation and application of these means in the Northern Samoyedic languages Nganasan, Tundra Nenets and Forest Enets can be explained by the interrelation between the individual developmental paths that specific nominal, pronominal and verbal markers have followed. Whereas in Nganasan the morphophonemic change of number and accusative case markers in conjunction with possessive morphemes and moreover the grammaticalization of the latter to definiteness markers has resulted in a system of differential object marking (DOM) that exclusively applies to nouns, in Tundra Nenets and Forest Enets DOM is implemented by the verbal morphology. This variation in differential marking is attributable to the fact that the agreement suffixes of the objective conjugation in Tundra Nenets and in Forest Enets – but not in Nganasan – have adopted substantial functional features of ambiguous object agreement suffixes and at the same time of topic markers. An instance of differential subject marking (DSM) only exists in Nganasan. In contrast to Tundra Nenets and Forest Enets where the paradigm of personal pronouns has been enriched by suppletive accusative forms, Nganasan relies on morphological realization and non-realization in order to mark subject pronouns whose referents do not exhibit the topic- and agent-worthiness of prototypical actor subjects but rather combine specific semantic and pragmatic features of undergoer objects.

1 Introduction

Samoyedic, the eastern principal branch of the Uralic family, nowadays consists of four still living language groups: Nganasan with its dialects Vadey and Avam (Helimski 1998a:

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480–482), the Nenets sub-branch, which is split up into Tundra Nenets and Forest Nenets (Salminen 1997: 13–14; Nikolaeva 2014: 1–2), Enets with its sub-languages Tundra Enets and Forest Enets (Siegl 2013: 45) and finally Selkup, which forms a broad dialect continuum (Helimski 1998b: 549–550). According to the classical taxonomy, which is illustrated in Figure 1, the former three language groups constitute the Northern Samoyedic branch, the language area of which is located in North West Siberia and extends from the White Sea region in the West to the Khatanga gulf in the East. Selkup is the last survivor of the Southern Samoyedic group, which also encompassed the by now extinct Sayan or Mountain Samoyedic languages Kamas and Mator (Janhunen 1998: 457–458). Selkup is still sparsely spoken in the West Siberian taiga region enclosed by the Ob and the Yenisei River in the west and the east and by the Turukhan and the Chulym River in the north and the south. More recent approaches interlink Nganasan and Mator due to their affiliation to the supposedly more archaic, eastern part of Samoyedic by separating the former from Nenets and Enets and the latter from Kamas and Selkup (cf. Janhunen 1998: 458–459; Siegl 2013: 35–36).

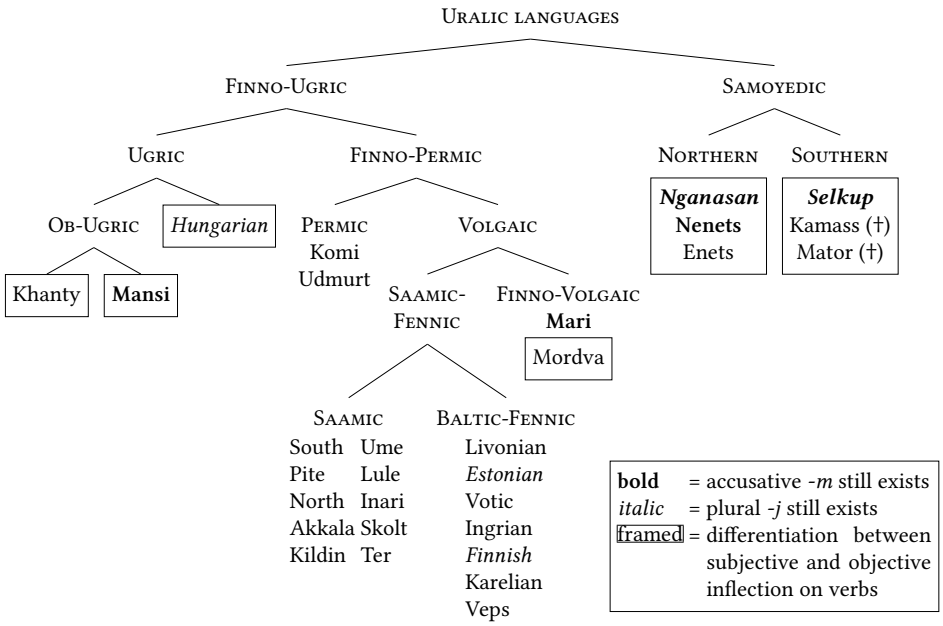

Figure 1: Taxonomy of the Uralic languages with localization of structural case/definiteness markers and conjugational splits

Samoyedic generally employs differential argument marking (DAM). More precisely, syntactic objects and, to a lesser extent, syntactic subjects are morphologically marked in some way if they pragmatically or semantically deviate from the prototypical grammatical relation they represent. Like certain languages of the Finno-Ugric branches Ob-Ugric and Volgaic, Samoyedic has partially preserved the original Proto-Uralic object marker **-m* (cf. Figure 1). The plural suffix **-j*, which is still present in the Baltic-Fennic languages Estonian and Finnish and in Hungarian (cf. Figure 1), has a differentiating function, especially in Nganasan. Like the entire Ugric branch and the Finno-Volgaic language Mordva, Samoyedic exhibits an essential conjugational split between the subjective or "indeterminative" inflection and the objective or "determinative" inflection.[1] Especially in the Northern Samoyedic languages finite verbs that inflect in the objective conjugation agree not only with the syntactic subject in person and number but also with the direct object in number (Abondolo 1998: 27–30). Since the Samoyedic number category is subdivided into the values singular, plural and moreover dual, there are three agreement paradigms within the objective conjugation of Nganasan, Nenets and Enets.

Northern Samoyedic makes use of morphological case marking, the selection of conjugation types and even argument drop to a variable extent in order to distinguish between arguments and their semantic and pragmatic properties and in order to establish grammatical relations. On the basis of modern Nganasan, Tundra Nenets and Forest Enets data that have been made available by the universities of Moscow and Vienna in the context of their research projects "LangueDOC" and "Negation in Ob-Ugric and Samoyedic Languages (NOS)" (cf. "Data sources")[2] on the one hand and by Siegl (2013) and Nikolaeva (2014) in the data sections of their Forest Enets and Tundra Nenets grammar books[3] on the other hand it will be shown in this paper that they represent different intermediate stages in the rise and loss of structural case marking and the development of objective suffixes on verbs.

While §2 presents a cursory overview of argument marking and DAM in Early Uralic, §3 is dedicated to the mechanisms of DAM in Nganasan. It will turn out that Nganasan employs differential object case markers on nouns but does not yet feature any distinct structural case marking on personal pronouns. It is argued in §3.2 that the case syncretism of the latter is resolved by specific restrictions on their morphological realization or non-realization, respectively. As shown in §3.3, the agreement suffixes of the objective conjugation have not yet adopted any characteristics of grammatical object agreement markers in Nganasan. They incorporate anaphoric third person object arguments by themselves and co-occur with lexical objects only if they are bound as resumptive pronouns in a typical left-dislocation construction. §4 and §5 illustrate that in Tundra

[1] In classical Uralistics the subjective conjugation is often called "indefinite" conjugation whereas the objective conjugation is referred to as "definite" conjugation.

[2] The corresponding online corpora consist of various annotated narrative texts and comprise 905 Nganasan, 260 Tundra Nenets and 229 Forest Enets sentences in total.

[3] Siegl's (2013) grammar of Forest Enets contains various narrative texts that consist of 254 Forest Enets sentences in total. Nikolaeva's (2014) grammar of Tundra Nenets contains the edited versions of two Nenets narrations (comprising 482 sentences) that were recorded by Labanauskas in the early 1990s (cf. Labanauskas 1995).

Nenets and Forest Enets differential object case marking (DOC) on nouns does not exist. However, whereas Tundra Nenets exhibits uniform accusative case marking in its nominal declension, Forest Enets has lost structural case markers on nouns almost entirely. However, as elucidated in §4.2 and §5.2, by now their paradigm of personal pronouns has been enriched with distinct accusative forms. Their third person forms are mostly dropped in favor of an objective suffix on the corresponding verbal head. However, in contrast to the agreement morphology of the Nganasan objective verb forms, the agreement morphemes of the Tundra Nenets and Forest Enets objective inflection have gained essential properties of ambiguous object agreement markers. They are no longer simply hosts of the selected object argument. That is why they co-occur with clause-mate objects to a variable extent. In Tundra Nenets, as illustrated in §4.3, they predominantly specify relevant pragmatic properties of these objects while in Forest Enets, as shown in §5.3, they have a discriminatory function.

2 Differential argument marking in Early Uralic

The main strategies of Northern Samoyedic DAM have their roots in Proto-Uralic. This pertains to differential case marking as well as to the conjugational split. Both emerged or were already present in some way in the earliest Uralic language periods.

2.1 The nominal suffixes *-*m* and *-*j* in Early Samoyedic

According to Künnap (2008b: 34–35) Proto-Uralic subject and object nouns were distinctively marked with respect to the categories of number and definiteness but lacked any case distinctions. Künnap (2008b) identifies the singular definiteness marker *-*m* for Proto-Uralic. Katz (1979: 172–175), Janhunen (1982: 29–31) and Honti (1995: 65–67) postulate the existence of the plural morphemes *-*t* and *-*i* in Proto-Uralic. Following Mikola (1988: 238–239) *-*i* corresponds to the glided semi-vowel *-*j*, which as inflectional marking derived from an early general augmentative suffix and later functionally contrasted with the other plural marker *-*t*. Katz (1979) argues that *-*t* performed the function of definiteness marking in the Proto-Samoyedic plural paradigm. The suffix *-*j*, however, not only encoded plurality and the absence of definiteness but also indicated accusative case in his opinion. Abondolo (1998: 21) agrees with Katz (1979) regarding the number and case marking function of *-*j*. Like Salminen (1996: 27) and Janhunen (1998: 469; 2009: 63), he also defines the Proto-Uralic *-*m* as a full-fledged object case marker. But he additionally points out that *-*m* originally only attached onto definite nouns. Thus, Abondolo (1998) only partially disagrees with Künnap (2008b: 35) who takes the view that marking by *-*m* was generally applied in order to morphologically indicate definiteness in unexpected cases. While definiteness, which is connected to the topic-worthiness and animacy of the referent, is a prototypical feature of agents, it is highly atypical for patient arguments (cf. Kuno 1987: 212–214; Payne 1997: 149–158; Aissen 2003). Since Uralic employs accusative alignment with respect to its case and agreement marking, Künnap (2008b) infers that

singular objects but not singular subjects of Proto-Uralic were provided with **-m* when definite.

Hence, there are different approaches to the Early Uralic object and definiteness marking, as well as to the Early Uralic DAM. At least Katz (1979), Abondolo (1998) and Künnap (2008b) belong to those Uralists who assume that Early Uralic in some sense exhibited DOC conditioned by the definiteness and indefiniteness of the lexical nouns involved. A definitive rejection or a definitive support of Katz's (1979), Abondolo's (1998) and Künnap's (2008b) account have not yet been brought forward. Also the question of whether Samoyedic has unalteredly inherited the Early Uralic nominal markers or not, is still a matter of debate (cf. Mikola 1988: 237; Salminen 1996: 66; Künnap 2008b: 36). Since the above mentioned subject and object markers or traces of them are visible in recent Samoyedic, it seems plausible to reconstruct them into Proto-Samoyedic. Under the premise that they were assigned a differentiating function, Early Samoyedic employed differential object marking (DOM) by differential case marking. More precisely, Early Samoyedic definite singular objects differed from their indefinite counterparts and from singular subjects in that they assumed the Uralic **-m*-suffix. Definite plural objects differed from indefinite plural objects and also from indefinite plural subjects in that they exhibited the plural **-t*-marker. Indefinite plural objects differed from their definite counterparts and, moreover, from indefinite plural subjects in that they exhibited the **-i* or **-j*-suffix. Exactly this is schematically summed up in the following table:

Table 1: Case/definiteness markers on nouns in Early Samoyedic

	singular		plural	
	definite	indefinite	definite	indefinite
nominative	-		**-t*	
accusative	**-m*	-	**-t*	**-j*

2.2 The conjugational split in Early Samoyedic

According to Gulya (1995); Honti (1995; 2009); Abondolo (1998); Havas (2004); Körtvély (2005); Künnap (2008a) and É. Kiss (2010), to mention just a few, the conjugational split between the subjective and the objective conjugation is also nascent in some of the earliest Uralic language periods. Honti (1995: 59, 2009: 136–143), Havas (2004: 119–138) and Körtvély (2005: 70–88) among others assume that the objective pattern descends from definite third person pronouns that encliticized onto finite verbs of transitive clauses. They argue that the Uralic third person singular verb forms were the first finite verbs that exhibited the conjugational split. In Havas's (2004) and Körtvély's (2005) opinion, this is because only the third person singular verb form of the Early Uralic general conjugation lacked an agreement suffix and therefore allowed for an analysis of the object enclitic as an inflectional ending of a special conjugation type. Havas (2004) takes the

view that the first and second person objective verb forms emerged much later, after the division into the separate Uralic branches. In his opinion the Hungarian first and second person objective verb forms displaying a *(V)m-* or *(V)d-*suffix used to belong to the common Uralic verbal subject agreement paradigm. He argues that they were re-interpreted as first and second person finite verbs that include a definite third person pronominal object, while finite third person singular verb forms that were followed by a third person object clitic prevailed as regular agreeing verb forms. Mikola's (1988) and Körtvély's (2005) investigations suggest a similar development for Samoyedic. They point out that the recent Samoyedic first and second person singular subjective verb forms came into being later than the corresponding first and second person singular objective verb forms. Hence, following Havas (2004) and Körtvély (2005), the Uralic third person singular subjective form is the only subjective form that is of earlier origin than its objective counterpart. This, however, is not in line with Honti's (1995; 2009) considerations. Honti (1995; 2009) argues for a scenario where the Uralic first and second person objective verb forms were analogously created on the basis of verb forms that later made up the subjective conjugation or, at least, where these forms arose in tandem with specialized subjective forms.

Künnap (2008a: 191–196) agrees with the approaches by Honti (1995; 2009), Havas (2004), and Körtvély (2005) with respect to the role of the third person singular verb form. In other words, he also assumes that the development of the Uralic objective conjugation started with third person singular verb forms that indicated the presence of third person objects. But, similarly to Rédei (1962), he formulates the hypothesis that demonstrative suffixes are the source of the verbal objective suffixes. Since, in his view, especially third person possessor agreement affixes generally represent such demonstrative meanings, they attached to the corresponding third person verb forms in the beginning. With that Künnap (2008a) is able to explain the match between the Uralic third person possessor agreement markers on nominal and pronominal categories and the corresponding third person agreement markers on objective verb forms.

Others, for example Gulya (1995) and É. Kiss (2010), assume that there were various conjugation types already in the early language periods of Uralic. Whereas Gulya (1995: 99) argues for the existence of an intransitive-transitive split in Proto-Uralic, É. Kiss (2010: 140–145) traces at least the Hungarian conjugational split back to three separate verbal paradigms. In her opinion, these paradigms were a reflex of topic agreement. In the presence of a subject topic the clausal main verb agreed with the subject, in the presence of an additional object topic it agreed with the subject and the object and in the absence of any topic it lacked agreement markers. These three agreement patterns melted into two in Hungarian. Especially the objective pattern was composed partly of forms agreeing with the subject and partly of forms simultaneously agreeing with the subject and the direct object. According to É. Kiss (2010), it used to indicate the topichood of the clausal object.

Hence, whether the conjugational split had a differential argument marking function already before the separation of the various Uralic branches is still a matter of debate. Honti (1995; 2009); Havas (2004) and Körtvély (2005) among others are contesting this.

They hold the view that the conjugational split had nothing to do with DAM in Early Uralic. They argue that the objective marker, which exclusively appeared on certain third person verb forms in the beginning, represented a third person pronominal argument by itself. Künnap (2008a) and É. Kiss (2010), however, relate the earliest objective suffixes or their immediate predecessors, respectively, to the information structure of the corresponding clauses. More precisely, in their view these suffixes indicated a non-prototypical pragmatic status of objects and were therefore responsible for DOM in some sense.

3 Nganasan: Differential argument marking on nouns and pronouns

Together with Mator, which is extinct probably since the early 19th century, Nganasan forms the eastern tract of the Samoyedic language area. As depicted in Figure 1 above, Nganasan has preserved the Uralic accusative marker *-m* as well as the plural morpheme *-j*. These markers are dealt with in §3.1. It is shown that they can be defined as differential object case markers in some sense. In §3.2 it is elucidated that the Nganasan paradigm of personal pronouns has not yet developed any structural case markers. Argument drop on the one hand and morphological realization on the other hand specify the corresponding syntactic functions. The agreement suffixes of the Nganasan objective conjugation are, as shown in §3.3, still at the outset of their grammaticalization to differential object markers.

3.1 Differential object marking on nouns

The Uralic case and number markers *-m* and *-j* are involved in DOM in Nganasan. The morpheme *-m* nowadays suffixes to Nganasan singular accusative nouns only in case they are definite (cf. (1)).[4] The definiteness of these objects is always additionally marked by a possessor agreement marker. Even if there is no potential possessor that has been introduced in the preceding context or discourse, the accusative marker *-m* precedes such a morpheme.

(1) Nganasan (Avam) (Northern Samoyedic; NOS. mou djamezi.134, 313)

a. *Təti-rə* *merigi͡âi-ʔ* *t'entïrï-ʔi-ðə* *n'enat'ə-ʔa*
that-2SG(POSS) quick-GEN.PL make-PF-3SG.RC huge-AUGM
bakəə-ʔa-m-tï *n'akəl'i-ʔe* …
scraper-AUGM-ACC-3SG(POSS) take-PF(3SG.SC)
'He prepared everything and took the big scraper …'

[4] The spelling of the example sentences cited in this article largely complies with the spelling of the corresponding data in the corpora (but see footnote 9). Consequently, the spelling of data originating from different corpora may vary slightly even if they document one and the same language.

b. *Tahar͡iaa* ***ŋoj-mə*** *təbə-l'i-ʔe-ŋ.*
now leg-ACC.1SG(POSS) press-INCH-PF-2SG.SC
'You are squeezing my leg now.'

Especially the third person possessive suffixes, such as *-tï* in (1a), have meanwhile entered the grammaticalization path to nominal definiteness markers on objects.[5] They have lost their specific reference to any possessing entity via semantic bleaching. As shown by Gerland (2014), nowadays they indicate general belonging and thus a certain degree of specificity. That is why they are used for expressing prominence or simply definiteness in contexts that lack any available possessor.[6]

Since accusative *-m* has degeminated in conjunction with the first person singular, dual and plural possessive affixes *-mə*, *-mi*^{c} and *-muʔ*, the accusative possessum nouns agreeing with any first person possessor are homonymous with the corresponding nominative forms (Salminen 1996). Hence the object *ŋojmə* 'my leg' of (1b), which was presumably pronounced with a gemination of the bilabial nasal *-m* (**ŋojmmə*) in earlier language periods, formally coincides with the corresponding nominative noun.

The absence of the accusative *-m* suffix on indefinite singular objects like *sənəhu͡a* 'a larch' and *kubaʔa* 'a huge skin' in (2) is not a reflex of the Early Uralic DOM. Rather, it has to do with a quite innovative phonological change that has resulted in a regressive assimilation ensuing from the word final accusative *-m* and its subsequent apocope. Morphophonemic influences of an erstwhile *-m* morpheme, which was the obligatory accusative marker probably till the 19th century (cf. Castrén 1845: 156), can be observed on indefinite accusative non-possessum nouns until today (Wagner-Nagy 2002: 71–89; Katzschmann 2008: 357–365).

(2) Nganasan (Avam) (Northern Samoyedic; NOS. kehy luu.114, NOS. mou djamezi.110)

a. ***Sənəhŭaa*** *ŋəði-ʔə.*
larch(ACC) find-PF(3SG.SC)
'He found a larch.'

b. *…* *bintiʔs'i* ***nenat'a-ʔa*** ***kuba-ʔa*** *təða-ʔa*
wolverine huge(ACC)-AUGM skin.ACC-AUGM bring-PF(3SG.SC)
'… he brought a huge skin of the wolverine.'

Plural definite object nouns like *s'iərt'i* 'the news' in (3a) match the corresponding possessum nominative nouns. Like the latter they undergo a stem alternation and display

[5] In accordance with Hopper & Traugott (1993: 2) I define all diachronic processes where a specific lexeme or discourse structure receives a grammatical function or where a function word or a functional morpheme becomes more functionalized through time as instances of grammaticalization. For the sake of simplicity I do not draw a distinction between 'primary' and 'secondary' (cf. Traugott 2004) grammaticalization.

[6] Toivonen (1998), Bartos (1999) and Dékány (2015) among others have observed a similar distribution of third person possessor agreement affixes in some Ugric and Saamic-Fennic varieties. According to them, these affixes have lost their person specification. They are suitable for speech act participant (SAP) as well as for non-SAP possessors. They merely indicate that the referent of the nominal expression they are attached to is in some possessive relationship.

a possessor agreement affix, which is phonologically shaped by the formerly preceding connective morpheme **-j* (Wagner-Nagy 2002: 84). According to Janhunen (1982: 29–32) exactly this Uralic connective **-j* has become the plural accusative marker in Early Samoyedic. In recent Nganasan it suffixes to all indefinite plural objects. This is shown in (3b) where the indefinite object *latəəj* 'bones' exhibits a final *-j* morpheme. With that the indefinite objects morphologically differ not only from their definite counterparts but also from the non-possessum plural subjects, which exhibit the plural marker *-ʔ* like *mirəimaʔ* ('the steps') in (3c). As shown by Mikola (1988: 238), *-ʔ* is an immediate descendant of the Proto-Uralic plural marker **-t*.

(3) Nganasan (Avam) (Northern Samoyedic; NOS. mou djamezi. 173, 062, 130)

a. *Bəńd'ə* *təniʔia* ***s'iər-t'i*** *d'ebta-ʔa.*
all(ACC) so affair(ACC)-PL.3SG(POSS) tell-PF(3SG.SC)
'He told all the news.'

b. *Tahar͡ia* *satəra-ŋku* *maa-güə* *hün's'ərəəd'əə* ***latəə-j***
now polar.fox-DIM what-CL ancient(ACC) bone-ACC.PL
ŋonəi-ʔ *təða-ʔa.*
one.more-GEN.PL bring-PF(3SG.SC)
'Then the little polar fox brings some old bones.'

c. … ***mirəima-ʔ*** *sojbu-ʔə-ʔ* *n'enama-gitə.*
step-NOM.PL begin.to.sound-PF-3PL.SC neighbour-ABL.PL
'The steps of the neighbour resounded.'

Dual objects are exempted from DOM. On the one hand, this is because there is no specific agglutinative accusative morpheme in the dual number. On the other hand, duality is in some sense associated with the cohesiveness of the involved participants anyhow. As a consequence, dual objects normally display a possessor agreement affix in Nganasan like in all other Samoyedic languages – irrespective of how definite they are. Thus, they are naturally syncretic with the corresponding nominative dual possessum nouns.

Consequently, there is DOM only on singular and plural nouns in contemporary Nganasan. The accusative marker *-m* suffixes to singular definite objects and is always accompanied by a possessor agreement affix. In this way Nganasan definite singular objects differ from their indefinite counterparts, whose accusative marker has demorphologized and which moreover lack any possessor agreement suffix. The accusative marker *-j*, however, suffixes to indefinite plural objects. Accordingly, Nganasan indefinite plural objects differ from their definite counterparts, whose former number marker and predecessor of the accusative *-j* has demorphologized and which moreover take a possessor agreement affix. Exactly this is summed up in Table 2.[7]

[7] SA = stem alternation; POSS = possessor agreement morpheme

Table 2: Structural case/definiteness markers on nouns in Nganasan

	singular		plural	
	definite	indefinite	definite	indefinite
nominative	-	-	*-ʔ*	*-ʔ*
accusative	(SA)-*m*-POSS	(SA)	(SA)-POSS	(SA)-*j*

3.2 Differential argument marking on personal pronouns

Table 3 illustrates that Nganasan personal pronouns do not show any morphological distinction between their structural case forms (cf. Wagner-Nagy 2002: 93).

Table 3: Structural case paradigm of Nganasan personal pronouns (Wagner-Nagy 2002)

	nominative	accusative	genitive
1SG	*mənə*	*mənə*	*mənə*
2SG	*tənə*	*tənə*	*tənə*
3SG	*sïtï*	*sïtï*	*sïtï*
1DUAL	*mi*	*mi*	*mi*
2DUAL	*ti*	*ti*	*ti*
3DUAL	*sïtï*	*sïtï*	*sïtï*
1PL	*mïŋ*	*mïŋ*	*mïŋ*
2PL	*tïŋ*	*tïŋ*	*tïŋ*
3PL	*sïtïŋ*	*sïtïŋ*	*sïtïŋ*

Thus, Nganasan personal pronouns are at first glance inconsistent with the common markedness hierarchies of DOM, which predict that pronouns are generally more likely to be case marked than lexical nominal expressions (Bossong 1985; Croft 1988; Aissen 2003). However, it has been shown in Wratil (2013) that, although the Nganasan system of personal pronouns does not employ any overt case marking of direct objects, it does not constitute a categorical exception to these hierarchies. This is because the individual grammatical function of its pronominal items is determined on the basis of their morphological realization and non-realization. Whether and in which way personal pronouns appear is constrained by the ranking of their thematic roles in the actor and undergoer hierarchies as well as by their person feature value. Following Van Valin (2001: 53–72) the actor and the undergoer hierarchy can be outlined as follows:

(4) ***Actor Hierarchy***
Agent > Instrument > Experiencer > Recipient

(5) ***Undergoer Hierarchy***
Patient > Theme > Stimulus > Experiencer > Recipient / Goal / Source / Location

According to the actor hierarchy, the agent role has the most actor-like properties. It is the prototypical thematic role of all arguments that refer to acting, initiating, willing and mostly human entities. According to the undergoer hierarchy the patient role has the most undergoer-like properties. It is the prototypical thematic role of all arguments that refer to undergoing, passive and often non-human entities that are affected by an event or action. Experiencer and recipient roles combine actor and undergoer properties. They are low in the actor hierarchy as well as in the undergoer hierarchy. The corresponding referents are affected by conditions, situations, impressions or actions but are not completely passive and powerless. In most cases they are animate and willful entities.

In Nganasan the realization of subject pronouns is constrained by the thematic role they bear (Wratil 2013: 248–262). The more actor-like the thematic role of a subject personal pronoun is, the more likely it is unmarked, hence, the less likely it is to be realized as a free pronoun. On the other hand, the more undergoer-like its thematic role is, the more likely it is to have a morphological representation as one of the pronominal items illustrated in the first column of Table 2. This is illustrated in examples (6) and (7).

(6) Nganasan (Avam) (Northern Samoyedic; NOS. mou djamezi.022, NOS. kehy luu.021)

a. *(*Sïtïŋ) taharî͡aa maara-j kotə-kə-ndu-ʔ.*
(*they) now any-ACC.PL destroy-ITER-AOR-3PL.SC
'They kill everything.'

b. *Maa-ðə (*tənə) mənə muaʔkuj-ŋu-əu-ŋ?*
what-ABL.ADV (*you) I torment-INTERR-EXCL-2SG.SC
'Why are you tormenting me?'

(7) Nganasan (Avam) (Northern Samoyedic; NOS. kehy luu.036, Languedoc. dva čuma.023, Languedoc. škola.024)

a. *N'enat'ə-ʔa hú͡aa-ʔa kat'əmi-ʔə.*
huge(ACC)-AUGM tree(ACC)-AUGM see-AOR.3SG.SC
'He noticed a tall tree.'

b. ***Mənə*** *təəśəðə təʔ ŋəmnam-suə-m.*
I totally you.know be.hungry-PST-1SG.SC
'I was totally hungry.'

c. ****(Mi)*** *təndə śiəðïr-mənï ŋimi-ľə-ri-ʔi-niʔ*
we.DU that.GEN window-PROL drag-INCH-PASS-AOR-1DU.RC
'We were dragged through the window.'

In (6a) and (6b) the finite lexical verb selects a subject that features most characteristics of a prototypical agent. Its referent is acting, initiating, willing and animate. Conse-

quently, it is not morphologically realized as a personal pronoun. Its person and number features are specified by the inflectional morphology of the corresponding verb. In (6a) the subjective subject agreement suffix of the main verb indicates that the clausal subject is a third person plural subject. In example (6b) it identifies a second person singular subject. By contrast, (7a) and (7b) contain a main verb that assigns its subject an experiencer role. Since the experiencer role is quite low on the actor as well as on the undergoer hierarchy, the corresponding pronominal subject may be omitted like in (7a) or morphologically realized like in (7b). As shown by Wratil (2013: 257–261), verbs that do not assign any specific thematic role like copulas or that withdraw role assignment in some sense like negation auxiliaries are also quite liberal with respect to the (non-)realization of their pronominal subjects. The same holds true for verbs that background their agent argument due to a specific valence or aspect marker. In passive clauses like (7c), however, the subject combines all properties of a typical patient. It is therefore necessarily realized as overt personal pronoun.

Direct object personal pronouns, which are normally assigned the undergoer-like roles patient and theme, are always overt. Thus, their grammatical relation already determines their morphological manifestation as overt free personal pronouns. As illustrated by (8) and (6b) above, this holds true at least for the speech act participant (SAP) objects, i.e. for all singular, dual and plural object personal pronouns with a first or second person specification. In (6b), for example, the transitive main verb takes a first person singular object and in (8a) a second person plural object, which is morphologically realized as *tïŋ*. The finite verb of (8b) follows its first person dual object *mi*.

(8) Nganasan (Avam) (Northern Samoyedic; NOS. mou djamezi.223, Languedoc. škola.034)

a. *tahar͡ia* *tïmin͡ia* ***tïŋ*** *ŋəðə-ʔki-ʔə-m*
now now you.PL(ACC) examine-RES-AOR-1SG.SC
'Now I will search you.'

b. *Bejkiʔmi͡aʔku* *t'üü-t'ü* *kunsï-mənï* ***mi***
Beikimyaku sleeping.bag-GEN.3SG(POSS) inside-PROL we.DU(ACC)
mütəmi-ʔə
put-AOR(3SG.SC)
'Bejkimjaku puts us in her sleeping bag.'

Accordingly, the quite unusual lack of structural case marking within the Nganasan paradigm of personal pronouns is compensated for by a system of realization and omission. Whereas SAP objects are always realized by overt free personal pronouns, subject personal pronouns are morphologically realized only if their thematic role deviates from the thematic role prototypical subjects are assigned to. Consequently, Nganasan employs a strategy of DSM that is mainly conditioned by semantic roles. Thus, it is an atypical instances of DSM. But in some sense it is also a reflex of the topic-worthiness of referents. More precisely, only Nganasan subjects that bear properties of high topic-worthiness such as definiteness and/or animacy and moreover adopt a thematic role

that is extremely high on the actor hierarchy are completely unmarked, hence, lack any morphological representation.

3.3 Argument incorporation and objective conjugation

The number of the third person personal pronouns *sïtï* and *sïtïŋ* that occur as direct objects in the finite clauses of the accessible corpora is vanishingly small. Nevertheless there are numerous two-or more-participant clauses whose finite verb takes a third person direct object that is definite and anaphoric. However, these clauses as, for example, (9a) and (9b), differ from the other two-or more-participant finite clauses not only in that they lack any free object but also in that their main verb is inflected in the objective conjugation. The respective agreement suffixes are given in Table 4 below.[8]

(9) Nganasan (Avam) (Northern Samoyedic; NOS. mou djamezi.153, 241)

a. ***Ka'təmi-ʔe-ðu.***
look-PF-3SG.OC
'He has looked at it.'

b. *kuni-ðe* ***ŋətə-d'üəd'əə-ðuŋ****?*
where-ABL find-PSTPF-3PL.OC
'Where did they find it?'

Table 4: Verbal suffixes of the subjective, objective and reflexive conjugation in Nganasan (Wagner-Nagy 2002)

	subjective	objective			reflexive
		singular	dual	plural	
1SG	*-m*	*-mə*	*-kəi-j-nə*	*-j-nə*	*-nə*
2SG	*-ŋ*	*-rə*	*-kəi-j-tə*	*-j-tə*	*-ŋ*
3SG	∅	*-tu*	*-kəi-j-tu*	*-j-tu*	*-tə^c*
1DUAL	*-mi^c*	*-mi^c*	*-kəi-j-ni^c*	*-j-ni^c*	*-ni^c*
2DUAL	*-ri^c*	*-ri^c*	*-kəi-j-ti^c*	*-j-ti^c*	*-nti^c*
3DUAL	*-kəj*	*-ti^c*	*-kəi-j-ti^c*	*-j-ti^c*	*-nti^c*
1PL	*-muʔ*	*-muʔ*	*-kəi-j-nuʔ*	*-j-nuʔ*	*-nuʔ*
2PL	*-ruʔ*	*-ruʔ*	*-kəi-j-tuʔ*	*-j-tuʔ*	*-ntuʔ*
3PL	*-ʔ*	*-tuŋ*	*-kəi-j-tuŋ*	*-j-tuŋ*	*-ntəʔ*

As soon as any free pronominal direct object appears within a minimal clause, the corresponding main verb inflects in the subjective conjugation the inflectional pattern of which is listed in the first column of Table 4. This holds true for all definite object

[8]Table 4 only contains the basic morphs of these suffixes. Note that there is a wide range of phonologically conditioned allomorphy within the Nganasan agreement paradigms.

pronouns as for example for the personal pronouns including all SAP and third person pronouns and for all indefinite object pronouns. The sentences of (8) in §3.2 illustrate the co-occurrence of SAP objects and finite verbs with subjective patterns. Example (10a) belongs to the extremely rare clauses that contain a third person object personal pronoun while (10b) and (10c) exhibit indefinite pronominal objects. As can be observed, each of these third person objects precedes a subjective verb form.

(10) Nganasan (Avam) (Northern Samoyedic; NOS. kehy luu.196, NOS. mou djamezi.027, 022)

a. *Bəńd'ə-ʔ* ***sïtï*** ***n'üəsïj-t'i-ʔ*** *təndə* *kobtú͡a-m-tuŋ*
all-PL she kiss-PRS-3PL.SC there girl-ACC.SG-3PL(POSS)
n'üəsï-ndï-ʔ.
kiss-PRS-3PL.SC
'All people kissed her, they kissed their girl there.'

b. *maa* ***ńakələ-tə-ŋɨ***
what(ACC) take-FUT-INTER(3SG.SC)
'What does it take?'

c. *taharî͡aa* *maara-j* ***kotə-kə-ntu-ʔ***
now any-ACC.PL bag-ITER-PRS-3PL.SC
'They kill everything.'

The vast majority of clauses that display a non-pronominal direct object are also headed by a finite verb inflected in the subjective conjugation. None of the minimal clauses containing a non-pronominal object constituent mentioned in §3.1 exhibits a verbal head that bears an objective suffix – irrespective of whether this object constituent is definite or indefinite. The example clauses (11a) with a definite object and (11b) with an indefinite object are further examples that illustrate the subjective inflection due to the presence of any free object.

(11) Nganasan (Avam) (Northern Samoyedic; NOS. kehy luu.149, Languedoc. koujkia.006)

a. *ŋonəi-ʔ* ***śigiʔi-ʔ*** ***luu-ʔə-m-tu***
one.more-ADV ogre-GEN.PL parka-AUGM-ACC-SG.3SG(POSS)
śeri-ʔə
put.on-PF(3SG.SC)
'He has put on once more the ogre's parka.'

b. *Ta-gətə* *lakarïarî͡aʔ* ***maagüə*** ***saü*** ***d'indi- ʔə-gəj.***
that-ABL suddenly somewhat noise(ACC) hear-PF-3DU.SC
'Then they suddenly heard some noise.'

In turn, constructions whose main verb exhibits an objective suffix alongside a non-pronominal accusative object constituent are extremely rare. As has been elucidated in

Wratil (2013: 251–257), these object phrases have in common that they refer to topic entities. They represent old or contextually presupposed information and are marked as being definite by an appropriate possessor agreement morpheme. Moreover, they appear in the left-peripheral position. This is illustrated by (12b). The unambiguously accusative noun *banəmtu* 'dog' establishes the white dog, which has been introduced earlier in the discourse (cf. (12)), as the primary topic.

(12) Nganasan (Avam) (Northern Samoyedic; Languedoc. rebjata. 031, 033)

a. *tə-tə* *taharî͡abiʔ* */ńerəbtukuʔ/* ***ńimə*** ***hon-tïə*** ***ban-tu***
well now /at.first/ name(ACC) have-PTCP dog-3SG(POSS)
təi-śüə *ďeŋkuə* *banu-ʔə* *təti* *bəjkaʔa*
be.available-PST(3SG.SC) white dog-AUGM that old.man
'The famous white dog originally belonged to the old man.'

b. ***ban-əm-tu*** ***śüküða-ʔa-ðu*** *taharî͡aa* *buəgəlïðə-j*
dog-ACC-3SG(POSS) strangle-AOR-3SG.OC now good.words-ACC.PL
ŋantəmə-gə-śa ***ban-əm-tu*** ***mütəmi-ʔə*** *ďebakuə*
pray-ITER-INF dog-ACC.3SG(POSS) send-AOR(3SG.SC) red.GEN
turka-ʔa *ńa-ntə* *i-śa*
lake-AUGM.GEN friend-LAT be-INF
'The dog he strangled, praying good words he sent the dog to the ground of the red lake.'

Hence, it is at least debatable whether the accusative noun *banəmtu* is part of the minimal clause containing the finite main verb inflected in the objective conjugation at all. It is conceivable that *banəmtu* is a left dislocated topic constituent that is referentially associated with a clause internal resumptive pronoun or clitic. The agreement suffix of the following objective verb form would represent the clause internal resumptive element in this case. The fact that *banəmtu* precedes a finite verb inflected in the subjective conjugation in the subsequent asyndetical conjunct (12b), corroborates this analysis. Since the discourse properties of the mentioned referent are fully defined by a left dislocation procedure in the first conjunct, it behaves like a canonical object in the second conjunct.

The distribution of objective verb forms described in this section allows to conclude that Nganasan is situated on an early stage in the development of the conjugational split. Especially the data of (9) and (10) suggest that the suffixes of objective verb forms still include pronominal third person object arguments by themselves. Note that this incorporation hypothesis complies with Havas's (2004) and Körtvély's (2005) assumptions about the roots of the Uralic objective conjugation. According to these considerations their incompatibility with free clause-mate accusative pronouns can be quite convincingly explained. Since pronominal clitics may be bound as resumptive elements by a topicalized object phrase in clitic left-dislocation constructions, sentences like (12b) also fit this analysis. But (12b) supports É. Kiss's (2010) topic agreement approach to the evolvement of the objective conjugation as well. This is because the objective verb form *śüküðaʔaðu*

'strangled' in some sense points to the special topic status of the sentence initial object constituent.

4 Tundra Nenets: Information structuring and the objective inflection

Tundra Nenets is the language spoken by the westernmost speech community of the Northern Samoyedic region (cf. Abondolo 1998: iv; Nikolaeva 2014 among others). In contrast to Nganasan, Tundra Nenets does not exhibit DOM on nouns. This is shown in §4.1. Since, as pointed out in §4.2, its paradigm of personal pronouns has been enriched with distinct accusative forms, Tundra Nenets also lacks DSM within its pronominal system. Nevertheless Tundra Nenets employs DAM in some sense. This is because, as elucidated in §4.3, the Tundra Nenets objective suffixes have acquired the essential features of ambiguous verbal agreement markers in the sense of Siewierska (1999: 225–331) and at the same time assumed an information structuring function.

4.1 Uniform structural case marking on nouns

DOC does not apply to Tundra Nenets nouns. Uniform accusative case marking prevails instead. In the singular number this is attributable to the analogical extension of the Uralic nominal marker **-m* to all kinds of lexical objects. Therefore contrary to Nganasan, which has retained **-m* merely in connection with possessor agreement markers, Tundra Nenets lacks differential accusative marking on object nouns in the singular number. This is illustrated by the example sentences of (13).[9]

(13) Tundra Nenets (Northern Samoyedic; NOS. tesjada nisjami.058, 023, NOS. tet weli teta.105)

a. ***N'e*** *tar'em* *ma:* *…*
woman so say(3SG.SC)
'The woman said: …'

b. *T'i* *Tes'ada* *n'is'e-mi* ***m'apoj-m*** *pod'erŋa.*
so Tesjada father-1SG(POSS) small.reindeer.caravan-ACC harness(3SG.SC)
'So, my father Tesjada harnessed a small reindeer caravan.'

c. *Ŋarka* *Wel'i* *teta* *xasawa* ***n'u-m*** *malca-xa-danta*
big Welji farmer man child-ACC malice-DAT-3SG.DAT

[9] There is a phonemic difference between the nasalizable and the non-nasalizable glottal stop. The former is marked by *h* and the latter by *q* in a number of treatments of Nenets phonology and morphology (cf. i.e. Salminen 1998: 522–523; Nikolaeva 2014: 18–19). For the sake of simplicity, I follow Hajdú (1988) in not drawing a graphemic distinction between the nasalizable and the non-nasalizable glottal stop. This pertains to the following example sentences and tables, where *ʔ* covers both kinds of glottal stop.

nixibta-da, *man-ma:*
pull-3SG.OC pull-NARR
'He caught hold of the malice of the son of the old Weli-farmer and said:'

The indefinite singular direct object in (13b) as well as the definite singular direct object in (13c) displays the accusative case marker *-m*. Due to this marker the singular objects of Tundra Nenets uniformly differ from the corresponding syntactic subjects, which are not case marked at all, such as *n'e* 'woman' in (13a).

Leaving aside the dual object forms, which do not exhibit any specific case morpheme (Salminen 1998: 538; Nikolaeva 2014: 57–58), the uniform object case marking on Tundra Nenets object nouns in the plural number is simply due to the regular suffixation of the accusative plural marker *-j*. Nowadays *-j* has undergone a process of de-morphologization. As a result, the recent Tundra Nenets accusative plural objects are subject to a stem alternation (Mikola 1988: 238). Examples are given in (14), where (14a) displays the indefinite plural object noun *tī* 'reindeers' and (14b) the definite plural object *p'ib'i* 'boots'. Both of them have undergone a vowel change.

(14) Tundra Nenets (Northern Samoyedic; Nikolaeva 2014: 472, NOS. tesjada nisjami.037)

a. *Təd°xəw°ʔ* *yur°* *m'an°* ***tī*** *nikelŋa.*
now(AFF) hundred about reindeer(PL+ACC) set.apart(3SG.SC)
'It split up about a hundred reindeer (from the herd).'

b. *P'i* *sawo* *jern'a* ***p'ib'i*** *s'era-dm,* *wen'eko-dar'em*
night good in.the.middle.of boot(PL+ACC) put.on-1SG dog-EQU
p'in *n'alkara-dm.*
out slink-1SG
'In the middle of the night I put on my boots and slipped out of the tent like a dog.'

The latter sentence as well as (13b) shows that definiteness is not a sufficient condition for the suffixation of possessive markers in Tundra Nenets. In (13c) *n'um* 'child' is definite not only because of its thematic status in this part of the narration but also because of its close affiliation to *Wel'i*, who is one of the protagonists of the story. The definiteness of *p'ib'i* 'boots' in (14b) is due to its immediate associative relation to the first-person narrator. Nevertheless, neither *n'um* nor *p'ib'i* displays any possessive suffix. This is because the Tundra Nenets nominal possessor agreement markers predominantly specify possessivity relations between possessum nouns and possessors. They do not function as object definiteness markers and let alone as differential object markers.

Plural object nouns displaying a possessor agreement marker are completely homonymous with the corresponding nominative possessive forms (Nikolaeva 2014: 59). Since possessum subjects formerly also exhibited the suffix *-j* as a connective morpheme, they feature the same alternation as the plural accusative forms. This is shown in (15a) and

(15b). The nominal stem *te* 'reindeer' has undergone vowel change owing to the former suffixation and subsequent de-morphologization of *-j* in its accusative and in its nominative form. It cannot unambiguously be identified as subject or as object on the morphological level.

(15) Tundra Nenets (Northern Samoyedic; NOS. tet weli teta.020, 022)

a. *T'et* *jonar?* ***tí-da*** *ŋob-t* *mandal'a-d?.*
four thousand reindeer(NOM+PL)-3SG(POSS) one-DAT assemble-3PL.RC
'His four thousand reindeers assembled in one group.'

b. *T'iki* ***tí-da*** *jarka,* *pod'er-ja-da.*
that reindeer(ACC+PL)-3SG(POSS) catch(3SG.SUBJ) harness-PL.O-3SG.OC
'He caught and harnessed these reindeers.'

The non-possessive plural subject forms, as illustrated in (16), however, differ from the corresponding non-possessed objects in that they are provided with the plural suffix *-ʔ*.

(16) Tundra Nenets (Northern Samoyedic; NOS. tet weli teta.094, 141)

a. … ***n'enaca-ʔ*** *jab'el-mi-d*
man-PL(NOM) make.drunk-PTCP.PASS-3PL.RC
'… the people get drunk.'

b. … ***Wel'i teta-ʔ*** *jamdaj-d?.*
Weli.land.owner-PL(NOM) leave-3PL.RC
'… the Weli-farmers left.'

Thus, Tundra Nenets employs DOM neither on singular nor on plural accusative nouns. It exhibits uniform structural case marking instead. Exactly this is outlined in Table 5.

Table 5: Structural case markers on nouns in Tundra Nenets (Nikolaeva 2014: 61)

	singular		plural	
	definite	indefinite	definite	indefinite
nominative	-	-	*-ʔ*	*-ʔ*
accusative	*-m*	*-m*	(SA)	(SA)

4.2 Suppletion in the paradigm of personal pronouns

In contrast to the Nganasan paradigm of personal pronouns, the Tundra Nenets set of personal pronouns morphologically differentiates between subject and object personal pronouns by means of suppletion. As Hajdú (1988: 14–15) points out, this is due to the

grammaticalization of the Uralic lexeme *śi?* 'shape'. Owing to semantic bleaching *śi?* has become a pronominal stem that currently represents the basis of the accusative and genitive personal pronouns. The individual person and number specifications of these forms are indicated by accusative and genitive possessor agreement suffixes (cf. Table 6).[10]

Table 6: Structural case paradigm of the Tundra Nenets personal pronouns (Hajdú 1988: 14–15; Nikolaeva 2014)

	nominative	accusative	genitive
1SG	*mań*	*śi?mʻi*	*śi?n*
2SG	*pidar*	*śit*	*śit°*
3SG	*pida*	*śita*	*śita*
1DUAL	*mańi?*	*śid°nʻi?*	*śid°nʻi?*
2DUAL	*pidaŕi?*	*śid°dʻi?*	*śid°tʻi?*
3DUAL	*pidʻi?*	*śid°dʻi?*	*śid°tʻi?*
1PL	*mańa?*	*śid°na?*	*śid°?na?*
2PL	*pidara?*	*śid°da?*	*śid°ta?*
3PL	*pido?*	*śid°do?*	*śid°to?*

Moreover there is suppletion for person in the nominative array of the Tundra Nenets system of personal pronouns. The first person forms exhibit the stem *man*, the second and third person forms, however, the stem *pi*. As hypothesized by Castrén (1845), Lehtisalo (1939), Hajdú (1953) and Siegl (2008) *pi* does not descend from the Proto-Uralic or Proto-Samoyedic pronoun system. Whereas Castrén (1845: 342) assumed that the stem of the second and third person pronouns is originally Turkish, Hajdú (1953) proposes a contact-induced transfer from Ket. Siegl (2008: 120–121) finally supports Lehtisalo's (1939) hypothesis. He argues that the Tundra Nenets second and third person subject personal pronouns result from the grammaticalization of the Samoyedic lexeme *pixid* 'body'.

Regardless of which of these accounts proves right, the Tundra Nenets set of personal pronouns has obviously undergone diachronic processes that are not evidenced within the corresponding Nganasan system. Because of the exclusively Proto-Samoyedic/Uralic origin of its pronominal items, the latter is often conceived of as the most archaic pronominal system of the Northern Samoyedic languages (Siegl 2008: 120). Contrary to Nganasan, Tundra Nenets therefore behaves in quite an ordinary way with respect to the morphological realization of its pronominal subjects and objects. Owing to the dimensional progression described above, its subject personal pronouns are realized as overt free pronominal items only if they are used for emphasis (Salminen 1998: 540) and object pronouns are always overt and free. This applies to the SAP object pronouns. Their third person forms are different. As will be shown in the following section, they are neither canonical free pronouns nor incorporated objects.

[10] See footnote 9.

4.3 Object topic marking on finite verbs

The agreement markers of the Tundra Nenets objective conjugation listed in Table 7[11] do not simply incorporate the direct object of a clause. Although they exhibit some essential properties of anaphoric third person objects, they belong to ambiguous verbal agreement markers in some sense.

Table 7: Verbal suffixes of the subjective, objective and reflexive conjugation in Nenets (Hajdú 1988: 16–17; Nikolaeva 2014: 78–80)

	subjective	objective			reflexive
		singular	dual	plural	
1SG	*-(d°)mʔ*	*-w°*	*-xəyu-n°*	*-yə-n°*	*-w°ʔ*
2SG	*-n°*	*-r°*	*-xəyu-d°*	*-yə-d°*	*-n°*
3SG	∅	*-da*	*-xəyu-da*	*-y°-da*	*-ʔ*
1DUAL	*-ńiʔ*	*-ḿiʔ*	*-xəyu-ńiʔ*	*-y°-ńiʔ*	*-ńiʔ*
2DUAL	*-d‘iʔ*	*-ŕiʔ*	*-xəyu-d‘iʔ*	*-y°-d‘iʔ*	*-d‘iʔ*
3DUAL	*-x(V°)ʔ*	*-d‘iʔ*	*-xəyu-d‘iʔ*	*-y°-d‘iʔ*	*-x(V°)ʔ*
1PL	*-waʔ*	*-waʔ*	*-xəyu-naʔ*	*-y°-naʔ*	*-naʔ*
2PL	*-daʔ*	*-daʔ*	*-xəyu-daʔ*	*-y°-daʔ*	*-daʔ*
3PL	*-ʔ*	*-doʔ*	*-xəyu-doʔ*	*-y°-doʔ*	*-d°ʔ*

They are not completely incompatible with free clause-mate direct objects. However, due to their residual pronominal features they impose restrictive requirements on such complements. Above all, their third person specification excludes the insertion of SAP direct objects. As shown below, first (17a) and second (17b) person objects always precede a finite verb inflected in the subjective conjugation, the agreement suffixes of which are listed in the first column of Table 7.

(17) Tundra Nenets (Northern Samoyedic; NOS. tesjada nisjami.060, Nikolaeva 2014: 447)

a. *T'iki* *pu-d* ***s'im'i*** ***ŋawla.***
that behind-ABL me(ACC) feed(3SG.SC)
'After that she gave me some food.'

b. *Xumpa°nc'iʔ* ***s'it*** ***ŋædara-dəm-c‘°.***
in.vain you(ACC) send-1SG.SC-PST
'In vain I let you go.'

Moreover, their extant characteristics of definiteness cause a feature conflict with indefinite objects. Accordingly, as illustrated in the following examples, pronominal (18a) as well as non-pronominal (18b) indefinite objects obligatorily co-occur with subjective verb forms.

[11] See footnote 9.

(18) Tundra Nenets (Northern Samoyedic; Nikolaeva 2014: 436, NOS. tesjada nisjami.076)

a. *Yebtow°ʔ,* ***ŋəmke-m*** ***mənеʔŋa-ney°ʔ?***
darling(FOC) what-ACC see-2SG.SC.FOC
'Darling, what can you see?'

b. *Ɉaxa* *xara* *t'a-xana* ***ŋob*** ***m'ad'iko-m*** ***xo-dmʔ.***
river curve there-LOC one small.tent-ACC find-1SG.SC
'After the bend of the river I found a small tent.'

The combination of both their third person specification and the definiteness limitation, finally blocks the appearance of free definite third person pronouns due to redundancy. This is why finite verbs with objective suffixes identify the referents of unmarked non-SAP object personal pronouns exclusively by themselves, cf. (19a) and (19b).

(19) Tundra Nenets (Northern Samoyedic; NOS. tet weli teta.066, 035)

a. *Xuc'erʔ* ***miŋku-da?***
how marry-3SG.OC
'How could he marry her?'

b. *Tad* ***maneŋa-da.***
then behold-3SG.OC
'Then he realized it.'

Definite free-standing accusative third person pronouns are allowed to appear as soon as they are emphasized (Nikolaeva 2014: 386–389) or belong to the non-determinative demonstrative pronouns. Like the Nganasan free definite pronominal objects they usually complement a verb inflected in the subjective conjugation. During her colloquial elicitations Nikolaeva (2014: 201–210) recorded a clause like (20a), where the free third person singular object personal pronoun *s'ita* 'him' receives contrastive stress.[12] The narrative texts of the Tundra Nenets data base also contain clauses like (20b) the pronominal object of which is a demonstrative pronoun bearing a possessor agreement affix.

(20) Tundra Nenets (Northern Samoyedic; Nikolaeva 2014: 203, 439)

a. *N'is'a-da* ***s'ita*** ***ladə.***
father-3SG(POSS) him-(ACC) hit(3SG.SC)
'His father hit him.'

b. ***T'ika-xeyu-da*** ***pod'erŋa.***
this-ACC.DU-3SG(POSS) harness(3SG.SC)
'He harnessed those two.'

[12] Nikolaeva (2014: 203) points out that some speakers of the Western Nenets dialect group sometimes allow the co-occurrence of free third person object personal pronouns and objective verb forms.

The only stressed object pronouns that optionally take an objective verb form are reflexive pronominal expressions with the stem *pixdə* (Nikolaeva 2014: 203), cf. (21a) and (21b). This extraordinary facultative co-occurrence may be due some non-functional residue that *pixd* 'body' still bears as a lexical category.

(21) Tundra Nenets (Northern Samoyedic; Nikolaeva 2014: 203)

a. ***pix°də-m'i*** ***lad°ə-d°m***.
REFL-1SG hit-1SG.SC
'I hit myself.'

b. ***pix°də-m'i*** ***lad°ə-w°***.
REFL-1SG hit-1SG.OC
'I hit myself.'

This at least approximately conforms to the fact that the overwhelming majority of the free direct objects that are accompanied by a verb inflected in the objective conjugation in Tundra Nenets are non-pronominal anyhow (Körtvély 2005: 122). If, however, a non-pronominal complement appears in a Tundra Nenets clause headed by an objective verb form, it is definite and refers to an individuated and highly topical entity (Dalrymple & Nikolaeva 2011: 125–139). On the morphosyntactic level this is reflected by the suffixation of an appropriate possessor agreement morpheme on the one hand and on the other hand by its appearance in the left periphery or second position of the clause. Usually, such non-pronominal complements immediately follow the syntactic subject like in (22d) or even appear sentence initially. The latter is illustrated in (22b) and (23b).

(22) Tundra Nenets (Northern Samoyedic; NOS. tesjada nisjami.003, 006, 009, 086)

a. *N'is'a-m'i* *tan'a* *n'eb'a-m'i* *tan'a* *n'ud'a*
father-1SG(POSS) exist(3SG.SC) mother-1SG(POSS) exist(3SG.SC) young
papa-ko-m'i *tan'a.*
brother-DIM-1SG(POSS) exist(3SG.SC)
'There is my father, my mother and my little brother.'

b. ***N'is'a-m'i*** *Tes'ada-ŋæ* ***pær-c'eti-da***.
father-ACC+1SG(POSS) Tesjada-ESS call-HAB-3SG.OC
'My father is called Tesjada.'

c. *Ŋobŋ-kuna* *n'is'a-m'i* *n'eb'a-xa-n'i* *ma:*
one-LOC father-1SG(POSS) mother-DAT-1SG(POSS) say(3SG.SC)
'Once, my father told my mother:'

d. *N'is'a-m'i* ***jil'e-m'a-m-ta*** *s'eroku-ta* *s'er*
father-1SG(POSS) live-NMLZ-ACC-3SG(POSS) separate-3SG(POSS) affair
wad'eŋa-da.
tell-3SG.OC
'My father told me what he lived through in detail'

(23) Tundra Nenets (Northern Samoyedic; Nikolaeva 2014: 452–453)

a. *N'ud'a* *Way°* *xada-wi°* *n'e°ka-xənta* *tæwi°-ʔ.*
little Waya kill-PSTPF.PTCP elder.brother-DAT.3SG(POSS) arrive-3SG.RC
'Younger Waya reached the place where his murdered brother lay.'

b. ***Xalm'era-m-toʔ*** *s'id'a* *xoba-ʔ* *n'iʔ* ***peŋa-doʔ.***
dead.body-ACC-3PL(POSS) two skin-GEN onto put-3PL.OC
'They put the dead body (of their brother) onto two skins.'

c. *Lobeku-ʔ* *n'eb'a* *ma:* *"Ŋemc'i-da* *temna* *səwa-ʔ.*
Lobeku-GEN mother say(3SG.SC) flesh.3PL-3SG(POSS) still good-3PL
'Lobeku's mother said: "His muscles are still good."'

d. *Xəd°riʔ* *yil'e-bt'e-°* *xorta-nakew°.*
of.course live-CAUS-MOD try-PROB.1SG.OC
'I might try and revive him."'

The boldfaced direct object nouns in (22b) and (23b) are separated from the sentence-final objective verb form by at least one constituent. In (22b) *n'is'am'i* 'my father' converts its referent introduced before (cf. 22a) into the main discourse topic and designates with that the protagonist (cf. (22d)) at the very beginning of the story. In (23b) *xalm'eramtoʔ* 'dead body', which refers to Waya's murdered brother and belongs to the old information (cf. (23a)), announces the main topic of the following direct speech (cf. (23c), (23d)).

Thus, the relation between accusative complements and objective verb forms in Tundra Nenets is reminiscent of the distribution of objective affixes in Nganasan. The Tundra Nenets objective markers indicate that the direct object phrase they co-occur with is or becomes the main topic of the following discourse. However, in Tundra Nenets left-dislocation into any pre-sentential position is no longer an indispensable operation that non-pronominal objects must undergo in order to be compatible with an objective verb form (cf. (23d)). This implies that the objective affixes on Tundra Nenets finite verbs have acquired some relevant properties of grammatical agreement markers. The development of such functional features can presumably be described as a grammaticalization process that started with the loss of stylistic force which left-dislocated constituents originally exerted. As a consequence of this loss the formerly left dislocated constituents were reanalyzed as clause-internal topic constituents and the formerly bound resumptive clitics as agreement markers attaching to the respective verb under certain conditions. Since only non-pronominal constituents underwent topicalization by clitic left-dislocation the third person specification of the former resumptive elements has been preserved. And since, moreover, the conditions under which these elements appeared in the presence of object constituents has always been defined by the pragmatic status of the latter, the newly emerged agreement markers unfolded information structuring functions of topic markers by the process of pragmaticalization (cf. Diewald 2011).

It is conceivable that exactly this diachronic process is responsible for the mechanism of DOM that nowadays holds in Tundra Nenets. Its objective agreement suffixes on the

finite verb indicate that the non-SAP object deviates from the prototypical patient argument in that it is definite and establishes the actual discourse topic. Thus, Tundra Nenets differentially marks object topics by means of differential object indexing (DOI).

5 Forest Enets: Differential object marking on finite verbs

The Enets language area is located in the lower Yenisei region (Janhunen 1998: 457), which extends to the Kara Sea in the North. In the west it borders on the Nenets and in the east on the Nganasan language area. Its southernmost Samoyedic neighbor is the Selkup region. There are two Enets dialects: Forest (Bai) Enets and Tundra (Maddu) Enets, the predominant of which, Forest Enets, is considered in the following.

Forest Enets is in a much more moribund state than Nganasan and Nenets (Siegl 2013: 30–57). It features a number of morphosyntactic characteristics that have to be seen as an advancement of the diachronic processes that are attested for the other Northern Samoyedic languages. While the distinct morphology of structural case marking on its nouns is progressively eroding, as shown in §5.1, the suffixes of the objective conjugation gain more and more weight in the relational assignment of arguments, which is elucidated in §5.3. The Forest Enets personal pronouns are not affected by the loss of specific morphology. On the contrary, similarly to the Tundra Nenets personal pronouns, they have established a structural case distinction by the adoption of supplementary forms. This is illustrated in §5.2.

5.1 The erosion of structural case marking on nouns

In Forest Enets the Uralic nominal accusative marker **-m* has vanished almost entirely (Künnap 1999: 13–14). With the only exception of a few nouns that belong to a subgroup of the second inflectional class and undergo stem alternation in the accusative paradigm (Siegl 2013: 121–124), singular direct objects morphologically conform to the corresponding singular subject nouns in that they are not case marked at all. As shown in (24), *te* 'reindeer' gets along without any specific case marker regardless of whether it is selected as syntactic subject (cf. (24a)) or object (cf. (24b)).

(24) Forest Enets (Northern Samoyedic; NOS. text 39.015, text 39.030)

a. ***Te*** *nebr-ið…*
reindeer run.away-3SG.RC
'The reindeer runs away.'

b. … *to* *ar* ***te*** *kaða-ð*
such size reindeer(ACC) kill-1SG.SC
'I have killed such a big reindeer.'

This holds true at least for all non-possessive forms. Their possessive counterparts still bear traces of the suffix **-m* (Mikola 1988: 242). Owing to its coalescence with the respective adjoining possessive affixes, they exhibit portmanteau morphs encoding case

and possessor agreement that are – at least in the case of a second or third person possessor specification – morphologically distinct from the respective possessor agreement morphemes attached to subject nouns. This is shown in (25) where the accusative third person dual possessor agreement suffix of (25b) deviates from its nominative counterpart in (25a) due to its previous fusion with **-m*.

(25) Forest Enets (Northern Samoyedic; Siegl 2013: 479–480)

a. *Kiuða* *šer* *to-sau-jet* ***sama-ði?***.
morning(GEN) before come-PROB+PST(3SG.SC)-EMPH beast-3DU(POSS)
'But in the morning their bear apparently came.'

b. *Oti-ði?* *oti-ði?* ***bogl'a-di?***.
wait-3DU.OC wait-3DU.OC bear-ACC+3DU(POSS)
'They waited for their bear.'

Like the dual subject and object forms the plural non-possessum subject (cf. 24a) and object (cf. 24b) forms are subject to a natural syncretism. This is due to the fact that after the de-morphologization and definite loss of the plural marker **-j*, the former subject plural marker *-ʔ* has entered the paradigm of plural non-possessive objects (Mikola 1988: 238).

(26) Forest Enets (Northern Samoyedic; Siegl 2013: 477, 479)

a. *čan-da* *mi-n* ***kari-ʔ*** *tonä-bi-č*
tub-GEN+3SG(POSS) in-LOC fish-PL exist-PRF-PST+3PL.SC
'(and) in a tub there were fishes'

b. *Salba* *ne-on* ***kari-ʔ*** *noo-bi-š.*
ice(GEN) on-PROL fish-PL(ACC) take-PRF-PST+3SG.SC
'Along the ice, the bear took fishes along.'

Since in Northern Samoyedic the possessor agreement affixes on plural nouns do not show any distinction with regard to the subject or object function of the corresponding arguments, the paradigm of the possessive plural nouns also lacks any nominative-accusative distinction. That is why the object *kasiðu* 'men' in (27a) exactly matches the corresponding subject form in (27b).

(27) Forest Enets (Northern Samoyedic; NOS. text.39.043, Languedoc. otpusk.029)

a. ***Kasi-ðu*** *d'oxara-ʔ*
man-PL+3PL(POSS) not.know-3PL.SC
'The men do not know each other.'

b. *Kutui-ðu* ***kasi-ðu*** *paroxodo-xoðo*
some(ACC)-PL+3PL(POSS) man(ACC)-PL+3PL(POSS) steamer-ABL
karaa-t'i…
take.along-3PL.SC+PST
'They took along some of their fellows with the steamer.'

Thus, with the only exception of a number of non-possessum singular nouns belonging to the second declensional class and of all singular accusative nouns displaying a second or third person possessor agreement affix in the singular number, objects are not distinguishable from subjects on the basis of their inflectional morphology. Like Tundra Nenets, Forest Enets dispenses with DOM on nouns entirely. Neither definiteness nor indefiniteness of direct objects is indicated by any special case marker or obligatorily associated with the presence or absence of any possessor agreement suffix. Exactly this is sketched in Table 8.

Table 8: Structural case/definiteness markers on nouns in Forest Enets

	singular		plural	
	definite	indefinite	definite	indefinite
nominative	-	-	*-ʔ*	*-ʔ*
accusative	(SA)	(SA)	*-ʔ*	*-ʔ*

5.2 Hybrid forms in the paradigm of personal pronouns

One thing that the Forest Enets pronominal system has in common with the Tundra Nenets pronominal system is that the introduction of the grammaticalized morpheme *śiʔ* has resulted in the removal of the structural case syncretism from the paradigm of personal pronouns. However, it differs from the Tundra Nenets system in that the new inflected forms of *śiʔ* do not always simply replace the original syncretic pronouns. Rather they form an optional part of complex pronouns that also consist of the respective unmarked singular, dual and plural personal pronouns (Künnap 1999: 20–22). The corresponding paradigms of the structural cases are given in Table 9[13] the last two columns of which contain bipartite forms headed by a form of *śiʔ*.

Prokovjev (1937: 76) was the first who noticed the divergence of a number of Forest Enets personal pronouns from the corresponding genuine Uralic and Samoyedic pronominal items and their resemblance to personal pronouns used in the Yeniseian languages. Nowadays Uralists by and large agree that their second and third person nominative singular forms have been directly borrowed from the Yeniseian language Ket (Tereščenko 1966: 456; Siegl 2008: 119–121). Their dual and plural forms are, like the corresponding first person forms, provided with common Uralic number markers (Siegl 2008: 124–127). Till this day they encode the person and number specification of the respective accusative forms as soon as they are not omitted. Consequently, with the exception of the second and third person singular and all first person and non-complex forms, the Forest Enets personal pronouns are hybrid forms. They are composed of hereditary Uralic and borrowed Ket morphemes. Accordingly, through borrowing and grammaticalization

[13] Note that Siegl (2013: 186–187) – in contrast to Künnap (1999: 20–21) and Sorokina (2010: 227–229) among others – denies the existence of genitive personal pronouns in Forest Enets.

Table 9: Structural case paradigm of the Forest Enets personal pronouns (Künnap 1999: 21; Siegl 2013: 186–187)

	nominative	accusative	genitive
1SG	*mod' (mud‘)*	*(mod') ši(j)ʔ*	*(mod') siń*
2SG	*uu*	*(uu) šit*	*(ū) sit*
3SG	*bu*	*(bu) šita*	*(bu) sita*
1DUAL	*mod'ińʔ*	*(mod‘ińʔ) siðińʔ*	*(modińʔ) siðiń*
2DUAL	*uudiʔ*	*(uudiʔ) šiððiʔ*	*(ūdiʔ) siðtiʔ*
3DUAL	*bud'iʔ*	*(bud‘iʔ) šiðid‘i*	*(budiʔ) siðði*
1PL	*mod'naʔ*	*(mod‘naʔ) šiðnaʔ*	*(modinaʔ) siðnaʔ*
2PL	*uudaʔ*	*(uudaʔ) šiððaʔ*	*(ūdaʔ) siðtaʔ*
3PL	*budu?*	*(budu?) šiddu?*	*(budu?) siðtuʔ*

Forest Enets has developed a suppletive paradigm of personal pronouns that, like the corresponding Nenets paradigm, features a morpheme-based distinction between the structural cases.

In discourse situations the Forest Enets subject pronouns are optionally omitted in case they are not emphasized (Künnap 1999: 37). The corresponding object pronouns, however, are always overt with the partial exception of the third person forms. Like their Tundra Nenets counterparts, these pronouns are no longer fully realized as clausal arguments by the agreement morphology of finite verbs inflected in the objective conjugation. Although the Forest Enets objective affixes still retain some essential properties of anaphoric third person objects, they have already gone one step further on the developmental path to grammatical object agreement morphemes than the Nenets objective affixes. This is elucidated in the following section.

5.3 Object definiteness marking on finite verbs

The agreement markers of the three Forest Enets conjugation types are compiled in Table 10.

With respect to the choice between the subjective and the objective inflection in the presence of pronominal direct objects Enets slightly deviates from Nenets. Like in Tundra Nenets, in Forest Enets SAP object pronouns, for example, the second person singular accusative personal pronoun *s'it* ‘you’ in (28a), as well as indefinite third person pronouns, like the interrogative pronoun *obu* ‘what’ in (28b), are accompanied by finite verbs inflected in the subjective conjugation.

Table 10: Verbal suffixes of the subjective, objective and reflexive conjugation in Enets (Siegl 2013: 247–260)

	subjective	objective			reflexive
		singular	dual	plural	
1SG	*-ðʔ*	*-a, -u, -b*	*-xu-n*	*-i-n*	*-i -jʔ, -bʔ*
2SG	*-d*	*-r*	*-xu-ð*	*-i-ð*	*-i-dʻ*
3SG	∅	*-ða*	*-xu-ða*	*-i-da*	*-i-ðʔ*
1DUAL	*-jʔ, -bʔ*	*-jʔ, bʔ*	*-xu-ńʔ*	*-i-ńʔ*	*-i-bʔ*
2DUAL	*-riʔ*	*-riʔ*	*-xu-ðiʔ*	*-i-ðiʔ*	*-i-ðiʔ*
3DUAL	*-xiʔ*	*-ðiʔ*	*-xu-ðiʔ*	*-i-ðiʔ*	*-i-xiʔ*
1PL	*-aʔ,baʔ*	*-aʔ, baʔ*	*-xu-naʔ*	*-i-naʔ*	*-i-naʔ*
2PL	*-raʔ*	*-raʔ*	*-xu-ðaʔ*	*-i-ðaʔ*	*-i-ðaʔ*
3PL	*-ʔ*	*-ðuʔ*	*-xu-ðuʔ*	*-i-ðuʔ*	*-i-ðʔ*

(28) Forest Enets (Northern Samoyedic; NOS. text 39.017, text 39.004)

a. *mod'* ***s'i -t*** ***kojta-da-ð***
I you-ACC.SG set.up-FUT-1SG.SC
'I will trick you.'

b. ***obu*** *ɛke-n* ***pon'i-ŋa-d***
what this-LOC.ADV do-FREQ-2SG.SC
'What are you doing here?'

Likewise, non-pronominal objects that are indefinite like *ŋubai* 'a mat' in (29a) and *koba?* 'skins' in (29b) require a finite verb form of the subjective paradigm.

(29) Forest Enets (Northern Samoyedic; Siegl 2013: 47)

a. *Točgoð* *čiki* *kaði* *läxäči* *ne-on* ***ŋubai*** ***pu-da-ʔ.***
then this fur(GEN) twig(ACC) on-PROL mat(ACC) lay-FUT-3PL.SC
'Then they will lay a mat on the fur twigs.'

b. *Ŋubai* *ne-on* *ańʔ* *čiki* *mu* ***koba-ʔ*** ***läxta-da-ʔ***
mat(GEN) on-PROL FOC this so skin(PL) spread-FUT-3PL.SC
'Over the mat, they will spread out skins.'

Also, like in Tundra Nenets, finite verbs inflected in the objective conjugation only co-occur with definite third person objects. But in Forest Enets, unlike in Tundra Nenets free definite third person object pronouns are not exempt from this. More precisely, if a third person definite pronoun, as for example any strong third person personal or any demonstrative pronoun, is inserted into a clause, the corresponding finite verb normally inflects in the objective conjugation. This is illustrated in (30a) and (30b).

(30) Forest Enets (Northern Samoyedic; Siegl 2013: 252, 468)

a. *Mud'* ***s'ita*** *soiða-n* ***täne-u.***
I he(ACC) good-PROL know-1SG.OC
'I know him well.'

b. ***Čiki-ru-δa*** ***oo-ma-ða.***
this-LIM-3SG eat-RES-3SG.OC
'Only this it had eaten.'

Nevertheless, the objective affixes of the Forest Enets verbal inflection are still able to represent anaphoric third person objects by the person features of their pronominal predecessors. Accordingly, they block the appearance of non-emphatic anaphoric third person personal pronouns for reasons of redundancy. Clauses, in which the third person definite pronominal object is not independently realized as in (31a) and (31b), are therefore much more frequent than clauses like (30a).

(31) Forest Enets (Northern Samoyedic; NOS. text 01.009, Siegl 2013: 269)

a. *Mod'* *nas'il* ***tuda-a-b-o-s'.***
I not.easily recognize-PRS-1SG.OC-EP-PST
'I hardly recognized him.'

b. ***Sirta-b-i-ða*** *bočka* *mi-ʔ* *…*
salt-PRF-OBJ.PL-3SG.OC barrel(GEN) in-LAT
'They salted them into a barrel.'

Forest Enets furthermore differs from Tundra Nenets in that the non-pronominal complements of objective predicates need not reside in the left area of the clause and do not even obligatorily refer to the discourse topic.

In most cases the referent of lexical direct objects that complement an objective verb form is definite and at the same time topical insofar as it has been introduced in the preceding context. In (32) for example the reindeer and the mouse are established as protagonists at the beginning of the story (32a). In its conclusive statement (32b) the direct objects *te* 'reindeer' and *tobik* 'mouse' therefore belong to the old information. They are definite and their referents are highly topical. That is why *te* 'reindeer' and *tobik* 'mouse' obligatorily co-occur with an objective verb form in (32b).

(32) Forest Enets (Northern Samoyedic; NOS. text 39.001, Siegl 2013: 269)

a. *d'iri-bi* *ŋo-l'u* *d'a-xan* ***tobik*** *an'* ***te***
live-NARR(3SG.SC) one-LIM earth-LOC.SG mouse and reindeer
'There lived on the earth a mouse and a reindeer.'

b. *te* ***d'oxara-ða*** ***tobik***, *tobik* ***d'oxara-ða*** ***te***
reindeer not.know-3SG.OC mouse(ACC) mouse not.know-3SG.OC
reindeer(ACC)
'The reindeer does not know the mouse and the mouse does not know the reindeer.'

However, the definiteness of non-pronominal objects accompanied by a finite verb inflected in the objective conjugation is not necessarily pragmatically motivated. Semantic definiteness is a sufficient criterion for direct objects to become a complement of an objective verb form in Forest Enets. *D'urak baða* 'Nenets language' in (33b) and *nu* 'door' in (34b)[14] for example are part of the new information (cf. (33a), (34a)).

(33) Forest Enets (Northern Samoyedic; NOS. text 01.016, NOS. text 01.017)

a. *Mod'* *onaj* *baða-an* *sujða-an* *d'uri-ŋa-ð.*
I true language-PROL.SG good-PROL.SG say-PRS-1SG.SC
'I speak Enets well.'

b. ***D'urak*** ***baða*** *ŋubtore?* *sujða-an* ***tɛnɛɛ-w***
Nenets language(ACC) also good-PROL.SG know-1SG.OC
'I also speak Nenets well.'

(34) Forest Enets (Northern Samoyedic; Siegl 2013: 489–490)

a. *Mud'na* *okružkom* *aga* *bem* *äsi*
we(PL) party.committee(GEN) big boss father(ACC)
mäku-xuð-da *mosa-xa-da* *kada-bi-ða.*
house-ABL.SG-3SG(POSS) work-LAT.SG-3SG(POSS) take-PRF-3SG.OC
'An official from our party committee came to take father from his house to work.'

b. *Äsi-j* *pe-t* *käni-ta-š* ***nu*** *lokri*
father-1SG(POSS) street-LAT go-FUT-PST(3SG.SC) door suddenly
toru-ða
close-3SG.OC
'My father went out on the street and suddenly closed the door.'

Owing to the uniqueness of the referent in the case of *d'urak baða* and due to the evident associative relation of the object referent in the case of *nu* to an already implemented referent (here: the house of the father (cf. 34a)) they are definite as a result of the encyclopedic knowledge of the discourse participants. Their definiteness is therefore semantically motivated and triggers agreement in the objective conjugation, as can be observed in (33) and (34).

[14] Siegl (2013: 490) himself points out that the combination of a future and a past tense marker is semantically unexpected.

Hence, the Forest Enets objective affixes, like the Tundra Nenets objective affixes, indicate specific properties of selected object arguments via a grammatical agreement relation. The Forest Enets verb takes an agreement suffix of the objective conjugation if its third person direct object deviates from the prototypical patient argument in being definite. Supported by its object number specification it establishes the basic syntactic function of the occurring nominal expressions, which, by and large, have lost their structural case morphology. Accordingly, the relation between the Tundra Nenets and the Forest Enets objective suffixes is characterized by an increase of syntactic obligatoriness and the grammaticalization from pragmatic definiteness to semantic definiteness marking (cf. Lehmann 1982: 57; Himmelmann 1997: 39). That is why Forest Enets DOI does not merely reflect pragmatic characteristics of the selected third person objects like the Nenets objective agreement marking. Rather it also fulfills a discriminatory function in that it distinguishes between arguments and their roles.

6 Conclusion

It has been shown in this paper that in the Northern Samoyedic languages Nganasan, Tundra Nenets and Forest Enets the grammaticalization of objective agreement markers on verbs goes hand in hand with the specific development of accusative case and definiteness markers on nouns.

The north eastern language Nganasan has brought forth a system of DOM that exclusively applies to nouns. This is due to various phonological processes that have affected accusative case markers and to the grammaticalization of possessor agreement affixes to definiteness markers. The agreement markers on Nganasan finite verbs do not yet serve as DOM in the proper sense. The objective affixes of them incorporate anaphoric third person object arguments. They only co-occur with free object constituents if they are bound by the latter in a typical clitic left-dislocation construction. In the north western language Tundra Nenets DOM of nouns does not exist. Uniform accusative case marking prevails instead and nominal possessor agreement markers predominantly specify possessivity relations between possessum nouns and possessors. However, the agreement morphemes of the Tundra Nenets objective conjugation have adopted functional features of object agreement markers that enable them to reflect the non-typical behavior of syntactic objects in information structuring. In this way, the inflectional system of the Tundra Nenets finite verbs has acquired the function of DOI by a process of grammaticalization. In Forest Enets, the central Northern Samoyedic language, the agreement morphemes of the objective conjugation already exhibit evident features of full-fledged head-marking verb suffixes. They indicate the presence of a definite third person direct object. Since Forest Enets differs from Tundra Nenets in that the mere structural case marking on its nouns is becoming extinct, the choice of the respective verbal agreement allomorph in Forest Enets serves to distinguish between clausal arguments and their roles.

Since the Uralic SAP pronouns are neither immediately affected by the emergence and loss of nominal differential object markers nor involved in the grammaticalization

of the objective agreement suffixes on verbs, the Northern Samoyedic system of personal pronouns has developed independently. In Tundra Nenets and Forest Enets it has undergone a significant dimensional progression. In contrast to Nganasan, which employs a system of morphological realization and non-realization drawing a distinction between pronominal agent and patient arguments, Tundra Nenets and Forest Enets have grammaticalized the morpheme *śi?*, which nowadays represents the direct object forms by suppletion. This is summarized in Figure 2:

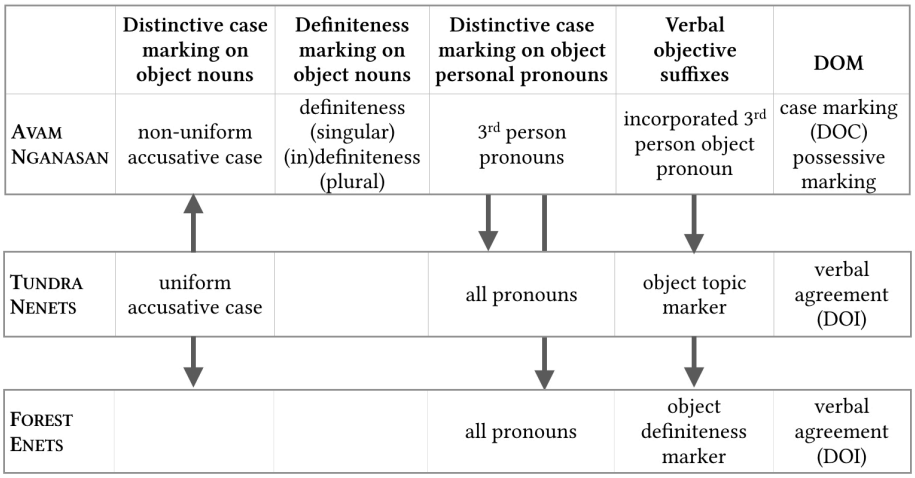

Figure 2: The development of structural case marking on nouns and pronouns and of the objective conjugation in Northern Samoyedic

Abbreviations

1	first person
2	second person
3	third person
ABL	ablative
ACC	accusative
ADV	adverbial suffix
AOR	aorist
AUGM	augmentative
CAR	caritative
CAUS	causative
CNEG	connegative
DAT	dative
DEST	destinative
DIM	diminutive
DOC	differential object case marking
DU	dual
DUR	durative
EMPH	emphasis
EP	epenthetic vowel
ESS	essive
EXCL	exclamative
FOC	focus marker
FREQ	frequentative
FUT	future
GEN	genitive
HAB	habituative
IMPFUT	imperative future
INCH	inchoative

INF	infinitive	PST	past tense
INTER	interrogative marker	PSTPF	past perfect
IPFV	imperfective	PF	present perfect
ITER	iterative	PL	plural
LAT	lative	POSS	possessive
LIM	limitative	PRF	perfect
LOC	locative	PROB	probabilitative
MOD	modal gerund	PROL	prolative
NARR	narrative	PRS	present continuous
NEGAUX	negation auxiliary	PTCP	participle
NMLZ	nominalizer	RC	reflexive conjugation
NOM	nominative	RES	resultative
O	object	SC	subjective conjugation
OC	objective conjugation	SG	singular
PASS	passive	SUP	supine

Data sources:

- Stories *Два чума* (Languedoc. dva čuma), *Как утонули ребята* (Languedoc. rebjata), *Как сгорела наша школа* (Languedoc. škola) from the online corpus of the project "Languedoc", available at http://www.philol.msu.ru/~languedoc/rus/ngan/corpus.php [accessed on June, 24, 2017]
- Story *Отпуск* (Languedoc. otpusk) from the online corpus of the project "Languedoc", available at http://www.philol.msu.ru/~languedoc/rus/enets/corpus.php [accessed on June, 24, 2017]
- Stories *Kehy Luu* (NOS. kehy luu), *Mou Djamezi* (NOS. mou djamezi) from the online corpus of the project "Negation in Ob-Ugric and Samoyedic Languages", University of Vienna, available at http://www.univie.ac.at/negation/sprachen/nganasanischa.html [accessed on June, 24, 2017]
- Stories *Tesjada Nisjami* (NOS. tesjada nisjami), *Tet Weli Teta* (NOS. tet weli teta) from the online corpus of the project "Negation in Ob-Ugric and Samoyedic Languages", University of Vienna, available at http://www.univie.ac.at/negation/sprachen/nenzischa.html [accessed on June, 24, 2017]
- Stories *Text 1* (NOS. text 01), *Text 39* (NOS. text 39) from the online corpus of the project "Negation in Ob-Ugric and Samoyedic Languages", University of Vienna, available at http://www.univie.ac.at/negation/sprachen/enzischa.html [accessed on June, 24, 2017]

References

Abondolo, Daniel. 1998. *The Uralic languages*. London & New York: Routledge.
Aissen, Judith. 2003. Differential object marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21(3). 435–483.
Bartos, Huba. 1999. *Morfoszintaxis és interpretáció: A magyar inflexiós jelenségek szintaktikai háttere. [Morphosyntax and interpretation: The syntactic background of inflectional phenomena in Hungarian]*. Budapest: Eötvös Loránd University dissertation.
Bossong, Georg. 1985. *Differentielle Objektmarkierung in den neuiranischen Sprachen*. Tübingen: Narr.
Castrén, Matthias A. 1845. *Grammatik der samojedischen Sprachen*. St. Petersburg: Buchdruckerei der Kaiserlichen Akademie der Wissenschaften.
Croft, William. 1988. Agreement vs. Case marking and direct objects. In Michael Barlow & Charles Ferguson (eds.), *Agreement in natural language: Approaches, theories, descriptions*, 159–179. Stanford: CSLI Publications.
Dalrymple, Mary & Irina Nikolaeva. 2011. *Objects and information structure*. Cambridge: Cambridge University Press.
Dékány, Éva. 2015. The syntax of anaphoric possessives in Hungarian. *Natural Language and Linguistic Theory* 33(4). 1121–1168.
Diewald, Gabriele. 2011. Pragmaticalization (defined) as grammaticalization of discourse functions. *Linguistics* 49(2). 365–390.
É. Kiss, Katalin. 2010. A magyar tárgyas és alanyi igeragozás kialakulásának szintaktikai hátteréről [The syntactic background of the emergence of the Hungarian objective and subjective conjugation]. *Nyelvtudományi Közlemények* 107. 131–146.
Gerland, Doris. 2014. Definitely not possessed? Possessive suffixes with definiteness marking function. In Thomas Gamerschlag, Doris Gerland, Rainer Osswald & Wiebke Petersen (eds.), *Frames and concept types*, 269–292. Heidelberg: Springer.
Gulya, János. 1995. Transitivität, Determiniertheit und objektive Konjugation. *CIFU VIII. Pars* 3. 96–99.
Hajdú, Péter. 1953. Die ältesten Berührungen zwischen den Samojeden und den jenisseischen Völkern. *Acta Orientalica* 3. 73–100.
Hajdú, Péter. 1988. Die samojedischen Sprachen. In Denis Sinor (ed.), *The Uralic languages*, 3–40. Leiden: Brill.
Havas, Ferenc. 2004. Objective conjugation and medialisation. *Acta Linguistica Hungarica* 51(1–2). 95–141.
Helimski, Eugene. 1998a. Nganasan. In Daniel Abondolo (ed.), *The Uralic languages*, 480–516. London: Routledge.
Helimski, Eugene. 1998b. Selkup. In Daniel Abondolo (ed.), *The Uralic languages*, 548–579. London: Routledge.
Himmelmann, Nikolaus P. 1997. *Deiktikon, Artikel, Nominalphrase. Zur Emergenz syntaktischer Struktur*. Tübingen: Niemeyer.
Honti, László. 1995. Zur Morphotaktik und Morphosyntax der uralischen/finnisch-ugrischen Grundsprache. *CIFU* 8(1). 53–82.

Honti, László. 2009. Tűnődések tárgyas igeragozásunk kialakulásáról [On the emergence of the Hungarian definite conjugation]. *Nyelvtudományi Közlemények* 106. 132–146.
Hopper, Paul J. & Elizabeth C. Traugott. 1993. *Grammaticalization*. Cambidge: Cambridge University Press.
Janhunen, Juha. 1982. On the structure of Proto-Uralic. *Finnisch-ugrische Forschungen* 44. 23–42.
Janhunen, Juha. 1998. Samoyedic. In Daniel Abondolo (ed.), *The Uralic languages*, 457–479. London: Routledge.
Janhunen, Juha. 2009. Proto-Uralic – what, where, and when? *Mémoires de la Société Finno-Ougrienne* 258. 57–78.
Katz, Hartmut. 1979. Beitrag zur Lösung des Problems der Entwicklung von ursam. **j* im Selkupischen und der hiemit zusammenhängenden Fragen der historischen Morphologie dieser Sprache und des Uralischen. *SFU* 15. 168–176.
Katzschmann, Michael. 2008. *Chrestomathia Nganasanica. Texte, Übersetzung, Glossar, Grammatik*. Norderstedt: Books on Demand GmbH.
Körtvély, Erika. 2005. *Verb conjugation in Tundra Nenets*. Szeged: SzTE Finnugor Tanszék.
Künnap, Ago. 1999. *Enets*. Munich: LINCOM Europa.
Künnap, Ago. 2008a. On the 3rd person verbal marker **-sV* and the definite conjugation in Uralic languages. *Linguistica Uralica* 65. 178–197.
Künnap, Ago. 2008b. On the Finnic and Samoyedic genitive and accusative plural. *Linguistica Uralica* 64. 34–40.
Kuno, Susumu. 1987. *Functional syntax, anaphora, discourse and empathy*. Chicago: University of Chicago Press.
Labanauskas, Kazimir I. 1995. *Neneckij fol'klor: Mify, skazki, istoricheskie predanija [Nenets folklore: Myths, fairy tales, historical legends]*. Krasnojarsk: Upravlenie Kul'tury Administracii Tajmyrskogo Avtonomnogo Okruga.
Lehmann, Christian. 1982. *Thoughts on grammaticalization: A programmatic sketch* (Arbeiten des Kölner Universalien-Projekts 48). Cologne: Institut für Sprachwissenschaft, Universität zu Köln.
Lehtisalo, Toivo. 1939. Eräästä ostjakkisamojedin refleksiivipronominista [The first Ostyak reflexive pronouns]. *Virittäjä* 43. 113–114.
Mikola, Tibor. 1988. Geschichte der samojedischen Sprachen. In Denis Sinor (ed.), *The Uralic languages: Description, history and foreign influences*, 219–263. Leiden: Brill.
Nikolaeva, Irina. 2014. *A grammar of Tundra Nenets*. Berlin: de Gruyter Mouton.
Payne, Thomas E. 1997. *Describing Morphosyntax: A guide for field linguists*. Cambridge: Cambridge University Press.
Prokovjev, Georgij N. 1937. Eneckij (enisejsko-samoedskij) dialect [Enets (Yenisey-Samoyed) dialect]. In Georgij N. Prokovjev (ed.), *Jazyki i pis'mennost' narodov Severa [Languages and literature of the peoples of the North]*, vol. 1, 75–90. Moscow: Gosudarstvennoe učebno-pedagogičeskoe izdatel'stvo.
Rédei, Károly. 1962. A tárgyas igeragozás kialakulása [The development of the objective conjugation]. *Magyar Nyelv* 58. 421–435.

Salminen, Tapani. 1996. Comments on Lázló Honti's paper "Zur Morphotaktik und Morphosyntax der uralischen/finnisch-ugrischen Grundsprache". *CIFU* 8(8). 25–27.
Salminen, Tapani. 1997. *Tundra Nenets inflection*. Helsinki: Suomalais-Ugrilainen Seura.
Salminen, Tapani. 1998. Nenets. In Daniel Abondolo (ed.), *The Uralic languages*, 516–547. London: Routledge.
Siegl, Florian. 2008. A note on personal pronouns in Enets and Northern Samoyedic. *Linguistica Uralica* 64. 119–130.
Siegl, Florian. 2013. *Materials on Forest Enets, an indigenous language of Northern Siberia*. Helsinki: Société Finno-Ougrienne.
Siewierska, Anna. 1999. From anaphoric pronoun to grammatical agreement marker: Why objects don't make it. *Folia Linguistica* 33(1-2). 225–252.
Sorokina, Irina P. 2010. *Èneckij jazyk [Enets]*. St. Petersburg: Nauka.
Tereščenko, Natalja M. 1966. Eneckij jazyk [Enets]. In Vasilij I. Lytkin (ed.), *Jazyki narodov SSSR, vol. 3: Finno-fgorskie jazyki i samodijskie jazyki [Languages of the USSR, Volume 3: Finno-Ugric and Samoyedic languages]*, 438–457. Moscow: Nauka.
Toivonen, Ida. 1998. Lexical splits in Finnish possession (ms.) Stanford.
Traugott, Elizabeth C. 2004. Exaptation and grammaticalization. In Minoji Akimoto (ed.), *Linguistic studies based on corpora*, 133–156. Tokyo: Hituzi Syobo.
Van Valin, Robert D. Jr. 2001. *An introduction to syntax*. Cambridge: Cambridge University Press.
Wagner-Nagy, Beata. 2002. *Chrestomathia Nganasanica. Studia uralo-altaica. Supplementum 10*. Szeged: SZTE Finnugor Tanszék.
Wratil, Melani. 2013. The distribution and reference of subject and object personal pronouns in Nganasan. *Finnisch-Ugrische Mitteilungen* 37. 241–265.

Chapter 13

Differential A and S marking in Sumi (Naga): Synchronic and diachronic considerations

Amos Teo
University of Oregon

This paper presents data on the argument marking system of Sumi, a Tibeto-Burman language of Nagaland, and examines the possible diachronic sources of differential A and S marking in the language. In Sumi, there is a two-way contrast for A arguments (*=no* vs. *=ye*) and a three-way contrast for S arguments (*=no* vs. *=ye* vs. unmarked). I examine the triggers of such differential marking, looking at semantic factors associated with transitivity, as well as pragmatic factors associated with information structure.

In transitive clauses, *=no* is more commonly found on A arguments, where it marks a semantic agent, while *=ye* on A arguments signals a lack of agentivity. In intransitive clauses, *=no* on S arguments marks contrastive focus, while *=ye* marks a contrastive topic, or sometimes continuing reference.

Based on available synchronic data from Sumi and related languages, I examine the possibility that one source for the marker *=ye* is an old locative marker. I also examine potential sources for the marker *=no*, which has cognates across the language family that function as agentives or ergatives, as well as instrumentals and ablatives.

1 Introduction

Sumi, also known as Sema or Simi, is a Tibeto-Burman language spoken in Nagaland, North-East India. Like many other Tibeto-Burman languages of the area, Sumi displays semantically and pragmatically motivated differential A and S argument marking.[1] This type of differential argument marking is not unusual for the area, where it appears that semantic and pragmatic factors play a major role in the distribution of what is sometimes

[1]In this paper, I follow Dixon (1994)'s use of the terms A, S and O to refer to: the subject of transitive clause, the subject of an intransitive clause; and the object of a transitive clause respectively.

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described as the 'ergative' or the 'agentive' in these languages.[2] Similar patterns of argument marking are found in other languages of Nagaland, including Mongsen Ao (Coupe 2007; 2011), and more generally across Tibeto-Burman (see DeLancey 2011; Chelliah & Hyslop 2012).

What is unusual about Sumi, at least for a Tibeto-Burman language of the area, is that I find a two-way distinction with A marking: the choice of two enclitics: *=ye* and *=no*; but a three-way distinction with S marking: the choice of the two enclitics: *=ye* and *=no*, and no overt morphological marking. In addition, O arguments are unmarked. By comparison, two closely related languages Khezha and Mao display the more typical 'optional ergative' system, where A and S may take an overt 'ergative' marker vs. no overt morphological marking; in addition to differential O argument marking. For instance, Khezha has an 'optional' ergative marker *nü* (glossed 'nominative' by Kapfo 2005) on A arguments, as well as an 'optional' patientive / locative marker *eh* /è/ on O arguments.

Traditional accounts of differential argument marking have focused on differential object marking and the role of animacy and definiteness (e.g. Bossong 1983; 1985; Aissen 2003). More recent work on differential argument marking has also looked at the role of information structure (e.g. Dalrymple & Nikolaeva 2011; Iemmolo & Klumpp 2014). Comparatively fewer studies have examined differential subject marking / differential agent marking / optional ergativity, with notable exceptions such as de Hoop & de Swart (2008) and McGregor & Verstraete (2010). Although differential subject marking has been assumed to be the mirror counterpart of differential object marking, there is evidence suggesting that the triggers of both are not identical (Malchukov 2008; Fauconnier 2011).

Malchukov (2008) also argues that the indexation of animacy is simply an epiphenomenon associated with the expression of two potentially competing functions: the indexation of semantic roles, and the differentiation of subjects from objects. Fauconnier (2011) considers the role of animacy, but rejects the notion that 'Agents' (defined as participants in the A role) and 'Objects' can be placed on a single animacy hierarchy (as per Silverstein 1976). Rather, she suggests that unexpectedness plays a crucial role in differential agent marking, where for instance, inanimates are not expected to act as Agents and may receive special morphological marking or be restricted from appearing as Agents. Similarly, McGregor (2010) shows that in Gooniyandi and Warrwa, the absence of an ergative morpheme on an A argument marks an unusual or unexpected A.

Similarly, it will be shown that in Sumi, differential A and S marking is not triggered by some inherent animacy of the referent, but by the interaction between situational factors such as agentivity, defined by the degree of volition, control and purpose associated with a referent in a particular situation; and discourse pragmatic functions, including the marking of contrastiveness and unexpectedness. However, this notion of 'unexpectedness' is primarily about the management of listener-based and/or speaker-based expectations.

[2]LaPolla (1995) distinguishes 'ergative' from 'agentive' marking thus: the former is 'systematic' (in others words, the A argument is consistently marked); while the latter is 'non-systematic' (in other words, what one might call 'differential A marking' or 'optional ergativity', e.g. Chelliah & Hyslop 2012; McGregor 2010). In this paper, I use the terms 'ergative' and 'agentive' in a similar fashion to LaPolla.

In §2, I first give some background on Sumi and describe the circumstances under which argument marking is obligatory in the language. In §3, I then describe some of the triggers of differential A and S marking. In §4, I consider the diachronic origins of these markers by presenting both language-internal and cross-linguistic evidence. Finally, in §5, I summarize the findings and consider future avenues of inquiry.

2 Language background

Sumi, also known as Sema, is a Tibeto-Burman language spoken by an estimated 104,000 speakers (Lewis et al. 2013) mainly in Nagaland, North-East India. Burling (2003) classifies Sumi as a member of the Angami-Pochuri group, along with Angami, Khezha and Mao. Many Sumi speakers also speak English, as well as Nagamese, an Assamese-based creole. The canonical word order of Sumi is AOV / SV, like other Tibeto-Burman languages of the region. In Sumi transitive clauses, A arguments must be marked by either *=ye* or *=no*,[3] while O arguments are typically unmarked morphologically when they occur right before the verb, as seen in (1)–(3).

(1) Sumi (Tibeto-Burman; Kutili_bird_short, Line 23)[4]
… ***[a-zü=no]$_A$*** ***[küma]$_O$*** *yipesü-u-ve.*[5]
NRL-water=*no*]$_A$ [3DU$_O$ sweep-go-VM
'… the water swept them both away.'

(2) * *a-zü küma yipesü-u-ve*

(3) Sumi (Tibeto-Burman; Origin_of_axone, line 5)
… ***[küma=ye]$_A$*** ***[a-kishina]$_O$*** *chu-kha-mo-ve=ke=hu* …
3DU=ye]$_A$ [NRL-lunch]$_O$ eat-NCPL-NEG-VM=NZR=DIST
'… they were unable to finish their lunch …'

First and second person singular pronominal O arguments are realized as proclitics on verbs, as in (4) and (5).[6]

(4) Sumi (Tibeto-Burman; elicited)
Pa=no ***o=****he.*
3SG=*no* 2SG=hit
'He hit you.'

[3]There is in fact a third option, the additive *ghi* 'also'. Additionally, speakers may choose to omit an NP altogether. However, these will not be discussed in this paper.

[5]Examples from texts can be found at http://catalog.paradisec.org.au/repository/ABT1. Cite as: Amos Teo (collector). 2008. *Sumi (India)* (ABT1), Digital collection managed by PARADISEC. DOI: 10.4225/72/56E7A73CE9FA7

[5]In this paper, examples are given in the working orthography, which does not consistently mark tones. The graph *ü* represents a high central unrounded vowel /ɨ/.

[6]Note that these pronominal proclitics are identical in form to the possessive pronominal prefixes.

(5) Sumi (Tibeto-Burman; elicited)
No=no ***i=he.***
2SG=*no* 1SG=hit
'You hit me.'

In intransitive clauses, S arguments can be morphologically unmarked, as in (6), or marked with either *=ye* or *=no*, as in (7) and (8) respectively.

(6) Sumi (Tibeto-Burman; Origin_of_axone, line 3)
Küma *a-lu=lo* *hu-niye=ke=lo* *…*
3DU NRL-field=LOC go.field-PROS=NZR=LOC
'While the two were about to go to the field …'

(7) Sumi (Tibeto-Burman; Telephone_conversation01, line 4)
O ***Kivi=ye*** *zü* *a-phi.*
EXCL Kivi=*ye* sleep PROG-CONT
'Oh, Kivi is still sleeping.' (2nd mention)

(8) Sumi (Tibeto-Burman; elicited)
Kivi=no *zü* *a-ni.*
Kivi=*no* sleep PROG-NPST
'Kivi (not someone else) is sleeping.'

The obligatoriness of argument marking therefore depends largely on clause type: A arguments (and as I shall demonstrate, the first NPs in non-verbal clauses) must be accompanied by either *=ye* or *=no*, while S arguments may be marked by *=ye*, *=no* or be morphologically unmarked. In all cases, the choice of marking, or lack thereof, depends largely on semantic and pragmatic factors. These will be examined in the next section.

3 Triggers of differential A and S marking

In this section, I describe some of the triggers of differential A and S marking in Sumi. The analysis presented here is a summary of the one presented in Teo (2012). Generally, in transitive clauses, situational characteristics of arguments like control and volition largely determine the choice of *=no* or *=ye*. In intransitive and non-verbal clause types, it seems that discourse characteristics like topicality, contrastiveness, focus, and perhaps unexpectedness are the main triggers. However, there are cases where such discourse characteristics appear to also influence differential A marking in transitive clauses, while certain situational characteristics of arguments may also be relevant for differential S marking.

3.1 Transitive clauses

As mentioned in the previous section, A arguments in clauses with two or more core arguments must take either *=no* or *=ye*. The use of *=no* in such clauses is often associated with an agent that has a high degree of volition, control and purpose. For instance, in (9)–(11), *=no* marks a volitional and purposeful A that is able to effect a change in the world. Note that in (10), the river is regarded as a supernatural force that has been actively preventing a mother from making a crossing with her baby, and eventually sweeps them away when they attempt to cross. In contrast, *=ye* often marks experiencers, which are characterized by having a low degree of volition and control over an action, as in (12) and (13).[7] These features of the A argument: volition, control and purpose, are in line with some of the components proposed by Hopper & Thompson (1980) in their analysis of semantic transitivity.

(9) Sumi (Tibeto-Burman; elicited)
I=no *a-lhache* *he-qhi-ve.*
1SG=*no* NRL-ant hit-kill-VM
'I killed an ant.'

(10) Sumi (Tibeto-Burman; Kutili_bird_short, line 23)
… ***a-zü=no*** *küma* *yipesü-u-ve.*
NRL-water=*no* 3DU sweep-go-VM
'… the water swept them both away.'

(11) Sumi (Tibeto-Burman; elicited)
Ni-nga=no *kuu* *shi-va* *kea?*
1PL-child=*no* what do-PRF Q
'What has our daughter done?'

(12) Sumi (Tibeto-Burman; Kutili_bird_short, line 27)
Ni=ye *ni-nga=sütsa* *chu-mla-va-i.*
1SG=*ye* 1PL-daughter=voice hear-NCAP-PRF-EMPH
'I no longer hear any news from our daughter.'

(13) Sumi (Tibeto-Burman; Kutili_bird_short, line 26)
Ni-nga=ye *kuu* *shi-va* *kea?*
1PL-child=*ye* what do-PRF Q
'What has happened to our daughter?'

Certainly, in most of these examples, the degree of agentivity of the A is closely linked to the lexical verb: *=no* is preferred on the A argument with canonical transitive verbs like 'kill', as in (9), where A has a higher degree of agentivity; while *=ye* is preferred on A

[7] In (13), the argument marked by *=ye* would not be considered to be an A argument, but rather an experiencer/locative subject.

with verbs of passive perception like 'see' or 'hear', as in (12), where A has a low degree of agentivity.

With some verbal predicates, the choice of *=no* or *=ye* on A corresponds to a specific sense of the verb. For example, (14), where A is marked with *=ye*, describes a scene where the referent is not in control of the action. One could interpret *pele* as 'to spill' or 'to bleed'. In contrast, in (15), where A is marked with *=no*, the verb *pele* has more of a causative interpretation: 'cause to spill'.

(14) Sumi (Tibeto-Burman; elicited)
Pa=ye *a-ji* *pele-ve.*
3SG=*ye* NRL-blood spill-VM
'He was bleeding.'

(15) Sumi (Tibeto-Burman; elicited)
Pa=no *a-ji* *pele-ve.*
3SG=*no* NRL-blood spill-VM
'He threw away blood.'

With some verbal predicates, as in (16), *=no* is the expected marker on A if one assumes that the chief should have authority among his people. In comparison, in one possible interpretation of (17), the use of *=ye* suggests that A is a less effective agent, i.e. a chief who cannot make his people obey him even though he gave an explicit command. Note that animacy and definiteness do not appear to affect the choice of *=no* or *=ye* in these examples.

(16) Sumi (Tibeto-Burman; elicited)
A-kü-ka-u=no *a-zah* *tsü-ve.*
NRL-NZP-rule-DEF=*no* NRL-command give-VM
'The chief gave a command.'

(17) Sumi (Tibeto-Burman; elicited)
A-kü-ka-u=ye *a-zah* *tsü-ve.*
NRL-NZP-rule-DEF=*ye* NRL-command give-VM
'The chief gave a command.' (One interpretation: has a sarcastic reading and implies no one obeyed him.)

Transitive clauses show a split-A system, where *=no* typically correlates with higher agentivity and *=ye* with lower agentivity, such as experiencers with a low degree of volition and control.[8] However, the agentivity of the A referent cannot always explain the distribution of the morphemes *=no* and *=ye*. It is important to note that the sentence in (17) could also be interpreted without sarcasm as '(Someone else did something), as for the chief, (he) gave a command.' This, as well as evidence from intransitive clauses

[8] A prototypical "experiencer", as per Payne (1997: 50), is "an entity that receives a sensory impression, or in some other way is the locus of some event or activity that involves neither volition nor a change of state."

(see next section), suggests that *=ye* can also function as a kind of topic marker in some transitive clauses.

In narratives, it is not always easy to tease apart the various functions of *=ye*. For example, in (18),[9] *=no* occurs in the first clause, which describes how two sisters made *axone*, a popular Sumi dish of fermented soya beans, for the very first time. In contrast, *=ye* is found in the second clause, which describes how Sumis then habitually cooked the dish. Although the use of *=no* and *=ye* does not appear to be motivated by situational characteristics relating to volition and control of the participants, one might still argue that according to Hopper & Thompson's (1980) criteria, the first clause displays a higher degree of transitivity than the second, since the former refers to the first (telic and punctual) instance of an event, while the latter refers to a repeated event that is atelic and non-punctual. On the other hand, in an alternative analysis that assigns greater importance to discourse factors, *=no* highlights that this was a newsworthy event, and that it was this pair of sisters, not anyone else, who instigated the first instance of the event; while *=ye* is used in the second clause to set up a change in A argument from the two sisters to Sumis in general.

(18) Sumi (Tibeto-Burman; Origin_of_axone, lines 17–20)
Tishi=no ***[küma=no*** *a-xone* *lho-chu-phe=püzü=no]*
like.that=*no* [3DU=*no* NRL-ferm.soya.beans cook-eat-start=CONJ=CONN]
tingu=no *a-la-u=ye* ***Sümi=qo=ye*** *a-xone*
because.of.that=*no* NRL-path-DEF=*ye* [Sumi=PL=*ye* NRL-ferm.soya.beans
lho-chu-u-ve].
cook-eat-go-VM]
'Henceforth, the two (sisters) started to cook and eat axone (a fermented soya bean dish) and consequently from then on, the Sumis have cooked and eaten axone.'

In some cases, it may be difficult to tell if *=no* is marking an agent or some kind of contrast. For example, in (19), the A argument has volition and control, which may explain the appearance of *=no*. However, it is also possible that the use of *=no* is associated with counter-expectation, i.e. the event that is instigated by A is not expected given the known circumstances, if one assumes that having children gives a husband less reason to abuse his wife.

(19) Sumi (Tibeto-Burman; Kutili_bird_short, lines 6–7)
… *a-tianu* *a-u-ve=mu* ***[a-kimi=no*** *li=sapüsa]*
NRL-children EXIST-go-VM=NEG NRL-husband=*no* 3SG.F=mistreat]
'… despite having children, the husband mistreated her.'

In general, the degree of agentivity of A seems to be the more important factor in the choice of *=no* or *=ye*. A corpus study is currently being done to investigate the extent to

[9] It should be noted that *=no* and *=ye* can also occur on adverbial adjuncts. This will be discussed further in §4.4.

which the choice of =no or =ye is determined by the number of core arguments licensed by a verb, the semantic roles assigned by a verb, and the animacy of A.

3.2 Intransitive clauses

In intransitive clauses, the first time an argument is mentioned in discourse, it can be morphologically unmarked, as in (20). However, if an S is being contrasted with another S, it takes *=ye*, which marks it as a contrastive topic, i.e. 'as for this S, S did something', as in (21).

(20) Sumi (Tibeto-Burman; Telephone_conversation01, line 4)
Kivi *zü* *a-ni.*
Kivi sleep PROG-NPST
'Kivi is sleeping.' (1st mention)

(21) Sumi (Tibeto-Burman; Telephone_conversation01, line 7)
O ***Kivi=ye*** *zü* *a-phi.*
EXCL Kivi=*ye* sleep PROG-CONT
'Oh, Kivi is still sleeping.' (2nd mention) (Kivi was previously mentioned, but the speaker then switched to talking about her other son, before switching back to talking about Kivi)

S is unmarked after having been introduced in a previous presentational clause, as in (22), which follows the opening line: 'Once upon there were two sisters'. Here, the S argument *küma* is not marked with *=ye* because the two sisters are not being contrasted with anyone else in the story.

(22) Sumi (Tibeto-Burman; Origin_of_axone, line 3)
Küma *a-lu=lo* *hu-niye=ke=lo* *…*
3DU NRL-field=LOC go.field-PROS=NZR=LOC
'While the two were about to go to the field …'

Importantly, S is always marked with *=ye* in elicited sentences, such as (23).

(23) Sumi (Tibeto-Burman; elicited)
A-kulu=ye *ighi=va.*
NRL-light=*ye* come-PRF
'The power has come back.'

This illustrates how only in data collected in more naturalistic contexts, i.e. from conversations and narratives, can S be morphologically unmarked. When working with recorded texts, if speakers are asked to repeat sentences produced in such texts, they will sometimes add *=ye* to S arguments, even in cases where *=ye* was not found with

S in the original text. This suggests that the use of *=ye* in intransitive clauses is associated with some discourse pragmatic function, such as continuing topic, than with the marking of the semantic role of experiencer, as was described for transitive clauses.

In addition, S arguments can be marked by *=no*. The use of *=no* here, rather than marking the semantic role of agent, typically marks some kind of focus on the argument. For example, in (24), *=no* is used when S is the answer to a question. It can also be used to highlight contrastive focus, i.e. '*this* S, not any other one, as well as corrective focus, i.e. '*this* S, not the one you think it is'.

(24) Sumi (Tibeto-Burman; elicited)
Pa=no *nu-va.*
3SG=*no* laugh-PRF
'He laughed (not anyone else).' (answers the question: "Who laughed?")

In some situations, S is marked with *=no*, with no obvious contrastive focus reading. An example is given in (25), which describes God's descent to Earth in the biblical story of the Tower of Babel.

(25) Sumi (Tibeto-Burman; Sumi Bibel Genesis 11:5)
… ***A-mpeu=no*** *iqi-e.*
NRL-lord=*no* descend-EMPH
'… the Lord came down.'

The ongoing corpus study will also look at how frequently *=no* occurs with S and what factors best account for its occurrence in intransitive clauses, since it is unclear whether *=no* is used in examples (25) because: (a) it signals a high degree of volition, control and purpose associated with the referent, i.e. an omnipotent being; or (b) it marks some degree of surprise or counter-expectation for the action performed by S; or (c) it is a combination of these two and other factors.

3.3 Non-verbal clauses

Non-verbal clauses are also worth mentioning in a discussion of differential argument marking in Sumi. There is no copula verb in the affirmative present tense and in such clauses, the first NP is obligatorily marked by either *=ye* or *=no*. In pragmatically unmarked statements, the subject requires *=ye*, cf. (26) and (27). If the first NP is marked with *=no*, as in (28), corrective focus or contrastive focus reading is obtained, similar to the use of *=no* with S arguments in intransitive clauses. This particular example came about when a speaker corrected the researcher for assuming that the father of a person of mixed ancestry in the town was Sumi – in fact, it was the mother who was Sumi.

(26) Sumi (Tibeto-Burman; elicited)
Pa-za=ye *Sümi.*
3SG-mother=*ye* Sumi
'His mother is Sumi.'

(27) ***Pa-za** Sümi.*

(28) Sumi (Tibeto-Burman; natural conversation, unrecorded)
Pa-za=no *Sümi.*
3SG-mother=*no* Sumi
'His mother is Sumi.' (i.e. not his father, not anyone else)

Unlike in the previously discussed clause types, the choice between *=no* and *=ye* in equative clauses cannot be attributed to differences in the semantic transitivity of the clause. Rather, it is discourse pragmatic factors that seem to condition the distribution of *=no* and *=ye*, with the former used to mark contrastive or corrective argument focus while the latter is used to mark either a new, contrastive or continuing topic.

3.4 Summary of triggers of differential argument marking

A summary of the functions of *=no* and *=ye* by clause type is given in Table 1.

Table 1: Summary of functions of *=no* and *=ye* by clause type

Clause type	***=no***	***=ye***	**unmarked**
Transitive clauses	'agent' – high degree of control, volition, purpose etc.	'experiencer' – low degree of control, volition, purpose etc.	[not possible]
Intransitive clauses	'focus' – contrastive / corrective	'topic' – contrastive, continuing	first mention of referent
Non-verbal clauses	'focus' – contrastive / corrective	'topic' – new, contrastive, continuing	[not possible]

It appears that situational characteristics of arguments like control and volition play a large role in differential A marking in transitive clauses, while discourse characteristics like topicality and contrastiveness play a large role in differential argument marking in intransitive and equative clauses. Nevertheless, it is important to note that this distinction is not as clear-cut as it appears in Table 1. As previously shown, there are examples that suggest that discourse characteristics like focus and unexpectedness may play a role in determining differential A marking even in transitive clauses, while situational characteristics like volitionality and control may also determine differential S marking in some intransitive clauses. Crucially, it should be noted that certain features of referents like animacy and definiteness do not seem to play a large role in differential argument marking in Sumi. Certainly, such features interact with notions of discourse prominence and

expectedness, but any apparent indexation of these features could simply be regarded as epiphenomenal.

4 Origins of differential A and S marking

Having looked at some factors governing the synchronic pattern of differential argument marking in Sumi, let us now consider the diachronic origins of the relevant markers. Given that the primary functions of *=no* and *=ye* differ by clause type, and that different clause types differ in terms of the obligatoriness of argument marking, it would be prudent to consider the origin of the *=ye* and *=no* markers in each clause type separately.

4.1 Origins of *=ye* in transitive clauses

It was shown earlier that experiencers in transitive clauses are typically marked by *=ye,* as in (29).

(29) Sumi (Tibeto-Burman; Kutili_bird_short, line 27)
Ni=ye *ni-nga=sütsa* *chu-mla-va-i.*
1SG=*ye* 1PL-daughter=voice hear-NCAP-PRF-EMPH
'I no longer hear any news from our daughter.'

There is some language-internal evidence that points to a locative as the source of this marker, even though the synchronic locative marker in Sumi is *lo*. In predicate possession clauses, such as (30), the possessor is marked with *=ye*. The possessor is then followed by the possessee and an existential verb *ani* or *ache*. The structure of such predicate possession clauses parallels that of existential clauses, as in (31), where the location *aghuloki lakhi lo* is marked with the synchronic locative *lo*, followed by the entity in question and an existential verb.

(30) Sumi (Tibeto-Burman; elicited)
Ni=ye *a-tsü* *a-ni.*
1SG=*ye* NRL-dog EXIST-NPST
'I have a dog.'

(31) Sumi (Tibeto-Burman; Origin_of_axone, line 2)
Khaghi ***a-ghuloki*** ***lakhi=lo*** *a-tsünipu* *kini* *a-che=ke=ti …*
long.ago NRL-time.period one=LOC NRL-sister two EXIST-PST=NZR=MED
'Once upon a time, there were two sisters …'

Given that Sumi does not appear to have a separate verb meaning 'to possess', but rather the same existential verb root *a-* in both clause types, this suggests that the *=ye* that is found on the possessor was once used to indicate location. The use of a locative subject in possessive constructions are common in Tibeto-Burman, but are also found in other languages of the world (see Clark 1978; Stassen 2013).

Similarly, in constructions that express 'to like', as in (32), the liker is typically marked with *=ye*. What looks like a verb meaning 'to like' *alo* has the internal structure of a noun meaning 'goodness' or 'good', and has the same nominal prefix *a-* found in the citation form of most nouns in Sumi. This would suggest that the origin of this construction is possibly a locative construction that may be translated literally as 'At you, *axone* is (usually) good?' The verb *cheni* marks the existence of a habitual state and in some contexts can be used interchangeably with the existential verb *ani*.

(32) Sumi (Tibeto-Burman; natural conversation, unrecorded)

No=ye	*a-xone*	*a-lo*	*che-ni*	*kea?*
2SG=*ye*	NRL-fermented.soya.beans	NRL-good	HAB-NPST	Q

'Do you like axone (fermented soya bean dish)?'

The use of locative constructions to code experiencer "subjects" is well attested in the languages of South Asia (see Verma & Mohanan 1990), including Tibeto-Burman languages of the area, such as Meithei (Chelliah 1997: 108) and Tshangla (Andvik 2010: 142). In these languages, locative (as well as dative) case marking is also found on possessor subjects in copular clauses. The second argument in these clauses is usually in the absolutive case, which is typically morphologically unmarked.

Preliminary comparative data from other Angami-Pochuri languages further suggest that Sumi *=ye* derives from an old locative marker. In Khezha, the locative marker is *eh* /è/,[10] as seen in (33), while in Mao, the locative marker is *yi*, as seen in (34).[11] It is possible that both these markers are cognates with Sumi *=ye*, although more work is to be done to establish their cognacy by examining regular sound correspondences between these languages.

(33) Khezha (Tibeto-Burman; Kapfo 2005: 286)

Mary	*nü*	***ketsü***	***eh***	*beh*	*a.*
Mary	NOM	garden	LOC	EXIST	PART

'Mary is in the garden.'

(34) Mao (Tibeto-Burman; based on Giridhar 1994: 185)

Athikho	***Lokho-yi***	*kahie.*
Athikho	Lokho-LOC	be.close?

'Athikho is close (in spatial distance) to Lokho.'

Given the above evidence, it would therefore be reasonable to hypothesize that an old Angami-Pochuri locative is the origin of Sumi *=ye*, at least in transitive clauses.

However, it should also be noted that in Khezha and Mao, O arguments appear to optionally take locative markers, i.e. there is a contrast between an overt marker and a lack of marking, though the triggers for such differential marking are not well described.

[10] The grave accent marks low tone in Khezha.

[11] Giridhar (1994) does not provide morpheme-by-morpheme glosses for his examples. All glosses for examples from Mao have been added based on his grammatical description and examples given in the grammar.

Examples where O arguments are overtly marked are given in (35)–(37). It is unclear if these markers really do mark semantic patients / grammatical objects vs. semantic locations, since they usually occur with contact verbs, e.g. *meke* 'to bite' or a compound based on a contact verb, e.g. *meke-thru* 'to kill by biting'. However, in Mao at least, the locative with O is also used with the verb 'to love', as in (37), suggesting it has started to mark O arguments more generally.

(35) Khezha (Tibeto-Burman; Kapfo 2005: 288)
Cotsü *nü* ***coha*** ***eh*** *meke-thru* *dah.*
black.ant NOM red.ant LOC bite-kill PART
'A black ant has killed a red ant.'

(36) Mao (Tibeto-Burman; based on Giridhar 1994: 180)
Nili-no ***Nisa-yi*** *da* *pie.*
Nili-ERG Nisa-LOC beat give
'Nili beats Nisa.'

(37) Mao (Tibeto-Burman; based on Giridhar 1994: 184)
Ai ***Athia-yi*** *le* *shüe.*
1SG.NOM Athia-LOC love
'I love Athia.'

While it is still uncertain what the exact triggers for such differential O marking in Khezha and Mao are, for the purposes of this paper, it is simply important to note the shift from a locative to what is starting to look like a patientive marker. Similar patterns have been noted in other Tibeto-Burman languages of South Asia, including Tshangla (Andvik 2010: 156), where the locative / dative *ga* may occur on an experiencer or goal patient.

It therefore appears that one source for *=ye* on A arguments in transitive clauses is the reanalysis of locative experiencers/patients as experiencer As. The function of *=ye* was then extended to non-agent-like As, possibly because it was then in contrast with the agentive marker *=no*. This would be a Sumi-specific innovation not found in other Angami-Pochuri languages where the locative optionally marks O arguments.[12]

4.2 Origins of *=ye* in intransitive and non-verbal clauses

In the previous section, we saw how a locative might have developed into an experiencer A marker. In intransitive clauses, the same locative marker might have developed into a topic marker. However, the latter is not a widely attested grammaticalization pathway

[12] In new data collected by the author, it turns out that there are some Sumi speakers who can optionally mark O arguments with the synchronic Sumi locative *=lo*. Little is known of the triggers of differential O marking, and preliminary data and speaker judgements shows much variation across the community: some speakers reject any marking on O arguments; some accept O marking only with verbs of contact; and others accept optional marking on O arguments in general.

and without sufficient language-internal and comparative evidence, I am left to speculate on the origins of *=ye* in intransitive clauses.

One possible clue to the origins of *=ye* marking on S arguments may come from no-verbal clauses. As previously shown, the first NP in such clauses obligatorily takes *=ye* or *=no*. Synchronically, there is no copular verb in such clauses in the present affirmative.[13]

In contrast, in the related language Mao, Giridhar (1994) gives examples of equative clauses (which he calls "predicate phrases") where *-ko-e* is added to the second argument in the clause, as in (38). What is represented as the suffix *-ko* is identical in form to a verbal nominalizing prefix in the language. This would suggest that *-e* has a verbal origin – more specifically, a copular verb.

(38) Mao (Tibeto-Burman; based on Giridhar 1994: 456)
hihi *a* *zhu-ko-e*
PRX 1SG name-*ko-e*
'This is my name.'

This may lead one to wonder if Sumi also once used a copular verb in equative clauses.[14] The pathway from copula to topic marker is not common, but it is attested. Harris & Campbell (1995: 165–166) give examples of copulas being reanalyzed as topic markers, in what they term "anti-cleft" constructions.

Alternatively, it is not uncommon for equative copulas to develop into focus markers, typically through cleft constructions (Heine & Kuteva 2002: 95). One could speculate that an old Sumi equative copula was reanalyzed as a focus marker via a cleft construction, which has been extended to mark new and continuing topics. This pathway is attested – for instance, Ueno (1987) uses historical textual data to show that the Japanese topic marker *wa* originated as a contrastive marker *ha* used for "emphasis" before it developed the function of marking topic differentiation, and eventually topic continuity.

In the case of Sumi, good historical data is not available and what has been presented here is still speculation. Furthermore, it is still unclear how *=ye* would have spread from equative clauses to intransitive ones. Perhaps, if the time depth for such grammaticalization processes in Sumi is shallow, it might even be helpful to look at differences in the distribution of *=ye* in the speech of older vs. younger speakers or between villages which are said to speak more 'conservative' varieties of Sumi vs. other villages.

[13] However, in other tenses, Sumi does use copulas derived from the verb *shi* 'to do'.

[14] One also wonders if the Sumi post-verbal emphatic suffix *-e* ~ *-i*, as seen below, is a reflex of an older copula.

(i) Sumi (Tibeto-Burman; Kutili_bird_short, line 33)
Pa=ye *khaghi=no* *o=pütsa-ni* *pi* *u-va-**e**.*
3SG=*ye* long.time=*no* 2SG=talk.to-pros say go-PRF-EMPH
'She said a long time ago that she was going to see you and left.'

4.3 Origin of *=no* in transitive and intransitive clauses

There is evidence pointing to an instrumental origin for the agentive *=no*, which then was extended to mark constrastive focus. However, positing a Sumi-specific origin for *=no* in transitive and intransitive clauses is somewhat problematic. The instrumental marker in Sumi is *pesü*, derived from a verb meaning 'take', but there is evidence of a rarer instrumental *=no* that is homophonous with the agentive *=no*, as in (39). This rarer *=no* is likely an older instrumental marker that is being replaced by a more recently innovated and morphologically transparent *pesü*.

(39) Sumi (Tibeto-Burman; elicited)

Pa-puh=no	***a-ngu=no***	*a-chequ*	*qhi-ve.*
3SG-father=*no*	NRL-spear=*no*	NRL-porcupine	pierce-VM

'His father impaled the porcupine with the spear.'

Syncretism between the agentive and instrumental (and sometimes the ablative) is widespread across languages (Garrett 1990) and found throughout Tibeto-Burman (DeLancey 1984; LaPolla 1995; Noonan 2009). In the family, one finds numerous morphemes with the form *nV* (where V is a vowel) that have been glossed as 'ergative', 'instrumental' or 'ablative'. Consequently, this makes it difficult to determine whether the agentive function of Sumi *=no* is inherited from an earlier proto-language, or if it is an example of parallel grammaticalization across languages of the family, as per LaPolla (1995).

In terms of directionality, the development of ergative / agentive markers from instrumental markers is well attested, e.g. Garrett (1990).[15] However, Coupe (2011) questions this particular pathway for the Ao languages (Tibeto-Burman), which often display syncretism between the agentive, instrumental and allative. Rather, he posits a proto-Ao **na* which was a "semantically underspecified marker of location" and that it was pragmatic context that determined the "precise" semantic role it marked, such as agent, instrument, goal, source etc.[16]

In addition, in many Tibeto-Burman languages, the agentive / ergative, like Sumi *=no*, does not simply mark agentivity, but has been extended to other functions, including discourse pragmatic functions like contrastiveness and unexpectedness. For example, in Lhasa Tibetan, the ergative marker *-s/-gis* on an argument in certain monovalent clauses can give a contrastive focus reading, i.e. 'this S, not someone else', when accompanied by the "proper intonation" (Tournadre 1991). In Mongsen Ao, the agentive *nə* can be used to indicate willfulness, in addition to intentionality (Coupe 2007: 157). In terms of directionality, it has been demonstrated in some languages, the discourse pragmatic morphemes have developed from the semantic role markers (e.g. Chelliah 2009 for Meithei), following the expected path from more concrete to more abstract meaning (Heine & Kuteva 2002, *inter alia*).

[15] Note that Garrett (1990) does not rule out the possibility that some instrumental markers may reflect older ergatives.

[16] Coupe (2011) also shows that most synchronic ablatives in Ao languages are compounds of the locative + agentive / instrumental, and suggests that the original ablative in these languages was syncretic with the agentive and instrumental, as well as the allative.

However, once again given the presence of numerous potential *nV* cognates across the family, it is difficult to use cross-linguistic data to determine the extent to which the functions of *=no* in Sumi as both an agent marker and a focus marker is something that was inherited from an ancestor language, or is an example of parallel drift within the Tibeto-Burman family. It would perhaps be useful to look beyond the marking of A and S and examine morphological marking in other parts of the grammar.

4.4 Morphological marking of adverbial adjuncts

To further understand the historical development of *=ye* and *=no*, one area for further research is the marking of adverbial adjuncts in Sumi. Like S arguments, these adjuncts show a three-way opposition in morphological marking. In (40)–(42), there are examples of adjuncts marked by *=ye, =no* or by neither enclitic, respectively. These examples are important to consider, since they appear to have similar discourse pragmatic functions, e.g. contrastive focus, to what have been described for S argument markers.

(40) Sumi (Tibeto-Burman; Kutili_bird_short, line 8)

Ishi=ke=hu	*pa=ye*	***ghulo***	***lakhi=ye***,	*"Ei …"*
like.this=NZR=DIST	3SG=*ye*	day	one=*ye*	EXCL

'So one day she thought to herself, "Oh …"'

(41) Sumi (Tibeto-Burman; Kutili_bird_short, line 33)

Pa=ye	***khaghi=no***	*o=pütsa-ni*	*pi*	*u-va-e.*
3SG=*ye*	long.time=*no*	2SG=talk.to-PROS	say	go-PRF-EMPH

'She said a long time ago that she was going to see you and left.'

(42) Sumi (Tibeto-Burman; Origin_of_axone, line 7)

A-tsala	***a-küthü-ni-u***	*a-lu=lo*	*ilesü*	*hu-ghi=no*
NRL-day	NRL-three-ORD-DEF	NRL-field=LOC	return	go.field-come=CONN

'On the third day, they returned to the field'

The question here is: did such marking on adjuncts arise prior to, parallel to, or even after differential A and S marking? For example, one might posit a locative function and origin for *=ye* in (40), but it cannot be assumed that its development followed the same diachronic pathway as *=ye* in *pa=ye*, in the same example. One also cannot easily posit an origin for *=no* in (41).

If the development of differential A and S marking has been driven to some extent by information structure, it is important to understand how pragmatic discourse factors have influenced other aspects of the grammar, including cleft / cleft-like constructions and the marking of relative clauses. Such work would benefit from the use of experimental methods typically used to study the role of prosody in information structure, including questionnaires and other tasks designed to elicit semi-spontaneous speech (e.g. Skopeteas et al. 2006; Hellmuth et al. 2007).

5 Summary and further questions

In this paper, I first looked at the distribution of A and S marking in Sumi, and showed that Sumi has a two-way contrast for A and a three-way contrast for S, but no morphological marking of non-pronominal O. This is markedly different from closely related languages such as Mao and Khezha that show a two-way opposition for O, in addition to a two-way opposition on S and A arguments.

Next, I examined some of the triggers of differential A and S marking in Sumi. It was shown that in transitive clauses, differential A marking is determined largely by the agentivity of the A argument, i.e. the degree of volition, control and purpose of the A argument. In intransitive clauses, it was shown that differential S marking was determined mainly by discourse pragmatic functions such as continuing reference, contrastive focus, and the marking of unexpectedness. Furthermore, some of these functions seem to influence differential A marking even in transitive clauses, although the extent to which this is the case remains a topic for further investigation.

I then considered the origins of such differential markers in Sumi. It was hypothesized that *=ye* in transitive clauses developed from an old locative marker. It was further speculated that *=ye* in intransitive and equative clauses may have developed from an old copula.[17] No clear Sumi-specific origin could be presented for the agentive / focus marker *=no*, given that cognates of *=no* are found throughout the Tibeto-Burman family – these typically function as agentives or ergatives, but also instrumentals and ablatives, and can have discourse pragmatic functions like marking contrastive focus.

There are still many questions to be answered regarding the distribution of *=ye* and *=no* in Sumi, as well as their diachronic origins. Future research will also need to look at the morphological marking of adjuncts and relative clauses. Such work would benefit from corpus studies based on naturalistic data, as well as the use of experimental tasks designed to elicit and identify information structure categories.

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[17] To account for the same form *=ye* used in transitive, intransitive and equative clauses, one might have to further speculate that the old locative marker and equative copula both derive from an older locative copula.

Abbreviations

1	1st person
2	2nd person
3	3rd person
CONJ	conjunction
CONN	connective
CONT	continuative aspect
DEF	definite
DIST	distal
DU	dual
EMPH	emphatic
ERG	ergative
EXCL	exclamation
EXIST	existential verb
HAB	habitual aspect
LOC	locative
MED	medial
NCAP	non-capability
NCPL	non-completive
NEG	negative
NOM	nominative
NPST	non-past tense
NRL	non-relational (unpossessed noun)
NZP	nominalizing prefix
NZR	nominalizing enclitic
ORD	ordinal number
PART	particle
PL	plural
PRF	perfect aspect
PRX	proximal
PST	past tense
PROG	progressive aspect
PROS	prospective aspect
Q	question particle
QUOT	quotative
SG	singular
VM	verbal marker

References

Aissen, Judith. 2003. Differential object marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21(3). 435–483.

Andvik, Erik. 2010. *A grammar of Tshangla*. Leiden: Brill.

Bossong, Georg. 1983. Animacy and markedness in universal grammar. *Glossologia* 2(3). 7–20.

Bossong, Georg. 1985. *Differentielle Objektmarkierung in den neuiranischen Sprachen*. Tübingen: Narr.

Burling, Robbins. 2003. The Tibeto-Burman languages of Northeastern India. In Graham Thurgood & Randy LaPolla (eds.), *The Sino-Tibetan languages*, 169–191. London: Routledge.

Chelliah, Shobhana L. 1997. *A grammar of Meithei*. Berlin: Mouton de Gruyter.

Chelliah, Shobhana L. 2009. Semantic role to new information in Meithei. In Jóhanna Barðdal & Shobhana L. Chelliah (eds.), *The role of semantic, pragmatic, and discourse factors in the development of case*, 377–400. Amsterdam: John Benjamins.

Chelliah, Shobhana L. & Gwendolyn Hyslop. 2012. Introduction to special issue on optional case marking in Tibeto-Burman. *Linguistics of the Tibeto-Burman Area* 34(2). 1–7.

Clark, Eve V. 1978. Locationals: Existential, locative, and possessive constructions. In Joseph H. Greenberg, Charles A. Ferguson & Edith A. Moravcsik (eds.), *Universals of human language*, vol. 4: Syntax, 85–126. Stanford: Stanford University Press.

Coupe, Alexander R. 2007. *A grammar of Mongsen Ao*. Berlin: Mouton de Gruyter.
Coupe, Alexander R. 2011. Pragmatic foundations of transitivity in Ao. *Studies in Language* 35(3). 492–522.
Dalrymple, Mary & Irina Nikolaeva. 2011. *Objects and information structure*. Cambridge: Cambridge University Press.
de Hoop, Helen & Peter de Swart (eds.). 2008. *Differential subject marking*. Dordrecht: Springer.
DeLancey, Scott. 1984. Etymological notes on Tibeto-Burman case particles. *Linguistics of the Tibeto-Burman Area* 8(1). 59–77.
DeLancey, Scott. 2011. Optional 'ergativity' in Tibeto-Burman languages. *Linguistics of the Tibeto-Burman Area* 34(2). 9–20.
Dixon, R. M. W. 1994. *Ergativity*. Cambridge: Cambridge University Press.
Fauconnier, Stefanie. 2011. Differential agent marking and animacy. *Lingua* 121(3). 533–547.
Garrett, Andrew. 1990. The origin of NP split ergativity. *Language* 66(2). 261–296.
Giridhar, Puttushetra Puttuswamy. 1994. *Mao Naga grammar*. Mysore: Central Institute of Indian Languages.
Harris, Alice C. & Lyle Campbell. 1995. *Historical syntax in cross-linguistic perspective*. Cambridge: Cambridge University Press.
Heine, Bernd & Tania Kuteva. 2002. *World lexicon of grammaticalization*. Cambridge: Cambridge University Press.
Hellmuth, Sam, Frank Kügler & Ruth Singer. 2007. Intonational patterns, tonal alignment and focus in Mawng. In *Proceedings of 16th ICPhS satellite workshop Intonational phonology: Understudied or fieldwork languages, Saarbruecken, Germany, August 5th, 2007*. Institute of Phonetics. http://www.linguistics.ucla.edu/people/jun/Workshop2007ICPhS/Papers/Sam-mawng1.0.pdf.
Hopper, Paul J. & Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56(2). 251–299.
Iemmolo, Giorgio & Gerson Klumpp. 2014. Introduction to the special issues "Differential Object Marking: Theoretical and empirical issue". *Linguistics* 52(2). 271–279.
Kapfo, Kedutso. 2005. *The ethnology of the Khezhas and the Kheza grammar*. Mysore: Central Institute of Indian languages.
LaPolla, Randy J. 1995. 'Ergative' marking in Tibeto-Burman. In Yoshio Nishi, James Matisoff & Yasuhiko Nagano (eds.), *New horizons in Tibeto-Burman morphosyntax*, 189–228. Osaka: National Museum of Ethnology.
Lewis, Paul M., Gary F. Simons & Charles D. Fennig. 2013. *Ethnologue: Languages of the world*. 17th edn. Dallas: SIL International. http://www.ethnologue.com.
Malchukov, Andrej L. 2008. Animacy and asymmetries in differential case marking. *Lingua* 118(2). 203–221.
McGregor, William B. 2010. Optional ergative case marking systems in a typological-semiotic perspective. *Lingua* 120(7). 1610–1636.
McGregor, William B. & Jean-Christophe Verstraete. 2010. Optional ergative marking and its implications for linguistic theory. *Lingua* 120(7). 1607–1609.

Noonan, Michael. 2009. Patterns of development, patterns of syncretism of relational morphology in the Bodic languages. In Jóhanna Barðdal & Shobhana L. Chelliah (eds.), *The role of semantic, pragmatic, and discourse factors in the development of case*, 261–282. Amsterdam: John Benjamins.

Payne, Thomas E. 1997. *Describing Morphosyntax: A guide for field linguists*. Cambridge: Cambridge University Press.

Silverstein, Michael. 1976. Hierarchy of features and ergativity. In R. M. W. Dixon (ed.), *Grammatical categories in Australian languages*, 112–171. Atlantic Highlands, NJ: Humanities Press.

Skopeteas, Stavros, Ines Fiedler, Samantha Hellmuth, Anne Schwarz, Ruben Stoel, Gisbert Fanselow, Caroline Féry & Manfred Krifka. 2006. *Questionnaire on information structure (QUIS): Reference manual* (Interdisciplinary Studies on Information Structure 4). Potsdam: Universitätsverlag Potsdam.

Stassen, Leon. 2013. Predicative possession. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. http://wals.info/chapter/117.

Teo, Amos. 2012. Sumi agentive and topic markers: *No* and *ye*. *Linguistics of the Tibeto-Burman Area* 35(1). 49–74.

Tournadre, Nicolas. 1991. The rhetorical use of the Tibetan ergative. *Linguistics of the Tibeto-Burma Area* 14(1). 93–108.

Ueno, Noriko Fujii. 1987. Functions of the theme marker *wa* from synchronic and diachronic perspectives. In John Hinds, Shoichi Iwasaki & Senko K. Maynard (eds.), *Perspectives on topicalization: The case of Japanese WA*, 221–263. Amsterdam: John Benjamins.

Verma, Manindra K. & Karavannur Puthanvettil Mohanan. 1990. *Experiencer subjects in South Asian languages*. Stanford: Stanford Linguistic Association.

Chapter 14

Differential subject marking and its demise in the history of Japanese

Yuko Yanagida
University of Tsukuba

The subject of various types of subordinate or nominalized clauses in Old Japanese (700–800) is marked in one of three different ways: with the postpositional particle *ga*, *no* or zero. This paper argues that the opposition between case marked and unmarked subjects fit into cross-linguistically well attested patterns of differential subject marking (DSM). Following Woolford (2008), it shows that the syntactic and semantic characteristics of these case marking patterns reveal thatOJ displays two kinds of DSM effects which are associated with distinct grammatical levels. This paper also examines three possible scenarios for the loss of DSM, which occurred in Early Middle Japanese (EMJ 800–1200). TheOJ and EMJ data suggest that case systems do not simply shift from one alignment pattern to another, as sometimes assumed (cf. Harris & Campbell 1995: 258). Instead, the morphological features of individual case markers change incrementally over time, ultimately giving rise to global changes in the overall system.

1 Introduction

Modern Japanese (ModJ) displays a straightforward nominative-accusative system. Transitivity does not affect the case marking on the subject (1).

(1) Modern Japanese

a. *Taroo* ***ga*** *sake* ***o*** *non-da* *koto* (transitive)
Taroo NOM sake ACC drink-PST that
'that Taroo drank sake'

b. *sakura* ***ga*** *sai-ta* *koto* (intransitive)
cherry.blossom NOM bloom-PST that
'that Cherry blossoms bloomed'

In ModJ the case markers *ga* and *o* mark the subject and object respectively as grammatical case markers; these particles display no semantic effects.

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In Old Japanese (OJ; 8th century), *ga* is a genitive case marker. *Ga* marks the possessor of noun phrases (2) and the subject of various types of subordinate or nominalized clauses (3). Personal pronouns and human nouns intimate to the speaker as in *seko* 'lover' and *kimi* 'lord' are obligatorily marked by *ga*, while non-human animate and inanimate NPs are predominantly marked by the other genitive *no* or by zero.[1]

(2) Old Japanese (MYS 4303; MYS 4191)

a. *[wa* ***ga*** *sekwo* ***ga*** *yadwo]*
I GEN lover GEN house
'my lover's house'

b. *[**ayu*** ***no*** *si ga pata]*
sweetfish GEN it GEN fin
'sweetfish's fins'

(3) Old Japanese (MYS 2926; MYS 3837; MYS 925)

a. *[wa ga sekwo* ***ga*** *motomu-**ru**] omo ni ika-masi mono wo*
I GEN lord AGT ask-ADN nurse DAT go-AUX thing EXCL
'I would go as the wet nurse that my lord asks for.'

b. *[mizu* ***no*** *tama ni nita-**ru**] mimu*
water GEN pearl DAT resemble-ADN see
'(I) see water resembles a pearl.'

c. *[pisaki* $\emptyset_S$ *opu-**ru**] kiyoki kapara-ni*
catalpa grow-ADN clear riverbank-on
'on the banks of the clear river where catalpas grow'

A number of researchers argue that adnominal verb ending *-ru* (with a different set of endings on adjectives and auxiliaries) as in (3a–3c) had nominalizing functions (see Miyagawa 1989; Yanagida & Whitman 2009; Robbeets 2015).[2] The subject of a nominalized verb is marked in one of three ways. The semantic difference between *ga* and *no* has been treated in the literature (cf. Ohno 1977; Nomura 1993), but bare subjects as in (3c) have not been integrated into this discussion; they are generally set aside as instances of stylistic case drop. Below I show that the alternation between case-marked and unmarked arguments inOJ fits into cross-linguistically attested patterns of differential subject marking (DSM). Under this approach, unmarked arguments cannot be viewed as mere stylistic case drop, but they have both syntactic and semantic significance.

[1] OJ data in this study are taken from the *Man'yōshū* (MYS, compiled in mid-8th century), the earliest written record of OJ, comprising 4516 long (*chōka*) and short (*tanka*) poems. The data is taken from electronic text "*Man'yōshū Search System*" (Yamaguchi University, Japan) as well as the Oxford Corpus of Old Japanese (University of Oxford). For periodization, I follow Frellesvig (2010). Old Japanese (abbreviated 'OJ,' approximately 700–800), Early Middle Japanese ('EMJ' 800–1200), Late Middle Japanese ('LMJ' 1200–1600), Early Modern Japanese ('EModJ' 1600–1800).

[2] Robbeets (2015) suggests that the adnominal form *-ru* has undergone a grammaticalization from deverbal noun suffix to clausal nominalizer to relativizer and, finally, to finite form.

The paper is organized as follows. §2 briefly discusses the general approach to DSM which I adopt: DSM is realized through the interaction of three distinct levels: (i) argument structure, (ii) syntax and (iii) PF (morphological spell-out), as proposed by Woolford (2008). In §3, I argue that *ga* and *no*, – each functioning in opposition to the zero form – are associated with different levels of DSM: *ga* is a morphological realization of active case assigned to an external argument within the *v*P phase. It follows independently motivated PF constraints relatable to Silverstein's (1976) nominal hierarchy. Genitive *no* is assigned to any NPs in the CP phase, where they receive specific interpretations. §4 examines three possible scenarios for the loss of DSM, which occurred in Early Middle Japanese (EMJ; 800–1200). I argue that the development of nominative *ga* results from the reanalysis of psych transitive predicates as intransitive taking a single theme argument. The present study suggests that the loss of DSM cannot be interpreted as a simple, one-step shift in alignment or case marking, as such changes are sometimes presented in work on diachronic syntax (cf. Harris & Campbell 1995). Instead, the morphological features of individual case markers change incrementally over time, only after time giving rise to global changes in the overall system.

2 Differential Subject Marking (DSM)

I assume with Woolford (2008) that DSM effects are associated with three distinct grammatical levels. The first level of DSM is closely linked to θ role assignment (canonically, Agent) to subjects, and to contexts where inherent (or non-structural) Case is assigned to external arguments. This level of DSM is identified as the argument structure (or *v*P phase), which corresponds to the representational level of D-structure in the government-binding theory of Chomsky (1981). The second level of DSM is associated with syntax above *v*P. It behaves in parallel to differential object marking (DOM) in that case alternation depends on the syntactic position of the subject: often, subject or object arguments which move outside *v*P are morphologically marked (by an affix or by triggering agreement) and assigned language particular interpretative properties, such as specificity, definiteness, animacy, etc. (cf. Diesing 1992, Chomsky 2001). The third level of DSM involves post-syntactic PF constraints; this is the level at which abstract case features are spelled out morphologically. According to Woolford (2008), DSM at this level involves markedness, which she defines in relation to Silverstein's (1976) 1976 nominal hierarchy. Cases at the more marked end of the hierarchy are more likely to be morphologically marked.

In both the typological and theoretical literature, active alignment is often classified as a subtype of ergative (cf. Comrie 1973; 1978; Silverstein 1976; Bittner & Hale 1996). Active, however, differs crucially from ergative alignment in that transitivity plays no role. In Hindi, for example, the case marker *-ne* appears on the agent subject of both transitive (4a) and unergative intransitive verbs (4b), while the theme subject of unaccusatives (4c) is unmarked:

(4) Hindi (Indo-Aryan; Mohanan 1994: 71, 107)

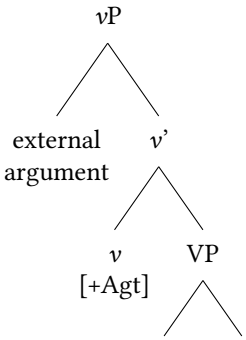
a. *raam-ne* *lakdii* *kaatii*
Ram-ERG wood.NOM cut.PERF.F
'Ram cut wood.'

b. *raam-ne* *nahaayaa*
Ram-ERG bath.PERF
'Ram bathed.'

c. *raam* *(*-ne)* *giraa*
Ram (*-ERG) fall.PERF
'Ram fell.'

According to Woolford (1997; 2008), DSM effects in Hindi are determined at argument structure. The external argument (AGENT) is θ-marked and at the same time inherently case-assigned by *v* in a *v*P projection above VP, as represented in (5).[3]

(5) *DSM at argument structure*



The analysis of ergative (or active) as inherent case assigned to the external argument in the specifier position of *v*P originates with Woolford (1997) and is shared by many researchers such as Legate (2002; 2008); Aldridge (2004; 2008) and Anand & Nevins (2006). I maintain that while ergative is assigned to the external argument in the specifier position of [+transitive] *v*, active is assigned to the external argument in the specifier of [+Agent]*v* (Yanagida & Whitman 2009).

[3]The descriptive generalization that supports the view that ergative is an inherent case comes from the fact that ergative subjects in some instances occur in non-finite clauses while structural nominative subjects cannot (cf. Legate 2002; Aldridge 2004). Derived subjects are never ergative; that is, no language promotes objects to ergative through operations such as raising or passive. A reviewer points out that this fact may have a functional explanation, but the structural consequence remains the same: ergatives are assigned inherent case.

3 Two Types of DSM in OJ

3.1 DSM: *ga vs. zero*

Yanagida (2007) and Yanagida & Whitman (2009) argue that while inOJ main declarative clauses have a nominative-accusative pattern: the subjects of both transitive and intransitive verbs are morphologically unmarked. Various types of embedded or nominalized clauses, exemplified by the adnominal clauses (3) and (6), show active alignment.[4]

(6) Adnominal clauses: Old Japanese (MYS 868; MYS 3443; MYS 925)

a. *[Saywopimye* *no* *kwo* ***ga*** *pire* *Ø* *puri-si]* *yama*
Sayohime GEN child AGT scarf wave-PST.ADN mountain
'the mountain where the child Sayohime waved her scarf'

b. *[wa* ***ga*** *yuku]* *miti* *ni*
1P AGT go.ADN road LOC
'…on the road I travel.'

c. *[pisakwi* *Ø* *opu-ru]* *kiywoki* *kapara*
catalpa grow-ADN clear riverbank
'the banks of the clear river where catalpas grow'

As we see in (6), the subjects of intransitive verbs display two distinct patterns; the agent subjects of the transitive and active intransitive verbs (6a)–(6b) are marked by *ga*, but the patient subject of the inactive intransitive (6c) is morphologically unmarked in the same way as the transitive object in (6a).

OJ behaves in parallel to Hindi in that morphological case appears on agent subjects, but theme subjects of unaccusatives are zero marked. OJ, however, differs crucially from Hindi in that it displays a nominal-based split. Nominal based split ergative languages show an ergative pattern with some NPs, and a nominative pattern with others. This interacts with Silverstein's (1976) nominal hierarchy (7). Silverstein's nominal hierarchy, as is well known, references the feature specification of noun phrases and makes crucial use of featural markedness. Pronouns are specified for [person (+ego, 1P)/(+tu, 2P)], [±number], [±gender], etc. Noun phrases are specified for [±proper] [±human][±animacy] etc.

(7) **The Nominal Hierarchy** (Silverstein 1976)
pronouns > proper nouns > human > animate > inanimate
1st >2nd >3rd person

Nominative in a nominative-accusative system and absolutive in an ergative-absolutive system are unmarked (in terms of MARKEDNESS), typically phonologically zero. The

[4] Main declarative clauses and embedded clauses selected by the cognitive/speech verb such as *ip-* 'say' or *omop-* 'think', appear with the verb in the *shūsikei* 'conclusive form' V-*u*, with a different set of endings on adjectives and auxiliaries. In conclusive clauses, both subject and object are morphologically unmarked. The subject is never marked by *no* or *ga*.

accusative in the one system and ergative in the other are marked. Silverstein observes that "if the noun phrases of a language have accusative case-marking at a certain plus-value of a feature [Fi], and ergative case-marking for [-Fi], then noun phrases are accusative for all features above [Fi] in the hierarchy and ergative for all feature below [Fi] in the hierarchy" (Silverstein 1976: 123). Dixon (1979: 86–87) interprets the hierarchy to "roughly indicate the overall *agency potential* of any given NP", and observes that a number of languages have split case marking exactly on this principle.

Woolford (2008), whom I follow in the discussion below, argues that MARKEDNESS as expressed in Silverstein's nominal hierarchy is a PF constraint (to be exact, a constraint on morphological spell-out). PF is the level where "decisions are made concerning the overt realization of (abstract) features from syntax" (Woolford 2008: 29). On this view, nominals lower on the hierarchy are atypical subjects; thus they are marked ergative at PF, while those higher on the hierarchy are atypical objects, and thus they are marked accusative. Nominals that realize typical subject and object grammatical functions are unmarked morphologically. In other words, ergative case is assigned to all transitive subjects, but in nominal based split ergative languages, the more marked subjects are those that lie lower on the hierarchy. Accusative, on the other hand, is the mirror image of ergative. The more marked categories for the object are those that lie higher in the hierarchy.

A split based on the nominal hierarchy is also typical of active alignment, but crucially, the nominal hierarchy applies to the argument NPs in the opposite direction as first suggested by Dahlstrom (1983). As Mithun (1991) points out, case markers based on *agency* are frequently restricted to nominals referring to human beings. Mithun identifies the semantic basis of the active marking of various non-accusative languages, both synchronically and diachronically. The active system in Batsbi (Tsova-Tush) is limited to first and second persons. Central Pomo has an active system in nominals referring to humans only. The Georgian active system is restricted to human beings. The Yuki system is restricted to animates. From these cross-linguistic observations, the implication follows that active marking is exactly the opposite of the right-to-left application of the hierarchy proposed by Silverstein for ergative languages. The relationship between active marking and the nominal hierarchy is as stated in (8) (cf. Yanagida & Whitman 2009):

(8) **The active marking hierarchy** (AMH)
In active languages, if active marking applies to an NP type α, it applies to every NP type to the left of α on the nominal hierarchy.

Assignment of active case is dependent not just on the thematic role assigned by the verb, but on the place of S on the nominal hierarchy. Klimov (1974; 1977) emphasizes this point, stressing that in active languages both the semantics of the predicate and the subject NP govern the distribution of active case.

InOJ the active marking appears when the S argument has control over the activity and the inactive pattern appears when control is lacking. Consider (9)–(10):

(9) Old Japanese (MYS 3724; MYS 177; MYS 2991)

a. *[kimi* ***ga*** *yuk-u]* *miti* *no* *nagate*
Lord AGT go-ADN road GEN length
'the length of the road my lord travels'

b. *[**wa*** ***ga*** *naku]* *namita*
1P AGT cry.ADN tear
'the tears that I cry'

c. *[**papa*** ***ga*** *kap-u]* *kwo*
mother AGT breed-ADN silkworm
'the silkworms bred by my mother'

(10) Old Japanese (MYS 2713; MYS 3352; MYS 4318)

a. *[**asuka-gapa*** *Ø* *yuku]* *se* *wo* *paya-mi*
Asuka-river go.ADN shallows OBJ fast-CONJ
'since the shallows where the Asuka River flows are fast'

b. *[**pototogisu*** *Ø* *naku]* *kope*
cuckoo (AGT) cry.ADN call
'the call of the cuckoo crying'

c. *[aki* *no* *nwo* *ni* ***tuyu*** *Ø* *opye-ru* *pagwi]* *wo*
fall GEN field LOC dew cover-ADN bush.clover OBJ
ta-wora-zu
hand-break-not
'without breaking off the dew-laden bush clover in the fall meadow'

The verbs *yuku* 'go' and *naku* 'cry' are classified as active, more specifically, unergative verbs, and hence the subject NPs are case assigned by *v*[+Agent] (see (5) above), but whether the subject NP is morphologically realized depends on the semantic features of the nominals. The use of *ga* is obligatory for personal pronouns such as *wa* 'I' and *kimi* 'you/lord'. The human NPs higher on the hierarchy are associated with prototypical agents, which express volition and control, whereas the non-human or inanimate NPs lower on the hierarchy do not correspond to the transitivity prototype. This correlates with the fact that transitive subjects are marked by *ga*, but never marked by zero in embedded nominalized clauses in OJ.

The most crucial syntactic property of transitive clauses inOJ is that *wo*-marked objects necessarily move over the *ga*-marked subject, resulting in OSV word order (11). When objects are unmarked, they have canonical SOV word order (12) (Yanagida 2006; Yanagida & Whitman 2009). *Wo*-marked objects are specific, while zero marked objects are non-specific.[5]

[5]In Yanagida & Whitman (2009) and Frellesvig et al. (2015; 2018) we argue thatOJ displays DOM effects associated with specificity (cf. Aissen 2003).

(11) Old Japanese (MYS 3669; MYS 3960; MYS 3459)
[Object *wo* Subject *ga* V]:

a. ***ware*** ***wo*** *yami* *ni* *ya* ***imo*** ***ga*** *kwopi-tutu* *aru* *ram-u?*
I OBJ dark LOC Q wife AGT long.for-CONT be AUX-ADN
'Would my wife be longing for me in the dark?

b. ***kimi*** ***wo*** ***aga*** *mat-an-akuni*
lord OBJ I.AGT wait-not-NMLZ
'without me waiting for you'

c. ***aga*** ***te*** ***wo*** ***tono*** ***no*** ***wakugwo*** ***ga*** *torite* *nageka-mu*
my hand OBJ lord GEN child AGT take weep-AUX.ADN
'Will my lord's child take my hand and weep again tonight?'

(12) Old Japanese (MYS 868; MYS 3351)
[Subject *ga* Object Ø V]:

a. *Saywopimye* *no* *kwo* *ga* *pire* *Ø* *puri-si* *yama*
Sayohime GEN child AGT scarf wave-PST.ADN mount
'the mountain where the child Sayohime waved a scarf/did scarf-waving'

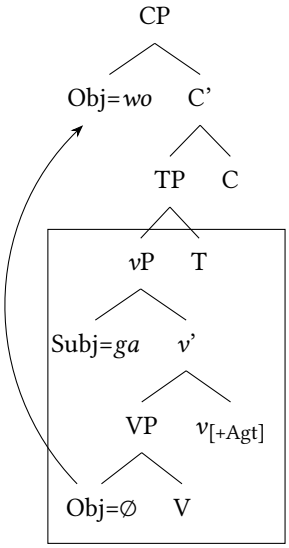
b. *kanasiki* *kwo-ro* *ga* *ninwo* *Ø* *pos-aru* *kamo*
sad child-DIM AGT cloth hang.out-ADN Q
'The sad child has hung out a piece of cloth.'

Given our assumption that ergative/active is assigned by *v* in a *v*P projection (5), the accusative is not licensed inside *v*P; the OSV dominant word order is derived by movement of the object to the left peripheral topic position; namely, the specifier of CP, as represented in (13).

As discussed extensively in Yanagida & Whitman (2009), when the subject is marked by *ga*, the objects that follow the subject are without exception non-branching noun heads, as in *pire* 'scarf' and *ninwo* 'cloth' (12a)–(12b). These noun heads are syntactically incorporated into the verb.[6] Noun incorporation, which is widely observed in ergative languages, is a detransitiving process on a par with antipassives, in that both involve a shift in valency, creating a derived intransitive (see Baker 1988). In other words, the transitive verbs with the object in (12) pattern like unergative intransitives; the subject is marked by *ga*, but the incorporated object is not assigned structural accusative case by the verb.

[6]ModJ does not have noun incorporation in a strict sense. Noun incorporation discussed by Kageyama (1980) such as *kosi o kakeru* 'sit a seat' vs. *kosi-kakeru*, *tema o toru* 'take time' vs. *tema-doru* are not productive. These expressions are possibly analyzable as lexical compounds.

(13)



DSM at Argument Structure

In this section, I have proposed that the alternation between *ga* and zero, as illustrated in Table 1,[7] arises within a smaller domain of a nominalized clause, namely *v*P (13).[8]

Table 1: DSM *ga* vs. zero in OJ

	Active	Inactive
Subject	ga	Ø
Object	Ø	

The external argument is assigned active case by $v_{[+Agt]}$, in the same way as Hindi. OJ, however, displays Woolford's (2008) third level of DSM effects. The actual exponence or marking of the feature [+Agent] is independently determined by language particular PF constraints, relatable to Silverstein's (1976) nominal hierarchy. Subject NPs higher on the nominal hierarchy appear with active predicates, and NPs lower on the hierarchy appear with inactive predicates.[9]

[7] As noted above, active marking is sensitive not only to the semantics of NPs but also to the semantics of predicates. The subjects of transitive verbs and active intransitive verbs are necessarily marked by *ga* (or *no*), but never by zero. (See §3.3 for *no*.)

[8] In §3.3, we discuss the other type of DSM which arises in a higher domain of nominalized clauses; namely CP phase.

[9] Klimov (1977: 95–96) discusses a similar correlation between subject NPs and their predicates in active languages.

3.2 Experiencer Predicates

Ergative (or active) languages often mark the subject of an experiencer verb with ergative (or active) case, treating them like an external argument. This is illustrated by Basque and Hindi, respectively in (14)–(15).

(14) Basque (isolate; Woolford 2008: 24)
Mikel-ek *ni* *haserretu* *nau.*
Michael-ERG 1SG.NOM angry.PERF AUX
'Michael angered me.'

(15) Hindi (Indo-Aryan; Mohanan 1994: 142)
tusaar-ne *vah* *kahaanii* *yaad* *kii*
Tushar-ERG that story.NOM memory.NOM do.PERF
'Tushar remembered that story.'

In Basque, the theme argument is marked by ergative case (14), while in Hindi, the experiencer is marked by ergative case (15).

Kikuta (2012) points out thatOJ *ga* appears on the non-agentive theme subject of experiencer verbs, such as *wasur-* 'forget' *omop-* 'think', *mi-* 'see' etc., and that this raises a problem for Yanagida & Whitman's (2009) hypothesis that *ga* is an active case. However, all of Kikuta's examples of these psych verbs with *ga*-marked theme subjects appear with an unspecified first person experiencer and a form of the auxiliary *yu* (stem *ye-*), which derives middles, passives, and potentials.[10]

(16) Old Japanese (MYS 4407; MYS 3191)
a. ***imo*** ***ga*** *kopisiku* *wasura-**ye**-nu-kamo*
my.lover AGT miss forget-MID-NEG.ADN-Q
'Did I miss my dear and cannot forget her?'
b. *yama* *kopeni-si,* ***kimi*** ***ga*** *omop-**yu**-raku-ni*
mountain cross-PST you/lord AGT think-MID-NMLZ-LOC
'when you came to my mind as I was crossing the mountains'

-Yu is arguably related to the acquisitive light verb *u* (stem *E-*) 'get', which Whitman (2008) proposes as the source of the well-known transitivity alterations in *-e-* inOJ and later stages of the language. *-E* derives both transitives and intransitives, a property of

[10]The productive passive auxiliary *-yu* inOJ appears after the irrealis (*mizenkei*) *a*-stem of the verb, as in (16a). With a small number of verbs such as *omopoyu* in (16b) *-yu* appears after a different stem vowel, probably reflecting an older fossilized pattern. The reviewer pointed out to me that current linguistic scholarship (cf. Whitman 2008; Frellesvig 2010; Robbeets 2015) has mostly agreed with Ohno (1953) that the *a*-stem of consonant verbs is nothing but a surface stem that diachronically reflects re-segmentation of suffixes in initial **a-*. With a polysyllabic vowel final stem followed by a polysyllabic vowel initial suffix, we would expect the first vowel to drop, thus **omop-ayu.* However, the productive medialOJ *-(a)yu* may have been derived from the copula **a-* 'to be' followed by the original causative/medial **-yu* (Robbeets 2015). Adding *omopo-* and *-yu* would give the expected result.

acquisitives such as English auxiliary *get*. If this analysis is correct, experiencer middles such as (16) may have an original transitive source, i.e. 'my dear got me to forget her', 'you got me to think of him'. That is, (16) can be analyzed as a causative middle construction; the theme subject serves as the causer argument of the verb *+yu*. A parallel construction can be seen, for example, in Assamese, cited by Woolford (2008), where the theme subject of an experiencer verb is marked ergative when the light verb *make/do* is added to the verb:

(17) Assamese (Indo-Aryan; Woolford 2008)

a. *gan-tu-e* *xap-tu-k* *khogal* *korile*
song-class-ERG snake-CLASS-DAT anger made/did
'The song angered the snake.'

b. *boroxun-e* *Ram-ok* *xant* *korile*
rain-ERG Ram-DAT calm made/did
'The rain calmed Ram.'

The subject is the external argument of the light verb *korile* 'make/do' and is assigned ergative in Assamese. Facts like these show that languages may differ as to which argument is mapped to the external argument position. The agent subject is invariably an external argument, but in some languages the causer argument of a psych-verb can be an external argument, and thus an agent, marked with ergative.

In OJ, there are also some instances in which *ga* marks clausal complements of psychological adjectives (or experiencer adjectives) that end with *si*, such as *po-si* 'want' or *kana-si* 'sad' (*-si* may be historically related to the verb *si* 'do'), as shown in (18). Importantly, these clausal complements are always marked by *ga* but never marked by *no* or zero.

(18) Old Japanese (MYS 4338; MYS 1007)

a. *[papa* *wo* *panarete* *yuku]* ***ga*** *kana-si* *sa*
mother OBJ part go.ADN AGT sad-do NMLZ
'I am sad about parting from mother.'

b. *[tada* *pitorigo* *ni* *aru]* ***ga*** *kuru-si* *sa*
only one.child DAT be.ADN AGT painful-do NMLZ
'I am pained that I am the only child…'

Although the two types of *ga* – the genitive *ga* and *ga* marking the clausal complement of psych adjectives – have been widely recognized, the historical relation between the two has not been examined. In (18a)–(18b) the theme argument of psych verbs appears in external argument position marked by *ga*, whereas an unspecified (or implicit) experiencer is an internal argument identified as first person singular (i.e. the speaker). (16a)–(16b) are apparently related to (18a)–(18b) in that they originate from a psych-transitive predicate with an unspecified first person experiencer object. Thus, (18a) literally means that 'parting from my mother made me sad', as represented in (19).

(19) [… V.ADN] **ga** [VP pro [+1SG] [AP…] *si* 'do']

The clausal subject in (18), as in the case of (16), serves as the causer, thus agentive, of the matrix predicate *po-si* 'do-wanting', *kana-si* 'doing sad'. Below in §4, I will argue that after OJ, this psych transitive construction was reanalyzed as intransitive, taking a single theme argument; this was the historical source of nominative *ga*.

3.3 DSM in syntax

In §3.1, I show that DSM effects identified at the argument structure within *v*P constitute semantically motivated case alternations between *ga* and zero. In this section, we discuss the other type of DSM associated with the alternation between *no* and zero. The latter type of DSM occurs when the subject NP is located in the position lower on the nominal hierarchy. A primary question to be addressed is: What is the difference between *no*-marked NP and z*ero*-marked NPs, given that both appear on the nominals whose semantic features are lower in the hierarchy? Examples (20a)–(20b) indicate thatOJ has DSM associated with a specific/non-specific distinction on a par with DSM in Turkish and other languages with genitive subjects in nominalized clauses:

(20) Old Japanese (MYS 4066)

a. *[u* *no* ***pana*** ***no*** *saku]* *tukwi* *tati-nu*
deutzia GEN flower GEN bloom month pass-PERF
'it was the month when the deutzia flower blooms'

b. *[okitu* *mo* *no* ***pana*** *Ø* *saki-tara]-ba* *ware* *ni* *tuge* *koso*
offing seaweed GEN flower bloom-PERF-if I DAT tell FOC
'If seaweed flowers were to bloom in the offing, tell me. (But they would not bloom.)'

In (20a) the author composes the song at the sight of the deutzia flower in the garden where the banquet was held, thus referring to a specific entity. In (20b), on the other hand, the flower in the subjunctive conditional *ba* 'if'-clause is unambiguously non-specific, since it is not at the sight of the author, nor previously mentioned in the preceding context.

In Turkish, as is well known, subjects of subordinate clauses marked by genitive are always specific, but when the subordinate subject is nominative, that is, zero-marked, its referent is interpreted as non-specific. Woolford (2008) argues that DSM in Turkish is determined at the level of syntax. Consider (21a)–(21c).

(21) Turkish (Turkic; Kornfilt 2003)

a. *[**(bir)ari-nin*** *bugün* *cocug-u* *sok-tug-un]-u* *duy-du-m*
bee-GEN today child-ACC sting-F.NOM-3SG-ACC hear-PST-1SG
'I heard that the bee/a bee (+specific) stung the child today.'

b. *[cocug-u* *bugün* ***(bir)ari*** *sok-tug-un]-u* *duy-du-m*
child-ACC today bee sting-F.NOM-3SG-ACC hear-PST-1SG
'I heard that today bees/a bee [-specific] stung the child.'

c. **[(**bir**)**ari*** *Ø* ***cocug-u*** *bugün* *sok-tug-un]-u* *duy-du-m*
bee child-ACC today sting-F.NOM-3SG-ACC hear-PST-1SG
'I heard that today bees/a bee [-specific] stung the child.'

As originally observed by Kornfilt (2003; 2008), genitive subjects move outside *v*P, thus, appearing before the object (21a). Unmarked nominative subjects in subordination must appear adjacent to the verb, resulting in OSV order (21b)–(21c).OJ *no*-marked vs. zero marked subjects behave exactly like Turkish, as evidenced by (22a)–(22b).

(22) Old Japanese (MYS 3689; MYS 2665)

a. *ipe* ***pito*** ***no*** *idura-to* *ware* ***wo*** *topa-ba* *ikani* *ipa-mu*
home someone GEN where-that I OBJ ask-if how say-AUX
'How should (I) say if someone in your family asks me where (you) are?

b. *waga* *kosi* ***wo*** ***pito*** *Ø* *mike-mu* *kamo*
IP.AGT coming OBJ someone see-FUT.ADN Q
'Would someone see me coming?'

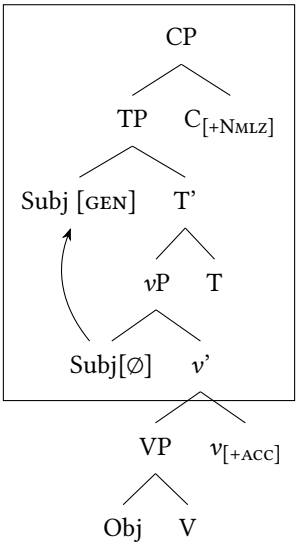
In (22a), the *no*-marked subject *pito* 'person' has a SPECIFIC reading; it picks out someone in the family member.[11] Example (22b), in contrast, has a NON-SPECIFIC reading: the existence of a set of individuals is completely undefined in previous discourse. Subjects marked by *no*, unlike *ga*-marked subjects, can appear preceding the *wo*-marked object. Unmarked subjects, in contrast, appear strictly adjacent to the verb. Yanagida (2007) provides quantitative data for zero-marked subjects in the *Man'yōshū*. For a total of 667 zero-marked subjects found in *Man'yōshū*, 580 occur immediately adjacent to the verb and 9 instances of non-conclusive transitive clauses have the pattern [Object wo Subject Ø V], given in (22b). These examples, however, without exception, appear in main clauses (Yanagida 2007: 183). Transitive subjects are never marked zero in embedded clauses.[12]

The word order facts indicate thatOJ nominalized clauses employ DSM in parallel to DOM associated with a specific/non-specific distinction. They are configurationally determined in the syntax. While the zero-marked subject of transitive verbs remains in the external argument position, namely the specifier of *v*P, the subject marked by genitive moves to the specifier of TP. This is represented in (23).

[11] I assume that SPECIFIC entities presuppose the existence of a set of individuals; the set of individuals is discourse-linked and refers to a previously mentioned set (cf. Enç 1991).

[12] As noted above,OJ displays main/embedded split case systems. In main clauses, the subjectYanagida2007Jdaigos of both transitive and intransitive verbs are marked by zero.

(23)



DSM in Syntax

The genitive subject construction (23) has a nominative-accusative pattern; the genitive subject is case-licensed by $C_{[+NMLZ]}$, and the accusative object is case-licensed by *v*.

4 The historical development of nominative *ga*

It is well known that *ga* in both possessor and subject/agent marking functions drastically decreased after OJ. The ratios between *ga* and *no* in the *Man'yōshū* (OJ; 8th century) and in *Genji monogatari* (EMJ; 11th century) taken from the Corpus of Historical Japanese (CHJ) produced by the National Institute of Japanese Language and Linguistics (NINJAL) are given below:[13]

Table 2: The ratios between *ga* and *no* in the *Man'yōshū* (Koji 1988)

	=ga	*=no*
Subject	372 (48%)	411 (52%)
Possessor	606 (10%)	5711 (90%)
Clausal subject	19 (100%)	0

These two tables indicate that *ga* in both subject and possessor functions was significantly reduced in *Genji monogatari*, written in the EMJ period. In *Genji*, 39 out of

[13]In Table 3, the quantitative data taken from the corpus is limited to the sequence of Noun+*ga/no* Verb (Subject), Noun+*ga/no*+Noun (Possessor), and Adnominal Clause+*ga/no* +Verb respectively, due to the design of the corpus. It is therefore not precisely the total occurrence of *ga/no* in the subject/possessor/clausal patterns.

Table 3: The ratios between *ga* and *no* in (*Genji*, ca. 1010, CHJ)

	=ga	*=no*
Subject	57 (4%)	1358 (96%)
Possessor	78 (0.7%)	11302 (99.3%)
Clausal subject	261 (98%)	4 (2%)

57 tokens of *ga*-marked subjects are personal pronouns, of which 24 are first person *waga*, which was already the lexicalized first person pronominal form for both possessor and subject. In contrast, instances of *ga* marking clausal subjects which select psych-predicates, as illustrated in (18), drastically increases after OJ.[14]

A further significant change in EMJ is that the OSV dominant order associated with *ga* was completely lost. This change directly results from the fact that transitive subjects came to be either zero-marked or marked by genitive *no* as in (24), resulting in [S (*no*) O *wo* V] basic word order, as represented in (23):

(24) Early Middle Japanese (Papakigi; Genji)

[ki	*no*	*miti*	*no*	*takumi]*	***no***	*yorodu*	*no*	*mono*	***wo***	*tukuri*
wood	GEN	tool	GEN	craftsman	GEN	various	GEN	thing	OBJ	make
idasu	*mo*									
out	EXCL									

'The craftsman invents various things.'

These observations suggest that EMJ is characterized as displaying the transition from an active system to an accusative system. In the following (§4.1–§4.3), I will discuss three possible scenarios for this shift in alignment in the history of Japanese.

4.1 Scenario 1: Antipassive > Accusative

A number of researchers propose that alignment change from ergative/active to accusative arises as a result of reanalysis of antipassives (cf. Harris & Campbell 1995; Bittner & Hale 1996; Aldridge 2012).[15] The transition from ergative to accusative begins when the oblique object in antipassives is reanalyzed as accusative. This explanation for alignment change may be applicable to ergative languages that have antipassive constructions. Not all languages do, of course: Polinsky (2013) and Comrie (2013) identify 14 ergative and

[14] The CHJ corpus is not designed to make distinctions between clause types. However, it is well known among traditional Japanese grammarians that the subject marker *ga/no* is restricted to what Yanagida & Whitman (2009) identified as nominalized clauses inOJ and EMJ. While *no* remains genitive marker throughout the history, *ga* started to mark the subject in main clauses in Late Middle Japanese (see Table 5 cited from Yamada 2000). By this period, the adnominal endings have been reanalyzed as matrix clause endings.

[15] In antipassives, the external argument has absolutive status rather than ergative, while the notional object is either dropped or marked as an oblique.

2 active languages with no antipassives.OJ had no antipassives. Thus the reanalysis of antipassives is not a possible diachronic pathway from non-accusative to accusative for Japanese.

4.2 Scenario 2: Active > Nominative

Harris & Campbell (1995: 258) describe as a possible but hypothetical change a shift from active to accusative alignment caused by reanalysis of an active case marker as nominative.[16] King (1988) suggests a somewhat similar hypothesis on the basis of the view that the Korean nominative marker *-i* was originally an ergative marker that underwent a shift to nominative, as shown in Table 4. King hypothesizes that *-i* originates as an ergative case and the nominative function of *-i* arises as a result of ergative *-i* coming to mark intransitive subjects.

Table 4: Alignment change in Korean (King 1988)

	Direct Object	Subject Intransitive	Subject Transitive
Before change: Ergative	Ø	Ø	*-i*
After change: Accusative	Ø/*-l*	Ø/*-i*	Ø/*-i*

Whitman & Yanigada (2015) show that King's hypothesis is not supported by the Korean data. In the case of Japanese, ModJ nominative *ga* does not directly descend fromOJ genitive *ga* used to mark active subjects. *Ga* became highly infrequent as an NP subject marker in EMJ around the 9–10th centuries.

Yamada (2000) examines the reappearance of *ga* as nominative in the text known as the *Amakusa Heike*, which was published in the late 16th century.[17] Table 5, cited from Yamada (2000), shows that while subject marker *ga* was restricted to embedded clauses inOJ and EMJ, it started to reappear in main clauses in Late Middle Japanese (LMJ).

Table 5: *Ga* in main clauses (Amakusa Heike 1592, Yamada 2000).

	Genitive	transitive	unergative	adjective	unaccusative	total
ga	0 (0%)	2 (2%)	13 (16%)	15 (18%)	54 (64%)	84 (100%)

According to Yamada, nominative *ga* in LMJ starts out as a marker for the subject of intransitive verbs, in particular, unaccusative verbs, and rarely marks the subject of

[16] Klimov (1974; 1977) also suggests that the development from active into nominative is a widespread development.

[17] The *Amakusa Heike* is a romanized version of the *Heike Monogatari*. It was composed as a textbook to teach Japanese to foreign missionaries.

transitive verbs. *Ga* appears on transitive subjects after the mid 17th century. Table 6 presents the ratios between *ga* and *no* in the *Toraakira-bon Kyogen* published in 1642.

Table 6: the ratios between *ga* and *no* (*Toraakira bon*, 1642, CHJ)

	=ga	*=no*
Subject	1622 (76%)	503 (24%)
Possessor	353 (7%)	5267 (93%)
clausal subject	20 (100%)	0 (0%)

The data in the *Toraakira bon* reveal that transitive clauses came to appear in the canonical [S *ga* O *o* V] pattern in EModJ (1600–1800), as shown by the data in (25):

(25) Early Modern Japanese (*Toraakira bon*, 1642)

ano	*mono*	***ga***	*orusu*	***o***	*itase-ba*
that	person	NOM	watch.house	ACC	do-if

'if that person watches over the house…'

These facts raise a basic question concerning the assumption that case systems shift from active to accusative: IfOJ active *ga* is the ancestor of ModJ nominative *ga*, why did *ga* decrease drastically in frequency in EMJ only to reappear in unaccusative rather than transitive verbs.

To account for these facts, I propose a third scenario; that is, a global shift from active to nominative never took place in Japanese. Instead, change in the semantic features of individual case markers, *ga* and *wo*, reorganized the overall grammatical structure of the language.

4.3 Scenario 3: Impersonal psych transitive > Intransitive

Japanese is a so-called pro-drop language throughout its history; sentences often contain no overt subject. This means that learners ofOJ were presented with scant evidence that the object moved to the left of the subject, since direct evidence for OSV would be available only in sentences with overt subjects. As a result, object movement was eventually lost. The loss of object movement then results in a reanalysis of *wo* as a pure structural accusative case.[18] The reanalysis of *wo* subsequently led to another change. That is, *ga*-marked subjects were unable to remain in the specifier of *v*P. Yanigada (forthcoming) proposes that this is attributable to the subject *in-situ* generalization (SSG), originally proposed by Alexiadou & Anagnostopoulou (2001). The SSG is analyzed as the general condition on structural case, which states that if two DP arguments are merged in the

[18]Frellesvig et al. (2018 [this volume]) argue that DOM is no longer operative in EMJ. In EMJ, *wo* was established as the structural accusative case. Its range of use was expanded to mark direct objects even with non-specific reading. Because of this change, the division between *wo* marked objects and unmarked objects became semantically opaque.

*v*P domain, at least one of them must externalize. Alexiadou & Anagnostopoulou (2001) argue that the SSG applies synchronically in a variety of constructions across languages. I suggest that the SSG provides a diachronic explanation for the loss of *ga* marked subjects of transitive verbs. That is, once *wo* was reanalyzed as structural accusative and the object remained inside *v*P domain, the subject was no longer able to stay in the specifier of *v*P; it had to move outside *v*P. This results in the dramatic increase in tokens of the [DP *no* DP *wo* V] construction (23) in EMJ.

Recall that (26) is the impersonal psych transitive construction that involves an implicit first person experiencer object.

(26) Old Japanese (MYS 4338)

[papa	*wo*	*panarete*	*yuku]*	***ga***	*kana-si*	*sa*
mother	OBJ	part	go.ADN	AGT	sad-do	NMLZ

'I am sad about parting from Mother.'

As shown in Table 3 above, examples like (26) significantly increased in frequency after OJ. Some examples are given in (27) cited by Ohno (1977: 142). Ohno (1977; 1987) observes that in EMJ, adnominal clauses marked by *ga* are used predominantly with psych predicates with a first person experiencer (27a), as is the case in OJ, but that they began to appear with non-psych intransitive verbs (27b).

(27) Early Middle Japanese (Kocho/Genji, Usugumo/Genji)

a.

[kokorobape	*wo*	*mi-ru]*	***ga***	*wokasi-u*	*mo*
kindness	ACC	see-ADN	AGT	thankful-CONCL	EXCL

'Seeing (someone's) kindness makes (me) thankful.'

b.

[kumo	*no*	*usuku*	*watare-ru]*	***ga***	*nibi*	*iro*	*na-ru*
cloud	GEN	shallow.pass	away-ADN	AGT	red	color	become-ADN

wo
EXCL

'the clouds passing thinly away become red'

In (27b) the adnominal clause marked by *ga* is the subject of a non-psych intransitive verb, and it involves no implicit first person experiencer. A further change in EMJ is that while this psych predicate construction was used only in nominalized clauses in OJ, it came to appear in non-nominalized main clauses as in (27a). Based on MJ (800–1600) data, I hypothesize that ModJ nominative *ga* is descended from *ga* marking the clausal complements of psychological predicates. Following Ohno's (1977; 1987) observations and data collected from the corpus, nominative *ga* developed as a result of a reanalysis of impersonal psych-transitive as unaccusative intransitive where the *ga* marked argument came to be the sole argument of the predicate, that is, nominative. *Ga* reappeared in LMJ as a nominative postposition, marking the theme argument of intransitives, and it was extended to mark the subjects of transitive verbs in EModJ. This scenario gives a straightforward explanation for why nominative *ga* started to mark the subject of intransitive verbs, as observed by Yamada (2000).

5 Summary

I have argued that the semantic opposition between case marked vs. zero marked subjects inOJ nominalized clauses show two types of DSM effects which fit with well-established cross-linguistic patterns. I have also argued that the reanalysis of *wo* as structural accusative is a direct cause of the loss of active *ga* marking the subject of transitive verbs. The quantitative data in EMJ and LMJ suggest that nominative *ga* emerges as a result of a reanalysis of psych-transitive predicates as intransitive where the *ga* marked argument is the sole argument of the predicate. It has been widely believed that case systems change from non-accusative to accusative or accusative to non-accusative alignment. TheOJ data support the view that case systems do not merely shift from one alignment to another due to a single change. Instead, a cascade of changes in the morphological/semantic features of individual case markers, as exemplified byOJ and EMJ *ga* and *wo*, occur over time, eventually leading to overall change of case marking systems in a given language.

Digitized texts

- The Japanese Historical Corpus, the National Institute of Japanese Language and Linguistics, https://maro.ninjal.ac.jp/
- The Oxford Corpus of Old Japanese, http://vsarpj.orinst.ox.ac.uk/corpus/
- *Man'yôshû* Kensaku, Yamaguchi University http://infux03.inf.edu.yamaguchi-u.ac.jp/~manyou/ver2_2/manyou.php

Abbreviations

ABS	absolutive
ACC	accusative
ADN	adnominal
AGT	agent
ASP	aspect
AUX	auxiliary verb
CONC	concessive
CONCL	conclusive
CONJ	conjunctive
CONT	continuative
DAT	dative
DIM	diminutive
ERG	ergative
EXCL	exclamative
F	female
FOC	focus marker
FUT	future
GEN	genitive
HON	honorific
IMPERF	imperfective
LOC	locative
MID	middle
MOD	modal
NEG	negative
NMLZ	nominalizer
NOM	nominative
NONFUT	non-future
OBJ	object marker
PST	past
PL	plural
PRT	second position particle (an evidential)
PERF	perfective
1P	first person
2P	second person
Q	question particle

References

Aissen, Judith. 2003. Differential object marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21(3). 435–483.

Aldridge, Edith. 2004. *Ergativity and word order in Austronesian languages*. Ithaca, NY: University of Ithaca dissertation.

Aldridge, Edith. 2008. Generative approaches to ergativity. *Language and Linguistics Compass* 2(5). 966–995.

Aldridge, Edith. 2012. Antipassive in Austronesian alignment change. In Dianne Jonas, John B. Whitman & Andrew Garrett (eds.), *Grammatical change: Origins, nature, outcomes*, 331–345. Oxford: Oxford University Press.

Alexiadou, Artemis & Elena Anagnostopoulou. 2001. The subject-in-situ generalization and the role of case in driving computations. *Linguistic Inquiry* 32(2). 193–231.

Anand, Pranav & Andrew Nevins. 2006. The locus of ergative case assignment: Evidence from scope. In Alana Johns, Diane Massam & Juvénal Ndayiragije (eds.), *Ergativity: Emerging issues*, 3–25. Dordrecht: Springer.

Baker, Mark C. 1988. *Incorporation: A theory of grammatical function changing*. Chicago: University of Chicago Press.

Bittner, Maria & Kenneth L. Hale. 1996. The structural determination of case and agreement. *Linguistic Inquiry* 27(1). 1–68.

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

Chomsky, Noam. 2001. Minimalist inquiries: The framework. In Roger Martin, David Michaels & Juan Uriagereka (eds.), *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, 89–156. Cambridge, MA: MIT Press.

Comrie, Bernard. 1973. The ergative: Variations on a theme. *Lingua* 32. 239–253.

Comrie, Bernard. 1978. Ergativity. In Winfred Philipp Lehmann (ed.), *Syntactic typology: Studies in the phenomenology of language*, 329–394. Austin: University of Texas Press.

Comrie, Bernard. 2013. Alignment of case marking of full noun phrases. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. http : / / wals . info / chapter/98.

Dahlstrom, Amy L. 1983. Agent-patient languages and split case marking systems. In *Proceedings of the 9th Annual meeting of the Berkeley Linguistics Society*, 37–46.

Diesing, Molly. 1992. *Indefinites*. Cambridge, MA: MIT Press.

Dixon, R. M. W. 1979. Ergativity. *Language* 55(1). 59–138.

Enç, Mürvet. 1991. The semantics of specificity. *Linguistic Inquiry* 22(1). 1–25.

Frellesvig, Bjarke. 2010. *A history of the Japanese language*. Cambridge: Cambridge University Press.

Frellesvig, Bjarke, Stephen W. Horn & Yuko Yanagida. 2015. Differential object marking in Old Japanese: A corpus based study. In Dag T. T. Haug (ed.), *Historical linguistics 2013: Selected papers from the 21st International Conference on Historical Linguistics, Oslo, 5–9 August 2013*, 195–212. Amsterdam: John Benjamins.

Frellesvig, Bjarke, Stephen Horn & Yuko Yanagida. 2018. A diachronic perspective on differential object marking in pre-modern Japanese: Old Japanese and Early Middle Japanese. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *Diachrony of differential argument marking*, 183–207. Berlin: Language Science Press. DOI:10.5281/zenodo.1228255

Harris, Alice C. & Lyle Campbell. 1995. *Historical syntax in cross-linguistic perspective*. Cambridge: Cambridge University Press.

Kageyama, Taro. 1980. *Goi no kozo*. Tokyo: Shohakusha.

Kikuta, Ciharu. 2012. Jodai nihongo no ga-kaku nituite [On the case marker *ga* in Old Japanese]. *Dosisha Daigaku Jinbun Gakkai (The Literary Association)* 89. 89–123.

King, Ross. 1988. Towards a history of transitivity in Korean. Paper given at the 24th Meeting of the Chicago Linguistic Society.

Klimov, Georgij A. 1974. On the character of languages of active typology. *Linguistics* 131. 11–25.

Klimov, Georgij A. 1977. *Tipologija jazykov aktivnogo stroja [Typology of languages of the active type]*. Moscow: Nauka.

Koji, Kazuteru. 1988. *Man'yôshû joshi no kenkyu*. Tokyo: Kasama Shoin.

Kornfilt, Jaklin. 2003. Subject case in Turkish nominalized clauses. In Uwe Junghanns & Luka Szucsich (eds.), *Syntactic structures and morphological information*, 130–214. Berlin: Mouton de Gruyter.

Kornfilt, Jaklin. 2008. DOM and two types of DSM in Turkish. In Helen de Hoop & Peter de Swart (eds.), *Differential subject marking*, 79–112. Kluwer: Springer.

Legate, Julie Anne. 2002. *Warlpiri: Theoretical implications*. Cambridge, MA: Massachusetts Institute of Technology dissertation.

Legate, Julie Anne. 2008. Morphological and abstract case. *Linguistic Inquiry* 39(1). 55–101.

Mithun, Marianne. 1991. Active/agentive case marking and its motivations. *Language* 67(3). 510–546.

Miyagawa, Shigeru. 1989. *Structure and case marking in Japanese*. San Diego: Academic Press.

Mohanan, Tara. 1994. *Argument structure in Hindi*. Stanford: Center for the Study of Language & Information.

Nomura, Takashi. 1993. Jôdaigo no no to ga ni tsuite [On the particles *no* and *ga* in Old Japanese]. *Kokugo Kokubun* 62. 1–17.

Ohno, Susumu. 1953. Nihongo no dôshi no katsuyôkei no kigen ni tsuite [On the origins of Japanese verb inflection]. *Kokugo to kokubungaku [Japanese Language and Literature]* 350. 47–56.

Ohno, Susumu. 1977. Shukaku joshi ga no seiritsu [The development of the nominative case particle *ga*]. *Bungaku* 45. 102–117.

Ohno, Susumu. 1987. *Bunpo to goi [The grammar and the lexicon]*. Tokyo: Iwanai.

Polinsky, Maria. 2013. Antipassive constructions. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. http://wals.info/chapter/108.

Robbeets, Martine. 2015. *Diachrony of verb morphology: Japanese and the Transeurasian language*. Berlin: Mouton de Gruyter.
Silverstein, Michael. 1976. Hierarchy of features and ergativity. In R. M. W. Dixon (ed.), *Grammatical categories in Australian languages*, 112–171. Atlantic Highlands, NJ: Humanities Press.
Whitman, John. 2008. The source of the bigrade conjugation and stem shape in pre-Old Japanese. In Bjarke Frellesvig & John Whitman (eds.), *Proto-Japanese. Issues and prospects*, 159–174. Amsterdam: John Benjamins.
Whitman, John & Yuko Yanigada. 2015. A Korean grammatical borrowing in Early Middle Japanese kunten texts and its relation to the syntactic alignment of earlier Korean and Japanese. *Japanese/Korean Linguistics* 21. 121–135.
Woolford, Ellen. 1997. Four-way case systems: Ergative, nominative, objective and accusative. *Natural Language and Linguistic Theory* 15(1). 181–227.
Woolford, Ellen. 2008. Differential Subject Marking at argument structure, syntax and PF. In Helen de Hoop & Peter de Swart (eds.), *Differential Subject Marking*, 17–40. Dordrecht: Springer.
Yamada, Masahiro. 2000. Shugo hyôji ga no seiryoku kakudai no yôso [The expansion of the use of the subject denotor *ga*: A comparison between the original text of the Tale of Heike and Amakusaban Heike]. *Kokugogaku* 51(1). 1–14.
Yanagida, Yuko. 2006. Word order and clause structure in Early Old Japanese. *Journal of East Asian Linguistics* 15(1). 37–68.
Yanagida, Yuko. 2007. Jôdaigo no nôkakusei ni tsuite [On ergativity in Old Japanese]. In Nobuko Hasegawa (ed.), *Nihongo no shubun genshô [Main clause phenomena in Japanese]*, 147–188. Tokyo: Hituzi Shobo.
Yanagida, Yuko & John Whitman. 2009. Word order and alignment in Old Japanese. *Journal of East Asian Linguistics* 18(2). 101–144.
Yanigada, Yuko. Forthcoming. Differential argument marking (DAM) and object movement: A typological perspective. In Nishiyama Kunio, Hideki Kishimoto & Edith Aldridge (eds.), *Topics in theoretical Asian linguistics*. Amsterdam: John Benjamins.

Chapter 15

The partitive A: On uses of the Finnish partitive subject in transitive clauses

Tuomas Huumo
University of Turku, University of Tartu

Finnish existential clauses are known for the case marking of their S arguments, which alternates between the nominative and the partitive. Existential S arguments introduce a discourse-new referent, and, if headed by a mass noun or a plural form, are marked with the partitive case that indicates non-exhaustive quantification (as in 'There is some coffee in the cup'). In the literature it has often been observed that the partitive is occasionally used even in transitive clauses to mark the A argument. In this work I analyze a hand-picked set of examples to explore this *partitive A*. I argue that the partitive A phrase often has an animate referent; that it is most felicitous in low-transitivity expressions where the O argument is likewise in the partitive (to indicate non-culminating aspect); that a partitive A phrase typically follows the verb, is in the plural and is typically modified by a quantifier ('many', 'a lot of'). I then argue that the pervasiveness of quantifying expressions in partitive A phrases reflects a structural analogy with (pseudo)partitive constructions where a nominative head is followed by a partitive modifier (e.g. 'a group of students'). Such analogies may be relevant in permitting the A function to be fulfilled by many kinds of quantifier + partitive NPs.

1 Introduction

The Finnish argument marking system is known for its extensive case alternation that concerns the marking of S (single arguments of intransitive predications) and O (object) arguments, as well as predicate adjectives. In this system, the partitive case plays a central role: it alternates with the accusative in the marking of O (see e.g. Heinämäki 1984; 1994; Kiparsky 1998; Huumo 2010; 2013, and §3 of this paper), and with the nominative in the marking of both S (in existential clauses; see e.g. Huumo 2003) and predicate adjectives (see Huumo 2009). By contrast, A arguments are, in principle, always in the nominative in Standard Finnish. However, since the late 19th century, scholars have pointed out that the partitive is occasionally used even in the marking of A arguments, in spite of the fact that until the 1990's, the Finnish language planning authorities condemned such uses as ungrammatical.

Tuomas Huumo. The partitive A: On uses of the Finnish partitive subject in transitive clauses. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *Diachrony of differential argument marking*, 423–453. Berlin: Language Science Press. DOI:10.5281/zenodo.1228271

In this paper, I study such *partitive A* arguments with data manually gathered from the Internet. I will argue that the partitive A combines features of canonical (nominative) A arguments (animate and agentive referents are typical) and existential S arguments (the referent is typically discourse-new and indicates non-exhaustive quantity). I will also argue that the most typical context for the partitive A are low-transitivity expressions. This is the main reason why not only A but also O is in the partitive case in most instances: when marking the O (of an affirmative clause) the partitive indicates a non-culminating event or a quantitatively non-exhaustive reference. If the accusative O is used with a partitive A, then the reading of A is distributive: each of its referents participates in the event individually.

In the marking of S arguments, the Finnish partitive subject[1] is best known for its use in existential clauses, where the partitive case marks subject NPs headed by mass nouns or plurals. The referent of the existential partitive S is typically discourse-new and consists of a non-exhaustive quantity of a substance (mass nouns) or of a multiplicity (plurals); a characteristic feature of the partitive is non-exhaustive reference (an indefinite, open or unbounded quantity in different terminologies), whereas its counterparts, the nominative and the accusative, typically indicate exhaustive reference (definite, closed, or bounded quantity). Consider (1) and (2), which are canonical existential clauses with a clause-final S; for the uses of the partitive subject in old literary Finnish, see De Smit (2016). In existential clauses, only S arguments headed by a singular count noun take the nominative case (3).

(1) *Kupi-ssa* *on* *kahvi-a.*
cup-INE be.PRS.3SG coffee-PAR
'There is coffee in the cup.'

(2) *Leikkikentä-llä* *juokse-e* *laps-i-a.*
playground-ADE run-PRS.3SG child-PL-PAR
'There are children running in the playground.'

(3) *Pöydä-llä* *on* *kirja.*
table-ADE be.PRS.3SG book.NOM
'There is a book on the table.'

As can be seen from (2), the partitive S does not trigger verb agreement: the verb is in a 3rd person singular form in spite of the plural partitive. The typical position of the existential S arguments is after the verb, but since the Finnish word order is discourse-pragmatically conditioned (for details, see Vilkuna 1989: 35–62), existential S arguments may also have a clause-initial position. On the other hand, indefinite or focused non-existential S arguments are likewise often placed towards the end of the clause (see

[1]The subjecthood of this element is under dispute; see Huumo & Helasvuo (2015) and the literature mentioned there. However, the term *subject* is conventionally used for it, and I follow this practice for convenience.

Vilkuna 1989: 187–191). This means that word order is not a reliable criterion in distinguishing existential and intransitive (4) constructions from each other (cf. also Huumo & Lindström 2014, for a comparison of Finnish and Estonian).

(4) *Kirja* *on* *pöydä-llä.*
book.NOM be.PRS.3SG table-ADE
'The book is on the table.'

In Finnish linguistics, a lively debate on existential clauses and the functions of the partitive S has been going on since the 1950's. It has been pointed out that though actual usage concentrates around certain semantically pale existential verbs (e.g. *olla* 'be' and *tulla* 'come'), the range of (intransitive) verbs available for the existential construction is actually wide and includes even highly agentive verbs such as *juosta* 'run', *opiskella* 'study', *tapella* 'fight' and *tanssia* 'dance'. In earlier works, scholars attempted to build exhaustive lists of "existential verbs", but in the 1970's this attempt was more or less given up. More recent analyses (e.g. Huumo 2003, Huumo & Helasvuo 2015), with Schlachter (1958) and Siro (1974) as their early predecessors, have emphasized the construction-level meaning of the existential clause, arguing that the construction backgrounds the activity indicated by the verb and foregrounds the locational relationship that prevails between the typically clause-initial locative adverbial and the existential S, the referent of which is introduced as a discourse-new entity within the location.

In many works on Finnish existential clauses, it has been pointed out that the partitive subject is occasionally used even in transitive clauses, especially if the verb and the object form an idiomatic phrase (5) but sometimes in other low-transitivity predications as well (6)–(7) (e.g. Siro 1964: 77; Ikola 1972; Saarimaa 1967; Penttilä 1963; Yli-Vakkuri 1979: 156–157; Hakulinen & Karlsson 1979: 167–168; Sands & Campbell 2001; a generative approach is Nikanne 1994).

(5) *Use-i-ta* *sotila-i-ta* *sa-i* *surma-nsa* *taistelu-ssa.*
several-PL-PAR soldier-PL-PAR get-PST.3SG death-ACC.3POSS battle-INE
'Several soldiers got killed (literally: 'got their death') in the battle.'

(6) *Mon-i-a* *ihmis-i-ä* *odott-i* *satee-ssa* *bussi-a.*
many-PL-PAR person-PL-PAR wait-PST.3SG rain-INE bus-PAR
'Many people were waiting for the bus in the rain.'

(7) *Keitto-a* *seuras-i* *erilais-i-a* *liha-,* *kala-* *ja*
soup-PAR follow-PST.3SG differentd-PL-PAR meat fish and
vihannes-ruok-i-a.
vegetable-dish-PL-PAR
The soup was followed by different dishes of meat, fish, and vegetables'. (Ikola 1972)

Especially during the 20th century, such uses attained the attention of language planning authorities (e.g. Saarimaa 1967; Ikola 1972; 1986: 139) who considered them errors

and recommended the use of the nominative instead (e.g. *usea-t sotilaa-t sai-vat…* [many-PL.NOM soldier-PL.NOM get-PST.3PL] in (5)). A more tolerant approach was adopted by Itkonen (e.g. 1988 and the more recent Itkonen & Maamies 2007) who accepted the partitive A in transitive constructions that are semantically close to (and can be rephrased by) existential clauses proper, such as (5) above, but condemned the wider use as "going against language intuition".

In an insightful paper, Yli-Vakkuri (1979) analyzed the partitive A[2] with data consisting of examples from the earlier linguistic literature, as well as a hand-picked set of 39 examples she collected from literary fiction, newspapers and spoken discourse. In her data, the following transitive verbs and verb–object combinations are used with the partitive A: 1) *seurata* 'follow', *kohdata* 'meet', *odottaa* 'wait'; 2) expressions where the object elaborates the activity designated by the verb rather than introduces a referent, as in 'play cards' or 'sing hymns', 3) perception verbs such as *kuunnella* 'listen' and *katsella* 'watch'.[3] Yli-Vakkuri also observed that in most instances the subject NP includes a quantifying expression, as in examples (5) and (6) ('several', 'many'). Unquantified subject phrases that consist of a partitive-marked noun alone occurred only three times in her 39 examples. In addition, there were three instances where the NP included an adjectival modifier. The rest of Yli-Vakkuri's examples, 33 instances, include a quantifying element. The role of the quantifying element thus seems to be central and will be discussed below (§6) in more detail.

The partitive A appears to be quite rare in text corpora. In the Syntax Archives corpus at the University of Turku there is only one occurrence of a partitive NP used as a transitive subject in written[4] text materials (8).

(8) *tulirokko-a* *seura-a* *usein* *jälkitaute-j-a*
scarlet.fever-PAR follow-PRS.3SG often complication-PL-PAR
'Scarlet fever is often followed by complications.'

Example (8) has a partitive A in the clause-final position. It is a plural form introducing a discourse-new, quantitatively non-exhaustive multiplicity ('[some] complications') and thus resembles the canonical existential S in (1)–(3). As is typical in existentials, the verb in example (8) does not agree in number with the plural partitive A – in general, verbs never show agreement with a partitive S in number or person in Finnish, and such a use would be blatantly ungrammatical for the native speaker's ear.[5]

[2] Yli-Vakkuri did not use this term.

[3] It may be worth pointing out that the verbs in groups 1 and 3 assign the (aspectually motivated) partitive case to their object, while the verbs in group 2 also allow the accusative object, if the culmination of the event is indicated ('to sign a hymn from the beginning to the end'). However, in their uses with the partitive A, group 2 verbs take the partitive object, which then indicates progressive aspect. For object marking in Finnish in general, see §3.

[4] In the spoken dialect materials of the Syntax Archives, there are some occurrences where the pronoun *ke-tä* [who-PAR] is used as a transitive subject. However, such occurrences do not count as instances of the partitive A proper, because this partitive form of the pronoun *kuka* 'who' is productively used in the function of the nominative in the southwestern dialects of Finnish; see also the discussion of the quantifier *monta* (which is morphologically a partitive form but behaves like a nominative syntactically) in (§6.2).

[5] Seržant (2015: 395) points out that in North Russian, as well as in Veps, which is closely related to

The Syntax Archives corpora thus suggest that the partitive A is indeed a rare phenomenon. However, its rarity in edited written texts may be caused by language planning authorities, who have considered usages like (8) as errors. Being aware of this, the authors and editors of the texts in the corpora may have avoided using it. Unedited Internet texts turn out to be a more fruitful source, where it is relatively easy to find occurrences, if only one knows what to look for.

In this work, I use hand-picked (or Google-picked) data to discuss the partitive A. As my starting point, I have the set of examples from Yli-Vakkuri's (1979) work, as well as another hand-picked set of 20 examples (courtesy of Jaakko Leino), including examples such as (9) and (10):

(9) *J̌o-ta-in* *unkarilais-i-a* *esitt-i* *siellä*
some-PAR-CLIT Hungarian-PL-PAR perform-PST.3SG there
kansa-n-tansse-j-a.
folk-GEN-dance-PL-PAR
'Some Hungarians were performing folk dances there.' (from a private conversation; example courtesy of Jaakko Leino)

(10) (Miten on mahdollista, että)
korti-n *on* *saa-nut* *henkilö-i-tä,*
card-ACC have.PRS.3SG get-PTCP person-PL-PAR
(joilla ei ole mitään yhteyttä keskustaan?)
'(How is it possible that) the card has been given to persons (who have no connection with the Centre [a political party])?' (Verkko-Ilta-Sanomat 28.5.2010, example courtesy of Jaakko Leino)

In example (9), the partitive A is clause-initial, animate and agentive. It differs clearly from the partitive A in example (8), which is more similar to existential S arguments by being clause-final and inanimate. In both (8) and (9), the partitive A is an indefinite plural form. In example (10), the partitive A is clause-final and animate but not agentive. Another special feature of (10) is that the object *kortin* is in the accusative case – note that in the earlier examples, (8) and (9), not only the partitive A but also the object NP (O) has been in the partitive. Indeed, it seems that the partitive A favors contexts where O is likewise in the partitive. This is a striking feature, because it results in two partitive-marked NPs being arguments of the same verb.

In collecting data for this study with Google, I have used search strings with a specific verb form that is either preceded or followed by a partitive form of a semantically schematic noun, or by a quantifying expression that typically combines with a partitive-marked noun to form an NP. Such data are of course extremely biased and give no ground for a statistical analysis. Nevertheless, as a result I have a set of attested 117 examples from actual language use, and it would be easy to expand this set by further searches.

Finnish, the verb sometimes shows number and person agreement with a plural partitive subject (see also Koptjevskaja-Tamm & Wälchli 2001).

This means that my study can give a picture of contexts and constructions where the partitive A *at least* can be used in unedited written Finnish. I have also used my own and my colleagues' native speaker intuitions for grammaticality judgments of the examples. Against the background that language planning authorities have considered the partitive A an error, it may be surprising that practically no example in my data set feels blatantly ungrammatical to the native speaker's ear.

More specifically, the following points of view will be brought up in this work; points 1–3 concern the synchronic distribution of the partitive A while point 4 also has diachronic connotations.

1. What is the partitive A like in terms of its own grammatical structure and lexical semantics (e.g. animacy)? What is its semantic role in the clause? What kinds of verbs does it occur with?

2. What is the role of the quantifiers that seem to be typical in NPs with the function of a partitive A?

3. Why is the object NP also in the partitive in most instances? When is the accusative object used?

4. What is the motivation for using the partitive case in a transitive subject NP? Are there grammatical systems in the language that pave the road for the partitive subject to spread into transitive clauses?

I will discuss the grammatical and semantic features of the partitive A and the range of verbs in my data in §2. §3 concentrates on the object NP and its case marking, and §4 on agreement and word order. §5 discusses transitive infinitival constructions used as adverbial modifiers in matrix clauses that have an intransitive verb and a partitive S, arguing that such constructions probably give analogical support to the partitive A. §6 discusses the role of the quantifiers that are common in NPs with the function of the partitive A, from the point of view of the argument put forward by Yli-Vakkuri (1979) that the quantitative function of the partitive NP with a quantifier is fundamentally different from that of a bare partitive form. §7 sums up the results of the study. In the following sections, all examples are from the Internet, unless followed by the symbol (C) which marks examples coined by the author as a native speaker of Finnish.

2 Nouns and verbs in typical clauses with a partitive A

In general, the lexical range of nouns that can head the partitive A phrase (which is an NP) resembles that available for the partitive S: there are occurrences extending from inanimate nouns, as in example (8), to animate ones, as in example (9). However, even though the data used here do not permit statistical conclusions, it may be relevant that it is quite easy to find instances of the partitive A with an agentive human referent, which of course is a feature typical of (nominative) A arguments but less so for partitive S

arguments . In Yli-Vakkuri's (1979) set of 39 examples, animate referents dominate likewise: there are only 10 examples with an inanimate referent, while in the majority of Yli-Vakkuri's examples, the referent of the partitive A is human. This suggests a difference between the typical partitive S (referring to an inanimate THEME) and the typical partitive A (referring to a human AGENT). With respect to animacy, the partitive A thus resembles the nominative A which in the spoken-language data of Helasvuo (2001: 92) has a human referent in 91.4% of the cases.

In the Google searches I performed, the verb *seurata* 'follow' turned out to be an especially fruitful candidate to search for. It is common in Yli-Vakkuri's (1979) data as well. In my searches, *seurata* produced numerous hits with a partitive A, with both animate and inanimate referents. The presence of a quantifying element in the partitive A phrase also appears to be typical: in my data the partitive-marked noun is often preceded by a quantifier even if the quantifier was not part of the search string. For instance, the string *ihmis-i-ä seuras-i* [person-PL-PAR follow-PST.3SG] produced numerous hits like (11), where a numeral quantifier (here *tuhans-i-a* [thousand-PL-PAR] 'thousands [of]', likewise in the partitive), precedes the partitive form *ihmisiä*. However, it also produced (fewer) hits where the partitive noun constitutes the subject NP alone (12).

(11) *Tuhans-i-a* *ihmis-i-ä* *seuras-i* *tapahtum-i-a* *ääneti.*
thousand-PL-PAR person-PL-PAR follow-PST.3SG event-PL-PAR silently
'Thousands of people were following / followed the events silently.'

(12) (Esityspaikka oli täynnä, niin että)
ihmis-i-ä *seuras-i* *puhe-tta* *esityspaika-n* *ulkopuole-lla-kin.*
person-PL-PAR follow-PST.3SG speech-PAR venue-GEN outside-ADE-also
(The venue was full, so that) there were people following the speech even outside the venue.'

The more specific string *si-tä seuras-i use-i-ta* [it-PAR follow-PRS.3SG several-PL-PAR] 'it was followed by several…' which specifies both the pre-verbal object NP (the pronoun 'it' in the partitive case) and the post-verbal partitive-marked quantifier, produced inanimate hits only. In those instances, the meaning of *seurata* 'follow' is typically that of temporal succession, as in (13).

(13) (Ensin kuultiin pienempi räjähdys ja)
si-tä *seuras-i* *use-i-ta* *voimakka-i-ta* *räjähdyks-i-ä*
it-PAR follow-PST.3SG several-PL-PAR powerful-PL-PAR explosion-PL-PAR
luol-i-ssa.
cave-PL-INE
(First a minor explosion was heard and) it was followed by several powerful explosions in the caves.'

As I mentioned above, the verb *seurata* 'follow' appears to be particularly common with the partitive A. This is comprehensible, because the verb is polysemous and also

has intransitive uses which make it available in existential clauses proper; consider the existential (14) where the initial elative ('from') phrase indicates a reason for the problems that arise.

(14) *Teoria-sta-si* *seura-a* *ongelm-i-a.*
theory-ELA-2SG.POSS follow-PRS.3SG problem-PL-PAR
'Problems will follow from your theory.'

Since *seurata* 'follow' appears to be a verb rather productively used with the partitive A, I used it as a test case to gather statistical information about the phenomenon from the Finnish Internet Parsebank.[6] In a dataset of approximately 4 million sentences, the program found altogether 7875 transitive uses of *seurata* 'follow', of which 13, i.e. 0.17 %, have a partitive A. In all 13 instances the word order is OVS (overall, there are 6121 SVO and 1190 OVS sentences), and the NP with the function of the partitive A includes quantifying elements in 9 instances. Among the four non-quantified instances, there is one with a genitive modifier, one with an adjectival modifier, and two that consist of the partitive-marked noun alone. This demonstrates that the partitive A is indeed quite rare in actual usage.[7]

Other transitive verbs that produced hits in my Google searches include, e.g. *esittää* 'perform' (example (9) above), *palvella* 'serve' ((15) below), *jättää* 'leave' (16), *hakea* 'fetch; apply [for]' (17), *viettää* 'spend' (18), *tarkkailla* 'observe', *lukea* 'read', *tuijottaa* 'stare', *nähdä* 'see', *tanssia* 'dance', *odottaa* 'wait', *tehdä* 'do', *kuunnella* 'listen', and locative transitives such as *ympäröidä* 'surround' or *reunustaa* 'rim' (as in *The park is rimmed by beaches*), among others. As the choice of the verbs that were searched for were based on the two small hand-picked sets of examples I had, together with my intuition and "educated guessing", the list is of course not exhaustive.

(15) *Tuhans-i-a* *kelkko-j-a* *palvele-e* *matkailu-a.*
thousand-PL-PAR sleigh-PL-PAR serve-PRS.3SG tourism-PAR
'Thousands of sleighs serve tourism.' (Newspaper headline, Helsingin Sanomat 9.12.2000, example courtesy of Jaakko Leino)

(16) *Sato-j-a-tuhans-i-a* *ihmis-i-ä* *jätt-i* *Suome-n.*
hundred-PL-PAR-thousand-PL-PAR person-PL-PAR leave-PST.3SG Finland-ACC
'Hundreds of thousands of people left Finland.'

(17) *Viera-i-ta* *ihmis-i-ä* *hak-i* *tavaro-i-ta* *piene-stä*
strange-PL-PAR person-PL-PAR fetch-PST.3SG thing-PL-PAR small-ELA
vaaleanpunaise-sta *huonee-sta.*
pink-ELA room-ELA
Strange people were fetching things from the small pink room.'

[6] My cordial thanks are due to Veronika Laippala, Filip Ginter and Jenna Kanerva for the Parsebank data (for the Parsebank, see http://bionlp.utu.fi/finnish-internet-parsebank.html).

[7] A fully automatic search that would be able to recognize partitive A constructions in the internet must be left for future research.

(18) *Vasta.ranna-n* *möki-llä* *ihmis-i-ä* *viett-i* *ilta-a*
opposite.shore-GEN cabin-ADE person-PL-PAR spend-PST.3SG night-PAR
ja *soittel-i* *kitara-a.*
and play-PST.3SG guitar-PAR
'At the cabin on the opposite shore there were people spending the night and playing the guitar.'

It is worth noting that the partitive A seems to occur almost exclusively in the plural. It is very difficult to find hits where the partitive A is a singular form of a mass noun, as in Vilkuna's (1989: 261) example (19).

(19) *että* *tietty-j-ä* *historiallis-i-a* *muutoks-i-a* *seura-a*
that certain-PL-PAR historical-PL-PAR change-PL-PAR follow-PRS.3SG
välttämättä *jo-ta-kin* *muu-ta*
necessarily something<PAR> else-PAR
'that certain historical changes are necessarily followed by something else'

In sum, the partitive A seems to favor animate, often human referents, though inanimate referents can also be found. This is comprehensible, because in most instances both A and O are in the partitive (for reasons that will be discussed in §3), and animacy of A is then one factor that keeps them apart. The semantic role of the animate referent is often agentive, as in (16)–(18), while inanimate referents are more typical in clauses that express a transitive locative (e.g. 'surround') or a temporal (e.g. 'follow') relationship. In spite of the agentive role of the animate NPs, the data show a low level of transitivity, as will be seen in the following section.

3 Case marking and the aspectual function of the object NP

As the examples discussed so far show, many verbs that occur with the partitive A are agentive, or at least such that they allow an animate subject. It is also noteworthy that in most instances not only the subject but also the object NP is in the partitive and not in the accusative, which would be the other option and which might be expected for morphosyntactic reasons (i.e. to differentiate between A and O by case marking). In Yli-Vakkuri's (1979) set of 39 examples, there are 10 instances with an accusative object and 27 with a partitive object; in two examples the construction is elliptical and lacks an overt object .

In general, the accusative[8] vs. partitive opposition in Finnish object marking reflects three features (see e.g. Heinämäki 1984; 1994; Kiparsky 1998; Huumo 2010; 2013): 1) ex-

[8]In this paper, following the convention of traditional Finnish grammars, I use the term *accusative object* as a syntactic cover term for all objects that are not in the partitive case. In morphological terms, the category of accusative objects comprises a) singular objects (of personal constructions) with the historical accusative ending *-n*, b) nominative singular objects in imperative and passive constructions, c) the special accusative form of personal pronouns with the ending *-t*, and d) plural nominative objects. This morphologically

haustive [ACC] vs. non-exhaustive [PAR] quantity, 2) culminating [ACC] vs. non-culminating [PAR] aspect, and 3) positive [ACC] vs. negative [PAR] polarity. Condition 3) dominates in the sense that the partitive is used in all object NPs under negation, regardless of the two other conditions. In affirmative clauses, condition 2) dominates over condition 1) (as has been argued e.g. by Vilkuna 1996), in the sense that non-culminating aspect triggers the partitive irrespective of whether the quantity is exhaustive or non-exhaustive. It is only in instances where the aspect is culminating (e.g. in achievements such as 'I found some mushrooms') that the partitive can indicate non-exhaustive quantity (for a more detailed hierarchy of the functions, see Huumo 2013). Thus the partitive signals non-culminating aspect in (20) and non-exhaustive quantity in (21). The accusative object is used if the clause is affirmative, designates the culmination of the event and has an object NP that designates a definite quantity; cf. the accusative versions of (20) and (21). Note that the singular partitive would be ungrammatical in (21) where the verb indicates a punctual achievement and thus the reading with non-culminating aspect (i.e. progressive) is excluded; likewise the quantity of the referent (book) cannot be understood as non-exhaustive, which would trigger the partitive. In (22) the verb is atelic and the aspect thus non-culminating; therefore only the partitive object is possible.

(20) *Rakens-i-n* *talo-n* ~ *talo-a.*
build-PST-1SG house-ACC ~ PAR
'I built [and completed] a/the house.' [ACC] / 'I was building a/the house ~ built a/the house a bit ~ did some house-building.' [PAR] (C)

(21) *Löys-i-n* *kirja-n* ~ *kirja-t* ~ *kirjo-j-a* ~ **kirja-a*
find-PST-1SG book-ACC ~ PL.NOM ~ PL-PAR ~ *SG.PAR
'I found [a/the] book.' [SG.ACC]
'I found the books.' [PL.NOM]
'I found some books.' [PL-PAR] (C)

(22) *Ihaile-n* *Kallu-a~*Kallu-n.*
admire-PRS-1SG Kallu-PAR~*ACC
'I admire Kallu.' (C)

Both in the data I collected for this study and in the data analyzed by Yli-Vakkuri (1979), partitive objects are more common than accusative objects. Though this may be surprising in morphosyntactic terms, it is semantically reasonable when one considers the verbs that appear to be typical with the partitive A, i.e. verbs with meanings such as 'serve', 'follow', 'observe', 'stare', 'dance', 'wait' and 'listen'. Most of these are low-transitivity verbs indicating activities that do not culminate. The partitive marking of the object then reflects this aspectual feature. Even in instances where the partitive A is used with an accomplishment verb (e.g. 'perform', 'read', 'do'), the object is usually in the plural partitive that signals the non-exhaustive quantity of its referent(s). This means that

heterogeneous category (as a whole) constitutes the counterpart of the partitive in the object-marking alternation based on the oppositions of quantification, aspect, and polarity.

the overall event consists of iterated accomplishments, the number of which is unknown, and therefore the aspect may be non-culminating in two ways: either by indicating a progressive meaning ('Some Hungarians were performing dances' in example (9) above) or by indicating a higher-level atelic event ('Some Hungarians performed some dances'), in which case the partitive marking of the object NP ('dances') in example (9) means that the quantity of the dances performed by 'some Hungarians' was non-exhaustive. While performing one dance counts as an accomplishment, performing several dances in a row is an activity. It is also noteworthy that a singular accusative object *tanssi-n* [dance-ACC] would make example (9) less acceptable with its partitive A. This suggests the generalization that the partitive A is most acceptable in low-transitivity clauses that are aspectually non-culminating.

However, there are also instances where the partitive A is used with an accusative object, both in my data and the in data of Yli-Vakkuri (1979). An interesting feature of such sentences is that the event is not collective but distributive: each referent of the partitive A (which is in the plural) achieves or accomplishes something individually. Consider example (23), which is from the webpage of a newspaper.

(23) *(Se on vanha palkinto, joka annetaan nuorille kirjailijoille,)*

ja	*se-n*	*on*	*saa-nut*	*tosi*	*hieno-j-a*	*kirjailijo-i-ta.*
and	it-ACC	have.PRS.3SG	get-PTCP	really	fine-PL-PAR	writer-PL-PAR

(It is an old prize given to young writers,) and some really fine writers have won it.'

In (23), the pronominal object *se-n* [it-ACC] refers to a prize that each winning author has won once. Because 'winning a prize' is an achievement (i.e. an instance of culminating aspect), the accusative object is used. It seems that the distributive reading is the factor that makes the accusative object in (23) acceptable. The importance of the distributive meaning of the partitive A was also pointed out by Siro (1964: 77), who argued that a possible motivation for the use of the partitive in transitive subjects may be the avoidance of a collective interpretation which the nominative case might evoke. All examples with an accusative object in Yli-Vakkuri's (1979) data are likewise distributive, and attempts to form examples with a collective meaning result in ungrammaticality. Consider the coined example (24) where the (ungrammatical) accusative object would indicate the culmination of a collective accomplishment. The partitive object is better,[9] as it indicates non-culminating (in this case, progressive) aspect. Example (25) is an attested occurrence with a partitive object.

(24) *(?)Kirkko-a / *kirkon rakens-i kymmen-i-ä sukupolvi-a.*

church-PAR	*ACC	build-PST.3SG	ten-PL-PAR	generation-PL-PAR

'Tens of generations built [participated in the building of] the church.' (C)

[9] The question mark indicates the fact that such examples are considered ungrammatical in Standard Finnish and may not be acceptable for all speakers.

(25) *Kymmen-i-ä-tuhans-i-a* *ihmis-i-ä* *rakens-i* *tä-tä*
ten-PL-PAR-thousand-PL-PAR person-PL-PAR build-PST.3SG this-PAR
linja-a (ja me kävimme siis yhdessä bunkkerissa.)
line-PAR
'There were tens of thousands of people building [participated in the building of] this [defense] line (and so we visited one bunker).'

In the same vein, example (25) would be odd with the object in the accusative (*tämän linjan*), to indicate that the people collectively built and completed the defense line. What example (25) (like the partitive version of the coined (24)) means is that the quantity of people referred to by the partitive A took part in the building. In spite of the transitive structure, an existential kind of meaning is involved ('There were tens of thousands of people who participated in the building of the defense line'). Note that in spite of its partitive object, which often indicates a progressive meaning, example (25) is not progressive in the sense of indicating a "cross-section" of an ongoing event where a non-exhaustive quantity of people are simultaneously participating. The participation of the people need not be simultaneous; the example rather means that there have been people involved in the building of the defense line at different times during its construction. In this respect, the partitive A resembles the canonical partitive S (of existentials), the reference of which may change as the event unfolds (see Huumo 2003 for details). In general, the aspectual meaning of the examples with a partitive A relates to non-culminating aspect: the events are atelic processes, or if telic (as the examples with 'build'), not understood as reaching their culmination.

4 A note on word order

As far as word order is concerned, the examples discussed so far show that the constructions with the partitive A may have an AVO ((15)–(18)) as well as OVA ((8), (10), (13)) word order. In lack of systematic corpus data it is impossible to say which order is more common in actual usage, or whether the word order variants pattern around different verbs. However, it is easy to see a motivation for both patterns: Finnish is an AVO language but has a discourse-pragmatically conditioned word order (see Vilkuna 1989: 35–62) which allows indefinite subjects to occur in a postverbal position, not only in existential clauses but also in non-existential constructions, including transitive clauses. In actual usage, the postverbal position is typical of indefinite, structurally heavy subject NPs that introduce a discourse-new referent (for written language, see Huumo 1995; for spoken language, Helasvuo 2001: 75–81). One can thus see two competing motivations for the word order in transitive clauses with the partitive A: the AVO order that is typical of Finnish transitive clauses, and the XVS order of existentials, combined with the tendency for indefinite subjects to occur towards the end of the clause.

Because object NPs are also commonly in the partitive in the data, ambiguity may be expected to arise: which partitive NP is the subject and which one the object? It seems, though, that real ambiguity is rare in actual usage, because in many cases the lexical

meaning of the partitive A shows that it is the subject. For instance, the partitive A (but not O) is often animate in cases where the verb selects for an animate subject. Furthermore, if the partitive marking of the object NP unambiguously reflects non-culminating aspect, not quantity, then that NP cannot be understood as the partitive A, which follows the rules of existential S marking in that the partitive indicates non-exhaustive quantity, not aspect. In spite of these facts, there are some ambiguous instances in my data. In (26) both A and O are plural partitive NPs with a human referent, and thus the example as such is ambiguous between the AVO and the OVA readings.

(26) *Sotila-i-ta* *seuras-i* *aina* *huolto.joukko-j-a* *ja*
soldier-PL-PAR follow-PST.3SG always maintenance.troop-PL-PAR and
kauppia-i-ta *huolto.varmuude-n* *ylläpitämise-ksi.*
vendor-PL-PAR maintenance.certainty-GEN securing-TRA
'Soldiers were always followed by maintenance troops and vendors to secure the maintenance.'

Even in this case, however, the context reveals that it is the maintenance troops and vendors who follow the soldiers (into conquered territories), not vice versa. The example is thus OVA. In purely grammatical terms, though, nothing would prevent the AVO reading, and in the coined, context-less example (27) the AVO and OVA interpretations are equal.

(27) *Tyttö-j-ä* *seuras-i* *poik-i-a.*
girl-PL-PAR follow-PST.3SG boy-PL-PAR
'[Some] girls followed [some/the] boys' / '[Some/the] girls were followed by [some] boys.'

As the English translation of (27) shows, the partitive A is always indefinite but the partitive O may be either definite or indefinite. If O is understood as definite ('the girls', 'the boys'), then its partitive marking reflects the non-culminating aspect only. This is also the reason why example (28) below can only be an AVO instance where *häntä* 'him/her' is the grammatical object and not a partitive A: its partitive case is not motivated by a non-exhaustive quantity but by non-culminating aspect.

(28) *Kymmen-i-ä,* *ell-ei* *sato-j-a* *sotila-i-ta* *seuras-i*
ten-PL-PAR if-NEG hundred-PL-PAR soldier-PL-PAR follow-PST.3SG
hän-tä.
3SG-PAR
'Tens if not hundreds of soldiers followed him/her.'

Another grammatical feature that relates to word order is the lack of subject–verb plural agreement in colloquial spoken Finnish (see e.g. Helasvuo 2001: 67) but also in nonstandard written varieties, such as Internet texts. In such varieties, the singular 3rd person verb form is used even with plural nominative subjects. In Standard Finnish, this

is considered an error – however, there is clearly a pressure from the colloquial varieties against plural agreement, and this pressure seems to be strongest in clauses where an indefinite plural nominative subject follows the verb. According to my observations, even university students of Finnish (who are educated to be specialists in the language) have difficulties in marking plural agreement if the nominative plural subject is indefinite and follows the verb. Keeping in mind that the partitive S does not trigger verb agreement, it is possible (as also suggested by De Smit 2016) that the decay of agreement, which is clearly manifest in spoken and nonstandard written Finnish, is another feature paving the road for the partitive marking to spread into indefinite plural subjects even in transitive clauses. When there is no agreement even with a (post-verbal) nominative subject, then constructions with a nominative vs. a partitive subject resemble each other in all respects except the case marking of the subject – in other words, there is no agreement to prevent the use of the partitive.

5 Semi-transitive infinitival constructions

If looked at in isolation, transitive clauses with a partitive A may appear striking, but there are in fact a few infinitival constructions, also acceptable in Standard Finnish, that bring the partitive S and an object NP close to being arguments of the same complex predicate. In the (coined) example (29), the predicate verb is intransitive and has a partitive S but also an infinitival modifier, traditionally parsed as an adverbial, consisting of a transitive verb which has its own object NP.

(29) *Turiste-j-a* *saapu-u* *ihastele-ma-an* *rakennus-ta.*
tourist-PL-PAR arrive-PRS.3SG admire-INF-ILL building-PAR
'Tourists arrive to admire the building.' (C)

Example (29) has an intransitive motion verb ('arrive') which is quite typical in existential clauses. Therefore the partitive S is grammatical. The example also includes an infinitival form of the transitive verb 'admire', which in turn has a grammatical object but no subject argument of its own – the infinitive is controlled by the matrix verb in the sense that the A argument of the matrix verb is understood as the agent of the infinitive as well. In traditional grammars of Finnish, such infinitival forms are analyzed as adverbials of the finite verbs, and since the object is part of the infinitival construction, it is not considered to be an object at the level of the matrix clause. If the relationship between the finite verb and the infinitive is relatively tight (i.e. if they are understood as forming a complex predicate where the function of the matrix verb resembles that of an auxiliary), then "almost-transitive" clauses arise where the partitive A and the O can be understood as arguments of the same complex predicate (not of different verb forms); consider (30).

(30) *Mon-i-a* *lahjakka-i-ta* *ihmis-i-ä* *on* *teke-mä-ssä*
many-PL-PAR talented-PL-PAR person-PL-PAR be.PRS.3SG do-INF-INE
ulkopolitiikka-a.
foreign.policy-PAR
(mutta sitä tehdään omissa lokeroissa eivätkä eri osa-alueet kohtaa.)
'There are many talented people carrying out [our] foreign policy (but they do it in their individual lockers and the different areas do not meet).'

In (30), the finite verb is *olla* 'be', which, on the one hand, is the most typical existential verb, but, on the other hand, has functions as an auxiliary when it is combined with infinitival forms to form complex predicate constructions. The infinitival form in (30) is *teke-mä-ssä*, the so-called 3rd infinitive inessive form of the verb meaning 'do' (roughly translatable as 'in doing'). This infinitive often combines with the verb 'be' to form a progressive construction; cf. (31).

(31) *Ole-n* *luke-ma-ssa* *tä-tä* *raportti-a-si.*
be-PRS.1SG read-INF-INE this-PAR report-PAR-2SG.POSS
'I am reading this report of yours.' (C)

Though the Finnish *olla* ('be, exist') + the 3rd infinitive inessive ('in-the-activity-of') construction is not a fully grammaticalized progressive but maintains a locative-absentive meaning (by implying that the agent is absent from the location of the speech event, at another location where the activity takes place; cf. Markkanen 1979; Tommola 2000; Onikki-Rantajääskö 2005), it is nevertheless a more grammaticalized combination of an existential finite verb and its transitive infinitival "adverbial" modifier than the constructions in example (29). In constructions like (30), the partitive S and the O are close to being arguments of the same predicate. Yli-Vakkuri (1979: 165) also points out that in her data of the partitive A, many instances could alternatively be expressed by using the progressive construction, as they indicate an ongoing event.

Note that the analogy of expressions such as (30) may also for its part explain why the partitive object is more natural than the accusative in transitive clauses with a partitive A. The partitive O can reflect different types of non-culminating aspect, among which the progressive meaning is a typical one. Thus if progressive constructions such as (30) give analogical support to the partitive A, then it is reasonable that the progressive meaning is also typical in transitive clauses with the partitive A. However, at a more general level it can be pointed out that both the partitive S and the partitive O associate with low transitivity[10] (in aspectual terms, atelic, progressive or cessative aspect as opposed to telic predicates such as accomplishments, cf. Huumo 2010). This may also motivate the dominance of partitive objects in clauses with the partitive A.

[10]However, as pointed out to me by an anonymous reviewer, it seems to be the case that not all low-transitivity constructions accept the partitive A.

6 The role of quantifiers

In this section, I will take a closer look at the quantifier expressions that are typical in NPs with the function of the partitive A. Subsection §6.1 introduces and discusses different types of mass ('a lot of', 'much') and plurality ('several', 'a few') quantifiers that are common in this function, while subsection §6.2 concentrates on the singular quantifier *moni* 'many' (+singular), and its partitive form *mon-ta*, which has been reanalyzed as a nominative in many contexts and, as a consequence, given rise to the pleonastic double partitive *mon-ta-a* that explicitly indicates the function of a partitive. The form *monta* alternates between the functions of a nominative and a partitive and is typical in (partitive) A phrases as well.

6.1 Quantifiers in the partitive A phrase

A characteristic feature of phrases with the function of the partitive A is the presence of quantifying elements such as 'several', 'a lot of', as well as indefinite numerals that are themselves in the partitive case ('hundreds / thousands of'). These quantifiers can be roughly divided into two groups depending on whether they are able to quantify both mass nouns and plurals (as the English *a lot of coffee ~ a lot of cars*) or plurals only (**several coffee ~ several cars*). I will refer to these two groups as *mass quantifiers* and *plurality quantifiers*, respectively (detailed analyses [in Finnish] include Hakulinen & Karlsson 1979; Huumo 2016a,b). Finnish plurality quantifiers, like adjectival modifiers in general, agree with their head (the quantified noun) in number and case (32), while mass quantifiers are fossilized forms not inflected in number and case (33). Both kinds of quantifiers are used in NPs with the function of a partitive subject (S or A).

(32) *Use-i-ta* *auto-j-a* *seiso-o* *piha-lla.*
several-PL-PAR car-PL-PAR stand-PRS.3SG yard-ADE
'There are several cars standing in the yard.' (C)

(33) *Paljon* *auto-j-a* *seiso-o* *piha-lla.*
a.lot.of car-PL-PAR stand-PRS.3SG yard-ADE
'There are a lot of cars standing in the yard.' (C)

The tendency for partitive A phrases to include quantifiers was also observed by Yli-Vakkuri (1979). In her data of 39 examples collected from actual usage, 33 examples have a quantifying element preceding the partitive noun. Yli-Vakkuri also made a query to 103 native-speaker informants regarding the acceptability of different subtypes of clauses with a partitive A. She found out that the clear majority of the informants considered versions with a quantifier more acceptable than those with a bare (unquantified) partitive noun form. She also asked the informants to correct the sentences they considered ungrammatical. The result was, remarkably, that many informants added a quantifier but maintained the partitive marking of the quantified NP instead of changing it into the nominative (Yli-Vakkuri 1979: 175). This raises the question about the central role of the quantifier in the partitive A phrases.

In my data gathered with Google, quantifying elements are also common, even if they were not searched for. For example, in the hits produced by the search string "*ihmisiä seurasi*" ('people[PAR] followed'; see the examples in §2), most hits where *ihmisiä* was a part of a partitive A phrase had some kind of a quantifying element preceding the form *ihmisiä*. The search also produced hits (not targeted for) where the partitive form *ihmisiä* is a post-modifier of a nominative head with a collective meaning, such as 'group' or 'team', i.e. a collective that consists of a number of persons, as in (34) and (35) (which of course are not instances of the partitive A).

(34) *Täysi* *torillinen* *ihmis-i-ä* *seuras-i* *Valoviikko-jen*
full market.place.full person-PL-PAR follow-PST.3SG ligh.week-PL.GEN
avajais-i-a *Tamperee-lla.*
opening-PL-PAR Tampere-ADE
'A full market-place-full of people was following the openings of the Illuminations in Tampere.'

(35) *Suuri* *joukko* *ihmis-i-ä* *seuras-i* *Schwarzeneggeri-n* *ja*
big crowd person-PL-PAR follow-PST.3SG Schwarzenegger-GEN and
olympiatule-n *yhteis-tä* *matka-a.*
olympic.fire-GEN joint-PAR journey-PAR
'A big crowd of people followed the journey of Schwarzenegger and the Olympic Flame.'

In (34) the head of the subject NP is the nominative form *torillinen* 'market-place-full', derived from the noun *tori* 'market place' to designate something that fulfills the whole market place. The partitive *ihmisiä* is a post-modifier of this noun. In example (35) the head noun of the subject NP, *joukko* 'crowd', is in the nominative, and it is followed by the partitive modifier *ihmisiä* 'people'. These examples are thus not instances of the partitive A but illustrate a "legitimate" construction (from the point of view of language planning authorities) where the subject NP that contains a partitive form has the function of A. In the light of these examples, now consider (36)–(38).

(36) *Runsaa-sti* *ihmis-i-ä* *seuras-i* *vappupuhe-i-ta*
abundant-ADV person-PL-PAR follow-PST.3SG 1st.of.May.speech-PL-PAR
aurinkoise-lla *mutta* *tuulise.lla* *kauppatori-lla.*
sunny-ADE but windy-ADE market.square-ADE
'A lot of [lit. abundantly] people were following the 1st of May speeches on the sunny but windy market square.'

(37) *(Elvis Presleyn kuolema vuonna 1977 toi välittömästi yli 100 000 surijaa Gracelandin porteille, ja)*
sama-n *verra-n* *ihmis-i-ä* *seuras-i* *paika-n* *pää-llä*
same-ACC amount-ACC person-PL-PAR follow-PST.3SG spot-GEN on-ADE
häne-n *hautajais-i-a-an.*
3SG-GEN funeral-PL-PAR-3POSS
(Elvis Presley's death in 1977 immediately brought over 100 000 mourners to the gates of Graceland, and) the same amount of people followed his funeral on the spot.'

(38) *(Missä hän menikin, niin)*
paljon *ihmis-i-ä* *seuras-i* *hän-tä.*
a.lot.of person-PL-PAR follow-PST.3SG 3SG-PAR
(Wherever He [Christ] went), a lot of people followed Him.'

In (36)–(38), the partitive form *ihmisiä* is preceded by a mass quantifier which is more abstract than the collective nouns of examples (34)–(35). It is not always clear whether the head of the subject phrase is the quantifier or the partitive. For example, the influential Finnish syntax book by Hakulinen & Karlsson (1979: 147) mentions both possibilities for the analysis of such phrases, as either NPs or "quantifier phrases". However, unlike the collective nouns in (34)–(36), the quantifiers in (36)–(38) are not referential: they do not designate a group or other kind of a collective that would be understood as the actual referent of the phrase. For instance, in (36) the adverb *runsaasti* 'abundantly' used as a mass quantifier does not refer to a group but specifies the quantity indicated by the partitive *ihmisiä* 'people'. This means that, in semantic terms at least, there are good reasons to consider the partitive-marked noun the head of the phrase.

Morphologically, *runsaasti* is derived from the adjective *runsas* 'abundant' by adding the adverb-forming affix *–sti*, in the same way as the English *abundant-ly*, which is semantically close to it. The quantifier *paljon* (38), in turn, is historically the accusative form of the quantifier *paljo* 'multitude' (cf. Tuomikoski 1978), which has grammaticalized into an opaque quantifier and only used in its accusative form in present-day Finnish (see Karttunen 1975 for the grammar of *paljon*). Though Karttunen (1975), following Penttilä (1963) considers *paljon* the head of the phrases such as that in (38), this element resembles *runsaasti* of example (36) in being a quantifier, not a noun, and there are equally good reasons to argue that the partitive form is actually the head and the phrase is an NP. The more recent comprehensive grammar (Hakulinen et al. 2004: §657) states that such quantifiers occur "next to the NP" they quantify, hinting that the quantifiers might be external to the NP. The expression *verran* in (37) apparently has a similar background as *paljon*: it is a grammaticalized accusative form of the noun *verta* meaning 'worth' or 'match' (as in *He is no match to me*). In any case, it is not referential in (37).

In sum, all subject phrases in (36)–(38) include mass quantifiers that are not inflected and, for instance, cannot be pluralized, unlike the collective heads proper in (34) and (35), yielding *jouko-t ihmis-i-ä* 'groups of people' (which in a subject position triggers

plural agreement in the verb in Standard Finnish). The collective nouns can also be case inflected, as in *torillise-lle* [ALLATIVE] *ihmis-i-ä* 'to a/the market-square-full of people', where, irrespective of the case marking of the collective noun, the partitive postmodifier keeps its partitive in all contexts – this is another feature demonstrating that the collective noun is indeed the head. The quantifying expressions in (36)–(38), in contrast, are not inflected and show no behavior of a head of a subject NP (i.e. do not trigger verb agreement).

In terms of prescriptive grammar, transitive clauses such as (34)–(35) are acceptable, because the collective noun is the head of the subject NP and it is in the nominative. In contrast, examples (36)–(38) have been considered ungrammatical by some language planning authorities, because they bring the partitive subject into a transitive clause (in an analysis where the partitive is the head). However, it is easy to see a similarity between the two constructions, and it is very likely that expressions such as (34) and (35) serve as an analogy for the use of the partitive A with a quantifier as in (36)–(38). Note, furthermore, that verb agreement does not help to distinguish the head in examples like (36)–(38) in the way of the English alternation between *A flock of geese is ~ are in the yard*, where the verb form shows whether *flock* or *geese* is understood as the head of the subject NP (see Langacker 2009: 53). This is because the quantifiers in examples (36)–(38) cannot be morphologically pluralized (to trigger plural agreement in the verbs; note that they do not trigger semantic plural agreement either).

On the other hand, plurality quantifiers agree with the quantified noun in number and case; see (39) and (40) below.

(39) *(Sitten huomasin, että)*
minu-a *tuijott-i* *use-i-ta* *silmä.pare-j-a* *varjo-i-sta.*
1SG-PAR stare-PST.3SG several-PL-PAR eye.pair-PL-PAR shadow-PL-ELA
(Then I noticed that) I was stared at by several pairs of eyes from the shadows.'

(40) *(vaikka näkisikin että)*
sato-j-a *ihmis-i-ä* *on* *luke-nut*
hundred-PL-PAR person-PL-PAR have.PRS.3SG read-PTCP
viesti-si
message-ACC.2SG.POSS
(niin harva kuitenkaan vaivautuu vastaamaan)
'(Even though you see that) hundreds of people have read your message, (only few bother to answer you).'

Like examples (36)–(38), examples (39) and (40) include a quantifying element that precedes the partitive noun. The difference is that in (39) and (40) the quantifying element is a plurality quantifier and therefore agrees with the partitive-marked noun. Such NPs thus seem to be partitive subjects indisputably. However, Yli-Vakkuri (1979) argues that in spite of the partitive of the quantifier, such phrases differ from unquantified partitive subjects which indicate a non-exhaustive quantity. The quantity indicated by phrases

such as those in (39) and (40) are, in Yli-Vakkuri's terms, quantitatively marked. This can be seen best by analyzing uses where such phrases have the function of a grammatical object; recall that the partitive marking of the object NP may reflect non-culminating aspect or non-exhaustive quantity in affirmative clauses. Yli-Vakkuri (1979) demonstrates that the quantity expressed by phrases including a partitive quantifier (such as the subject NPs in (39) and (40)) behaves like (in the current terminology) an exhaustive quantity in certain contexts. For instance, if the phrase *use-i-ta ihmis-i-ä* [several-PL-PAR person-PL-PAR] has the function of a grammatical object, it behaves, in terms of quantification, like a plural accusative object (which is morphologically in the nominative case and indicates an exhaustive quantification), not like an unquantified partitive NP. This can be seen by considering the behavior of the durative modifiers *tunni-n* [hour-ACC] 'for an hour' vs. *tunni-ssa* [hour-INE] 'in an hour', which, like their English counterparts, are a good test indicator for non-culminating vs. culminating aspect, respectively. Consider the following examples.

(41) *Poim-i-n* *sien-i-ä* *tunni-n* *(*tunni-ssa).*
pick-PST.1SG mushroom-PL-PAR hour-ACC (*INE)
'I picked mushrooms for (*in) an hour.' (C)

(42) *Poim-i-n* *siene-t* *tunni-ssa* *(*tunni-n).*
pick-PST.1SG mushroom-PL.NOM hour-INE (*ACC)
'I picked the mushrooms in (*for) an hour.' (C)

(43) *Poim-i-n* *use-i-ta* *sien-i-ä* *tunni-ssa* *(*tunni-n).*
pick-PST.1SG several-PL-PAR mushroom-PL.NOM hour-INE (*ACC)
'I picked several mushrooms in (*for) an hour.' (C)

These examples all designate an iterative event of picking mushrooms, with the duration of an hour. Because the unquantified partitive object in (41) designates a non-exhaustive quantity of mushrooms, the number of the sub-events (of picking one mushroom at a time) is likewise non-exhaustive (unbounded), and the accusative-marked durative adverbial *tunnin* 'for an hour' must be used to indicate the temporal boundaries of the event. In (42) the plural accusative (syntactically accusative, morphologically nominative) object indicates an exhaustive quantity of mushrooms, which yields a bounded number of the sub-events; hence the inessive *tunnissa* 'in an hour' must be used. Remarkably, even though both the quantifier *useita* and the head *sieniä* 'mushrooms' in (43) are in the partitive, the example aligns with the accusative object in (42), not with the bare partitive in (41), by selecting the inessive durative element.[11] As Yli-Vakkuri (1979) points

[11] However, it deserves to be pointed out that if the partitive marking of the object NP is triggered by non-culminating aspect alone, not by non-culminating aspect based on non-exhaustive quantity, then the phrases with a partitive quantifier align with partitive objects: *Heikki rakast-i {nais-ta /*naise-n / nais-i-a / *naise-t / use-i-ta nais-i-a}* [Heikki love-PST.3SG woman-PAR / *woman-ACC /woman-PL-PAR / *woman-PL.NOM / several-PL-PAR woman-PL-PAR] 'Heikki loved [a/the] woman /[ø/the] women / several women'. Because the verb 'love' is atelic, the accusative object is ungrammatical, but both the unquantified partitive (singular or plural) and the plural partitive quantified by *useita* are fine. A more detailed analysis of the grammatical functions of phrases with plural partitive quantifiers must be left for future research.

out, the (syntactic) accusative object with the plural NP *usea-t siene-t* [several-PL.NOM mushroom-PL.NOM] would indicate a more specialized meaning, i.e. 'several sets of mushrooms', e.g. for different mushroom dishes. Therefore, she argues, the case distribution (NOM/ACC vs. PAR) of quantified NPs differs from that of unquantified NPs.

This is strong evidence for Yli-Vakkuri's (1979) point that the quantity indicated by an NP with a plurality quantifier is fundamentally different from the quantity indicated by an unquantified NP. The same can be said of examples such as (40), with a plural partitive of a numeral, which can only be formed of numerals divisible by ten ('tens of', 'hundreds of', 'thousands of', but not for instance '*eights of'). In Finnish, such expressions, when used in the function of a subject, alternate between the nominative (e.g. *kymmene-t ihmise-t* [ten-PL.NOM person-PL.NOM]) and the partitive (e.g. *kymmen-i-ä ihmis-i-ä* [ten-PL-PAR person-PL-PAR]), both of which can be translated into English as *tens of people*. The nominative version can mean either 'ten sets of people' [e.g. ten work teams] or, more vaguely, 'several sets of (ten) people', in which case the opposition between the partitive and the nominative is neutralized, as both expressions are vague as to how many such sets they refer to.

When such a phrase is used as the subject of a transitive clause in Standard Finnish, it would be expected to be in the nominative. However, as the data of Yli-Vakkuri (1979) and this study suggest, in unedited texts at least, the plural partitive numeral is quite common and acceptable. According to Yli-Vakkuri (1979), one motivation for the expansion of the partitive in this construction is the fact that the nominative might imply a too specific interpretation for the quantified partitive noun (e.g. 'tens of *the* people', or (specifically) 'ten *sets* of people'), which is not intended. Thus the partitive quantifier may be gaining ground in uses where the nominative would indicate too specific meanings. As in example (43), the partitive plural numeral also indicates a definite quantity when used as the object in iterative expressions; consider (44).

(44)	*Poim-i-n*	*kymmen-i-ä*	*sien-i-ä*	*tunni-ssa*	*(*tunni-n).*
	pick-PST-1SG	ten-PL-PAR	mushroom-PL-PAR	hour-INE	(*ACC)

'I picked tens of mushrooms in (*for) an hour.' (C)

In semantic terms, the grammatical behavior of the phrases with partitive-marked quantifiers thus suggests that they designate a definite quantity. Like uninflected, fossilized mass quantifiers such as *paljon* 'a lot of' (38) or *runsaasti* 'abundantly' (36), plural partitive quantifiers suffice to quantify the partitive-marked noun. For instance, in (44) this means that there are an indefinite number of higher-order quantities that consist of ten mushrooms each. This, perhaps surprisingly, yields a bounded quantity of the mushrooms, even though the plural partitive *kymmeniä* 'tens (of)' would suggest that the number of such quantities (with ten mushrooms in each) is unbounded. One might in fact say the same of the English translation of (44): the expression *tens of mushrooms* literally indicates an indefinite number of quantities of ten mushrooms. Likewise in English, though, the durative modifier must be of the type *in an hour*, not *for an hour*. In sum, there are good reasons to concur with Yli-Vakkuri's (1979) argument that the overwhelmingly most common kind of phrase used as a partitive A, that is, an NP with a

quantifying element preceding the partitive-marked noun, is fundamentally different from a bare partitive form in terms of quantification.

It is also worth pointing out that if such a quantifier is added to one of the partitive NPs in the ambiguous example (29) 'girls$_{[PAR]}$ followed boys$_{[PAR]}$', then a strong inclination arises to understand the quantified phrase as the subject, even though in principle it could still be the object as well. Consider the following examples.

(45) *Tyttö-j-ä* *seuras-i* *use-i-ta* *poik-i-a.*
girl-PL-PAR follow-PST.3SG several-PL-PAR boy-PL-PAR
The girls were followed by several boys' / ?? '[Some] girls followed several boys.' (C)

(46) *Kymmen-i-ä* *tyttö-j-ä* *seuras-i* *poik-ia.*
ten-PL-PAR girl-PL-PAR follow-PST.3SG boy-PL-PAR
'Tens of girls followed the boys'. / ??'Tens of girls were followed by boys.' (C)

Furthermore, the quantifier *paljon* 'a lot' in fact makes this test sentence unambiguous, because it cannot quantify the object of an atelic verb (see Karttunen 1975), and thus the *paljon* phrase must be the subject in (47).

(47) *Tyttö-j-ä* *seuras-i* *paljon* *poik-i-a*
girl-PL-PAR follow-PST.3SG a.lot.of boy-PL-PAR
'The girls were followed by a lot of boys.' (C)

Such effects disappear and the ambiguity returns if both phrases include a quantifier:

(48) *Kymmen-i-ä* *tyttö-j-ä* *seuras-i* *use-i-ta* *poik-i-a.*
ten-PL-PAR girl-PL-PAR follow-PST.3SG several-PL-PAR boy-PL-PAR
Tens of girls were followed by several boys.' / 'Tens of girls followed several boys.' (C)

However, such combinations seem to be extremely rare in actual usage. In Yli-Vakkuri data, there is not a single instance of the type illustrated by (48), and I have not been able to find such hits with my searches either. As most partitive A phrases include quantifiers, and most object phrases do not, this suggests that the system nevertheless rather successfully keeps the A and O grammatically apart in the majority of cases.

6.2 The problematic *monta* 'many[PAR?]'

Among the quantifying expressions commonly used in partitive A phrases, the form *monta* [many-PAR] 'many' has an especially interesting role (see also Huumo 2017). First of all, it is (historically) a singular partitive form of the quantifier *moni* 'many', and the element it quantifies is likewise in the singular partitive, not in the plural like most partitive A phrases. The nominative form *moni* modifies a singular nominative head, but it has a more specific ('many of the') type of meaning, e.g. *moni mies* [many.SG.NOM

man.SG.NOM], cf. the English *many a man*. For this quantifier, the form *mon-ta*, in spite of its partitive case, has been generalized to many uses where it has a function similar to the nominative form of cardinal numerals. In spite of this, the earlier literature on partitive A (until Branch 2001) has treated *monta* expressions as partitive phrases, without paying attention to their special nature.

To grasp the idiosyncratic nature of *monta* phrases, consider first the use of cardinal numerals in Finnish. Finnish cardinal numerals in the nominative combine with a singular partitive noun that indicates the quantified entity type, e.g. *viisi mies-tä* [five.NOM man-SG.PAR] 'five men'. In other case forms, however, the quantified noun and the numeral carry the same case. The numeral can also occur in the partitive if used for instance in the function of a partitive object;[12] consider example (49).

(49) *Heikki* *rakasta-a* *kolme-a* *nais-ta.*
Heikki love-PRS.3SG three-PAR woman-SG.PAR
'Heikki loves three women.' (C)

If the numeral is in the nominative, it is analyzed as the head by grammars, and the quantified partitive form as a post-modifier (50). However, in other case forms the numeral agrees with the quantified noun (like an adjectival modifier), which is why the quantified noun is then considered the head; cf. example (51) where the possessor NP is marked with the adessive.

(50) *Viisi* *mies-tä* *saapu-i.*
five.NOM man-SG.PAR arrive-PST.3SG
'Five men arrived.' (C)

(51) *Viide-llä* *miehe-llä* *on* *flunssa.*
five-ADE man-SG.ADE is.PRS.3SG flu.NOM
'Five men have the flu.' (C)

As I pointed out above, the form *monta*, though morphologically a partitive, behaves in many contexts like the nominative (not partitive) form of a numeral (Branch 2001); consider (52) and (53).

(52) *Mon-ta* *mies-tä* *saapu-i.*
many-PAR man-SG.PAR arrive-PST.3SG
'Many men arrived.' (C)

(53) *Viisi* *(*viit-tä)* *mies-tä* *saapu-i.*
five.NOM (*PAR) man-SG.PAR arrive-PST.3SG
'Five men arrived.' (C)

[12] To indicate non-culminating aspect or negative polarity – note that the quantity indicated by the numeral phrase is of the exhaustive type, which is why the partitive marking cannot be motivated by non-exhaustive quantity.

It is in examples like (52) that the partitive form *monta* behaves like the nominative form of a numeral (53). In principle, the nominative *moni mies* [many.NOM man.NOM] would be expected, but as Yli-Vakkuri (1979) and Branch (2001) point out, it would easily be understood as meaning 'many of the men' [i.e. some members of a definite set] or the idiomatic 'many a man'. Note that the subject NP in (52) is not functionally similar to a partitive subject proper, as singular count nouns cannot be used in this function (see examples (1)–(3)). Example (53) shows that numerals must take the nominative in such a context.

Since *mon-ta*, in spite of its partitive ending, is functionally similar to the nominative of numerals, the pleonastic "double partitive" form *mon-ta-a* [many-PAR-PAR] has arisen to explicitly indicate the partitive meaning. Like the partitive of the numeral 'five' in (53), the form *montaa* would be ungrammatical in (52). *Montaa* is used in contexts where numerals are likewise in the partitive, e.g., in the functions of aspectually partitive-marked or negative-polarity partitive objects. It is in a grammatical opposition with the "nominativized" *monta* in contexts where aspect can alternatively be understood as culminating or not culminating; consider (54) (with a nominative numeral or *monta*) vs. (55) (with a partitive numeral or *montaa*).

(54) *Ole-n* *luke-nut* *mon-ta* ~ *kaksi* *kirja-a.*
have-PRS.1SG read-PTCP many-PAR ~ two.NOM book-SG.PAR
'I have read many ~ two books [completely].' (C)

(55) *Ole-n* *luke-nut* *mon-ta-a* ~ *kah-ta* *kirja-a.*
have-PRS.1SG read-PRTC many-PAR-PAR ~ two-PAR book-SG.PAR
'I have read many ~ two books [not completely]'; 'I have been reading many ~ two books.' (C)

In example (54), the form *monta*, like the nominative numeral *kaksi* 'two', indicates a culminating aspect: the books have been read completely. Functionally they thus resemble the accusative object. In (55), on the other hand, the form *montaa*, as well as the partitive *kahta*, indicate that the reading is either ongoing or that it has not (yet) concerned the whole books.

Until the mid-1990's, the pleonastic *montaa* was considered an error by language planning authorities, but in 1995 it was accepted in contexts such as (55), where the partitivity needs to be explicitly indicated (Länsimäki 1995; Nyman 2000; Branch 2001). However, if the aspect is unambiguously of the non-culminating type, then even *monta* can still have the function similar to that of a partitive numeral (56); cf. (57) with a numeral proper.

[12] In a Google search (13.11.2014), the string *rakastaa mon-ta-a* [love.PRS.3SG many-PAR-PAR] produced over 5000 hits, while *rakastaa mon-ta* [many-PAR] produced slightly more than 1000 hits. Though such numbers must be taken with great caution, this might suggest that in Internet language, the double partitive is more common (as expected), but both forms are nevertheless used in the function of the partitive object of the atelic verb *rakastaa* 'love' (which does not take an accusative object outside some resultative constructions such as 'She loved him crazy').

(56) *Eemeli* *rakasta-a* *mon-ta(-a)* *nais-ta.*
Eemeli love-PRS.3SG many-PAR(-PAR) woman-SG.PAR
'Eemeli loves many women.'

(57) *Eemeli* *rakasta-a* *kah-ta* *(*kaksi)* *nais-ta.*
Eemeli love-PRS.3SG two-PAR (*NOM) woman-SG.PAR
'Eemeli loves two women.'

In (56), both *monta* and *montaa* are fine in the function of the partitive object of the atelic verb *rakastaa*. This shows that *monta* has not completely lost its ability to be a functional partitive, if the context unambiguously assigns such a function to it. Example (57) shows that the nominative form of the numeral *kaksi* 'two' is not possible in this context.

What relates this lengthy discussion of *monta* with the partitive A is the fact that *monta* phrases quite frequently occur as transitive subjects, as in examples (58) and (59) below.

(58) *Minu-a* *katsel-i* *mon-ta* *utelias-ta* *silmä-ä.*
1SG-PAR watch-PST.3SG many-PAR curious-SG.PAR eye-SG.PAR
'I was watched by many curious eyes.'

(59) *Mon-ta* *sukupolve-a* *rakens-i* *kirkko-a*
many-PAR generation-SG.PAR build-PST.3SG church-PAR
(näkemättä sitä valmiina)
'Many generations were (= participated in) building the church (without seeing it finished).'

Branch (2001) reports that such uses of *monta* phrases in the function of A were already discussed by linguists at the end of the 19th century, which shows that its reanalysis as a nominative may have been going on for a relatively long time. Such a quantifier which is formally a partitive but functionally a nominative is probably another factor paving the road for quantified partitive phrases to spread into the function of A. Because *monta* is functionally a nominative, I do not consider examples such as (58) and (59) as instances of the partitive A proper. However, their existence must be taken into account as a factor supporting the partitive A.

The constraint discussed in §3, stating that the clause with a partitive A cannot denote a collective accomplishment, seems to hold for *monta* subjects as well. Thus (60), with its accusative object, is understood in the distributive sense where *monta* 'many' has a wide scope over the indefinite object 'house', i.e. that each person has built their own house, whereas (61), with the nominative numeral *sata* 'hundred' has both a collective and a distributive interpretation.

(60) *Mon-ta* *ihmis-tä* *on* *rakenta-nut* *talo-n.*
many-PAR person-SG.PAR have.PRS.3SG build-PRTC house-ACC
'Many people have built a house [each their own].'

(61) *Sata* *ihmis-tä* *on* *rakenta-nut* *talo-n.*
hundred person-SG.PAR have.PRS.3SG build-PRTC house-ACC
'A hundred people have built a/the house [together or each their own].' (C)

The pleonastic partitive *montaa*, like partitive forms of (singular) numerals, cannot occur in the function of the partitive A. Because it is a singular partitive form, its use in existentials is restricted to contexts where it quantifies a mass noun, which must then be understood in a special sense ('many kinds of a substance'); cf. (62). In contrast, the forms with *monta*, as well as nominative numerals, are quite typical in existential S argument NPs (63).

(62) *Tä-ssä* *on* *mon-ta-a* ~ *viit-tä* *kahvi-a.*
here-INE be.PRS.3SG many-PAR-PAR ~ five-PAR coffee-SG.PAR
'Here is coffee of many ~ five kinds.' (C)

(63) *Tä-ssä* *on* *mon-ta* ~ *viisi* *kahvi-a.*
here-INE be.PRS.3SG many-PAR ~ five.NOM coffee-SG.PAR
'Here are many ~ five [portions of] coffee.' (C)

Summing up, in addition to the infinitival constructions discussed in §5, different quantifier phrases "pave the road" for the partitive-marked NP to spread into transitive clauses. A special case of this is the quantifier *monta* 'many', which is formally a singular partitive but has the function of a nominative numeral. However, other quantifying expressions in the plural likewise serve as an analogy to the transitive constructions with the partitive A.

6.3 Quantifiers: interim summary

Quantifying expressions turned out to be common in the occurrences of the partitive A I collected for this study, which suggests that they may play an important role in the spread of partitive NPs into the function of A. The study has demonstrated that both mass ('a lot of') and plurality ('several') types of quantifiers are in use. In more general terms, Finnish partitive NPs with quantifiers seem to have an intermediate status between nominative phrases indicating exhaustive quantification and (unquantified) partitive phrases indicating non-exhaustive quantification. This is clearest if we consider the use of such phrases as grammatical objects (cf. §6.1): partitive NPs with quantifiers behave like accusative (not partitive) objects with respect to the modification of duration by selecting durative modifiers of the type 'in an hour' (inessive-marked in Finnish). On the other hand, the nominative forms of many plurality quantifiers have acquired more specific quantificational meanings (e.g. 'many of the' or 'several sets of') which clearly restrict their use and make the partitive the unmarked option in many contexts.

The partitive-marked quantifier that has developed furthest in this direction is *monta* ('many'), which functionally behaves like a nominative of a cardinal numeral. However, other partitive-marked (plurality) quantifiers may be following this path by replacing

the nominative in some contexts. When taking on these functions typical of nominative (or accusative, in object marking) NPs, the quantified partitive phrases themselves undergo a functional transition and become more similar to nominative/accusative than unquantified partitive NPs.

7 Conclusions

As has become evident in this study, it is difficult to obtain data of the partitive A, which seems to be a rare phenomenon in general, and occurs most typically in registers of unedited written language. Though considered an error by language planning authorities, the partitive A is used at least occasionally, and the examples I have collected, as well as those analyzed by Yli-Vakkuri (1979), do not sound ungrammatical to the native speaker's ear. It seems that the uses of the partitive A concentrate around atelic expressions of low transitivity. This semantic feature partially explains why the object NP is also in the partitive in most cases. Accusative objects seem to be in minority, and if used, they are understood in a distributive sense where each referent of the partitive A (which is practically always in the plural) performs the activity individually. The partitive A seems to be clearly ungrammatical with the accusative object indicating a collective accomplishment.

I have also proposed that there are some grammatical subsystems and constructions that, figuratively speaking, pave the road for the partitive marking to spread into the subject of transitive clauses: 1) decay of verb agreement in clauses with an indefinite, clause-final plural subject (cf. also De Smit 2016); 2) constructions that combine an intransitive finite verb with a transitive infinitive "adverbial", such as the progressive 'be doing' construction, and 3) the system of quantifying expressions where even partitive-marked quantifiers such as *use-i-ta* [several-PL-PAR] 'several' or *sato-j-a* [hundred-PL-PAR] 'hundreds of' indicate a definite quantity. This supports Yli-Vakkuri's (1979) argument that a typical partitive A is not quantitatively non-exhaustive in the way a bare partitive subject is. Furthermore, the nominative forms of these quantifying expressions, which have been recommended by language planning authorities to be used instead of the partitive, have gained narrower definite meanings and thus might evoke implications the speaker does not wish to convey. If such semantic oppositions conventionalize, then the partitive form of such quantifiers may be developing into an unmarked indicator of an indefinite subject.

In sum, the observations suggest that there is a pressure to mark indefinite plural subjects with the partitive not only in existential clauses (which are intransitive) but also in some transitive clauses, i.e. those that indicate an aspectually non-culminating, low-transitivity event. If existential clauses are considered a subtype of intransitive clauses,[13] then it can be generalized that among intransitive clauses the partitive marking concerns S arguments that are indefinite and indicate non-exhaustive quantification of a discourse-new referent (a substance or a multiplicity). Such an option has been missing

[13] In the Finnish tradition, existentials are usually treated apart from both intransitive and transitive clauses, which share many features such as the nominative subject, SV/AV word order, and subject–verb agreement.

from the marking of the A argument in Standard Finnish, even though A arguments can likewise indicate discourse-new multiplicities (as the English indefinite plural in *Several bystanders witnessed the accident*). This may result in an analogical motivation for a similar system of case oppositions to arise in the marking of A arguments (cf. Seržant 2013: 336–338).

The Finnish partitive A fulfills the definition of differential argument (subject) marking presented by Witzlack-Makarevich & Seržant (2018 [this volume]). Their broad definition (cf. also Woolford 2008) states that DAM is "any kind of situation where an argument of a predicate bearing the same generalized semantic role (or macrorole) may be coded in different ways, depending on factors other than the argument role itself". The narrow definition they provide states that DAM is "any kind of situation where an argument of a predicate bearing the same generalized semantic role (or macrorole) may be coded in different ways, depending on factors other than the argument role itself and/or the clausal properties of the predicate such as polarity, TAM, embeddedness, etc." The Finnish partitive A (and obviously also partitive S) seems to fit both definitions. The partitive marking of the S argument, and (as the data discussed in the present paper show) sometimes even the A argument, typically concerns plural forms that are indefinite in two ways (as already argued by Siro 1957): 1) in the notional sense (= they have a discourse-new referent) and 2) in the quantitative sense (= they indicate a non-exhaustive quantity). However, since the presence of a quantifier, which is often partitive-marked itself, seems to be common in NPs with the function of the partitive A, feature 2 seems to concern only a minority of the instances. Considering the potential motivations for a DAM system listed by Witzlack-Makarevich & Seržant (2018), the Finnish Partitive A includes features of both argument-triggered DAM (it concerns indefinite discourse-new plurals) and predicate-triggered DAM (it concerns certain low-transitivity verbs, especially verbs of perception as well as verbs that indicate a locative arrangement such as 'follow' or 'surround').

Occasional uses of the partitive as a marker of the transitive subject have been pointed out in the literature for over a hundred years. In lack of statistical data and a comparable set of unedited written language from an earlier era, it is difficult to say whether this indicates an ongoing change in the marking of the transitive subject. However, as De Smit's (2016) analysis demonstrates, the nominative has been in use in Old Finnish as the case of plural existential S arguments which would take the partitive in present-day Finnish. This suggests that the partitive has been expanding as a marker of the existential S in intransitive clauses during the last few centuries, and there may thus be a tendency to continue its expansion into transitive clauses to mark plural indefinite subjects as well.

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Abbreviations

1	first person	INE	inessive
2	second person	INF	infinitive
3	third person	NEG	negation, negative
ACC	accusative	NOM	nominative
ADE	adessive	PAR	partitive
ALL	allative	PL	plural
DAT	dative	POSS	possessive
DOM	differential object marking	PRS	present
ELA	elative	PTCP	participle
GEN	genitive	PST	past
ILL	illative	SG	singular

References

Branch, Hannele. 2001. "Montaa" kielivirheenä: Näkymättömän käden jäljillä. *Virittäjä* 105(2). 193–215.

De Smit, Merlijn. 2016. Fluid intransitivity in Old Finnish. *Finnisch-ugrische Forschungen* 63(1–3). 153–213.

Hakulinen, Auli & Fred Karlsson. 1979. *Nykysuomen lauseoppia*. Helsinki: Suomalaisen Kirjallisuuden Seura.

Hakulinen, Auli, Maria Vilkuna, Riitta Korhonen, Vesa Koivisto, Tarja Riitta Heinonen & Irja Alho. 2004. *Iso suomen kielioppi*. Helsinki: Suomalaisen Kirjallisuuden Seura.

Heinämäki, Orvokki. 1984. Aspect in Finnish. In Casper de Groot & Hannu Tommola (eds.), *Aspect bound. A voyage into the realm of Germanic, Slavonic and Finno-Ugrian aspectology*, 153–178. Berlin: De Gruyter.

Heinämäki, Orvokki. 1994. Aspect as boundedness in Finnish. In Carl Bache, Hans Basbøll & Carl-Erik Lindberg (eds.), *Tense, aspect and action. Empirical and theoretical contributions to language typology*, 207–234. Berlin: De Gruyter.

Helasvuo, Marja-Liisa. 2001. *Syntax in the making. The emergence of syntactic units in Finnish conversation*. Amsterdam: John Benjamins.

Huumo, Tuomas. 1995. On the position of subject in Finnish and in Estonian. In Riitta Kataja & Kristiina Suikkari (eds.), *XXI Kielitieteen päivät Oulussa 6. 7.5.1994. Acta Universitatis Ouluensis Humaniora B 19*, 79–87. Oulu: University of Oulu.

Huumo, Tuomas. 2003. Incremental existence: The world according to the Finnish existential sentence. *Linguistics* 41(3). 461–493.

Huumo, Tuomas. 2009. Fictive dynamicity, nominal aspect, and the Finnish copulative construction. *Cognitive Linguistics* 20(1). 43–70.

Huumo, Tuomas. 2010. Nominal aspect, quantity, and time: The case of the Finnish object. *Journal of Linguistics* 46(1). 1–43.

Huumo, Tuomas. 2013. On the many faces of incompleteness: Coercion phenomena and the Finnish partitive object. *Folia linguistica* 47(1). 89–111.

Huumo, Tuomas. 2016a. Objektia kvantifioivien paljous- ja lukumääräkvanttorien syntaksia ja semantiikkaa [On the syntax and semantics of mass and number quantifiers of the object in Finnish]. *Virittäjä* 120(4). 517–552.
Huumo, Tuomas. 2016b. S-argumenttia kvantifioivien paljous- ja lukumääräkvanttorien syntaksia ja semantiikkaa [On the syntax and semantics of mass and number quantifiers of the S argument in Finnish]. *Sananjalka* 58. 24–48.
Huumo, Tuomas. 2017. *Moni* or *monta*? The collective vs. Distributive opposition between two forms of the quantifier 'many' in Finnish. *Journal of Estonian and Finno-Ugric Linguistics* 8(2). 7–33.
Huumo, Tuomas & Marja-Liisa Helasvuo. 2015. On the subject of subject in Finnish. In Marja-Liisa Helasvuo & Tuomas Huumo (eds.), *Subjects in constructions – canonical and non-canonical*, 13–42. Amsterdam: John Benjamins.
Huumo, Tuomas & Liina Lindström. 2014. Partitives across constructions: On the range of uses of the Finnish and Estonian "partitive subjects". In Silvia Luraghi & Tuomas Huumo (eds.), *Partitive cases and related categories*, 153–176. Berlin: De Gruyter Mouton.
Ikola, Osmo. 1972. Partitiivi subjektin, objektin ja predikatiivin sijana. *Kielikello* 5. 5–12.
Ikola, Osmo. 1986. *Nykysuomen käsikirja*. 4th edn. Helsinki: Weilin & Göös.
Itkonen, Terho & Sari Maamies. 2007. *Uusi kieliopas*. Helsinki: Kirjayhtymä.
Karttunen, Lauri. 1975. On the syntax of the word *paljon* in Finnish. In Valmen Hallap (ed.), *Congressus tertius internationalis fenno-ugristarum, I: Acta linguistica*, 227–235. Tallinn: Valgus.
Kiparsky, Paul. 1998. Partitive case and aspect. In Wilhelm Geuder & Miriam Butt (eds.), *The projection of arguments: Lexical and compositional factors*, 265–307. Standford: CSLI Publications.
Koptjevskaja-Tamm, Maria & Bernhard Wälchli. 2001. The Circum-Baltic languages. In Östen Dahl & Maria Koptjevskaja-Tamm (eds.), *Circum-Baltic languages. Volume 2: Grammar and typology*, 615–750. Amsterdam: John Benjamins.
Langacker, Ronald W. 2009. *Investigations in Cognitive Grammar*. Berlin: Mouton de Gruyter.
Länsimäki, Maija. 1995. Montaa-partitiivi. *Kielikello* 2. 18–22. http://www.kielikello.fi/index.php?mid=2&pid=11&aid=264.
Markkanen, Raija. 1979. *Tense and aspect in English and Finnish: A contrastive study*. Jyväskylä: Studia Philologica Jyvaskylaensia.
Nikanne, Urpo. 1994. Notes on movement to the Spec(IP) position in Finnish. In Norbert Corver & Henk van Riemsdijk (eds.), *Studies on scrambling. Movement and non-movement approaches to free word-order phenomena*, 431–458. Berlin: De Gruyter.
Nyman, Martti. 2000. Näkymätön käsi ja kielitieteen epistemologia. *Virittäjä* 104. 46–70.
Onikki-Rantajääskö, Tiina. 2005. 3. Infinitiivin inessiivi ja määräpaikkaisuuden arvoitus. In Ilona Herlin & Laura Visapää (eds.), *Elävä kielioppi: Suomen infiniittisten rakenteiden dynamiikkaa*, 173–193. Helsinki: Suomalaisen Kirjallisuuden Seura.
Penttilä, Aarni. 1963. *Suomen kielioppi*. 2 (ed.). Porvoo: WSOY.
Saarimaa, Eemil Arvi. 1967. *Kielenopas*. Porvoo: WSOY.

Sands, Kristina & Lyle Campbell. 2001. Non-canonical subjects and objects in Finnish. In Alexandra Y. Aikhenvald, R. M. W. Dixon & Masayuki Onishi (eds.), *Non-canonical marking of subjects and objects*, 251–305. Amsterdam: John Benjamins.

Schlachter, Wolfgang. 1958. Partitiv und Inkongruenz beim Subjekt des Finnischen. *Finnisch-Ugrische Forschungen* 33. 3–95.

Seržant, Ilja A. 2013. Rise of canonical subjecthood. In Ilja A. Seržant & Leonid Kulikov (eds.), *The diachronic typology of non-prototypical subjects*, 283–310. Amsterdam: John Benjamins.

Seržant, Ilja A. 2015. The Independent Partitive as an Eastern Circum-Baltic isogloss. *Journal of Language Contact* 8(1). 341–418.

Siro, Paavo. 1957. Suomen kielen subjektista kielen rakenteen osana. *Virittäjä* 61(2). 181–190.

Siro, Paavo. 1964. *Suomen kielen lauseoppi*. Helsinki: Tietosanakirja Oy.

Siro, Paavo. 1974. Eksistentiaalilauseen hämähäkinverkkoa. *Virittäjä* 78(1). 35–48.

Tommola, Hannu. 2000. Progressive aspect in Baltic Finnic. In Östen Dahl (ed.), *Tense and aspect in the languages of Europe*, 655–692. Berlin: Mouton de Gruyter.

Tuomikoski, Risto. 1978. Objektinsijaisista määrän adverbiaaleista. *Virittäjä* 82(1). 26–51.

Vilkuna, Maria. 1989. *Free word order in Finnish: Its syntax and discourse functions*. Helsinki: Suomalaisen Kirjallisuuden Seura.

Vilkuna, Marja. 1996. *Suomen lauseopin perusteet*. Helsinki: Edita.

Witzlack-Makarevich, Alena & Ilja A. Seržant. 2018. Differential argument marking: Patterns of variation. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *Diachrony of differential argument marking*, 1–40. Berlin: Language Science Press. DOI:10.5281/zenodo.1228243

Woolford, Ellen. 2008. Differential Subject Marking at argument structure, syntax and PF. In Helen de Hoop & Peter de Swart (eds.), *Differential Subject Marking*, 17–40. Dordrecht: Springer.

Yli-Vakkuri, Valma. 1979. Partitiivisubjektin toiset juuret: Eräs kvantiteetin ilmaisujärjestelmän ilmentymä. In Jussi Kallio, Kaisa Häkkinen & Leena Kytömäki (eds.), *Sanomia. Juhlakirja Eeva Kangasmaa-Minnin 60-vuotispäiväksi 14.4.1979. Publications of the department of Finnish and general linguistics*, vol. 9, 155–192. Turku: University of Turku.

Chapter 16

Some like it transitive: Remarks on verbs of liking and the like in the Saami languages

Seppo Kittilä
University of Helsinki

Jussi Ylikoski
University of Oulu & Sámi University of Applied Sciences

Canonical DOM is rather uncommon in the Saami languages (Uralic), and the only clear instances of this are attested in South Saami where definiteness does determine the coding of objects in the plural. On the other hand, the coding of experiencer verbs (e.g., 'like', 'care' and 'fear') displays variation in this regard across Saami languages. With the North Saami verb *liikot* 'like', for example, the stimulus may appear in the illative, genitive-accusative and locative cases without any major difference in meaning. This has usually been viewed as unwelcome influence from the majority languages (Norwegian, Swedish and Finnish). In this paper, however, we will argue that it is no coincidence that the variation concerns mainly experiencer verbs, and more specifically, we will show that the attested variation can be seen as an uncanonical instance of DOM. First of all, the variation in the coding is not semantically determined in the sense that it does not affect the semantic roles of the relevant arguments, which is typical of canonical DOM as well. Second, differently from canonical instances of DOM, the variation concerns semantic cases instead of structural cases, and the variation is between two non-zero cases, while canonical DOM is between zero and non-zero case. Third, the conditioning factors are different from canonical DOM, since animacy and definiteness do not contribute to the discussed variation in any direct way. Language contact does play an important role in this process, but the pursuit of coherence, the semantic emptiness of the cases, and features of semantic transitivity also make a significant contribution to the variation.

1 Introduction

As is typical of all languages discussed in this volume, instances of canonical differential object marking are attested also in the Saami languages, as illustrated below:

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(1) South Saami (Uralic; Bergsland 1994: 60)

a. *Laara* *treavkah* *dorjeme.*
L. ski.PL(.NOM) make.PST.PTCP
'Laara has made (a pair of) skis.'

b. *Dejtie* *treavkide* *vööjnim.*
it.PL.ACC ski.PL.ACC see.PST.1SG
'I saw the skis.'

As the above examples show, indefinite objects in South Saami bear (zero) nominative coding (1a), while definite objects appear in the accusative (1b). The examples in (1) thus constitute a typical instance of DOM, as the notion is typically understood, even though it should be noted that the variation illustrated in (1) is limited to the plural while canonical DOM concerns also objects in the singular. Moreover, differently from many other languages with DOM, animacy appears to play no role for DOM in South Saami. Instead, the variation in object coding in (1) is determined solely by definiteness.[1] This is in line with the object coding in other Uralic languages (see, e.g., Virtanen 2015 for a discussion of Eastern Mansi).

Even though the examples above can be viewed as a canonical instance of DOM, they do not constitute the most widespread type of variation in the object coding in the Saami languages. Quite the opposite, canonical DOM in the form illustrated in (1) seems to be limited to South Saami only. Much more common across the Saami languages is the kind of variation illustrated in (2) from North Saami:

(2) North Saami (Uralic; personal knowledge)
Vástit *gažaldaga* ~ *gažaldahkii!*
answer.IMP.2SG question.GENACC ~ question.ILL
'Answer the question!'

(3) North Saami (Uralic; personal knowledge)
Itgo *liiko* *gažaldaga* ~ *gažaldahkii* ~ *gažaldagas?*
NEG.2SG.Q like.CNG question.GENACC ~ question.ILL ~ question.LOC
'Don't you like the question?'

As shown above, the object may appear in the (genitive-)accusative, illative and also locative case without any major changes in semantics.[2] In other words, both constructions in (2) mean 'Answer the question!', and the three alternatives in (3) pose the same

[1] As pointed out by Siegl (2012: 208), however, the nominative/accusative DOM in South Saami has not been studied thoroughly. Furthermore, the contemporary object marking seems to differ from that of the language system depicted by earlier grammarians.

[2] In the Saami grammatical tradition, only the (genitive-)accusative (and South Saami nominative plural) are regarded as *object* cases. Semantic cases such as the illative and the locative in analogous functions are usually characterized as *adverbials*. For the purposes of the present paper, all non-nominative arguments of the type seen in (2)–(3) are regarded as *objects* in the sense that they are not subjects and they are parts of the valence of the verbs in question, as it would be somewhat awkward to label freely alternating arguments as either (accusative) *objects* or (illative, locative or elative) *adverbials* on the basis of their external appearance only.

question as to whether the hearer likes the question or not. It is also noteworthy that neither definiteness nor animacy contribute to the attested variation. As for (3), it should be noted that the kind of variation exemplified here is one of the favorite eyesores of Saami language purists, because usually only one of the three alternatives is deemed good North Saami. The variation illustrated above is not limited to North Saami: as the discussion in this paper will show, it is attested in other Saami languages as well. The variation seems to be most common for experiencer verbs (3), which will be the focus of our study. It is, however, important to note that similar phenomena can to some extent be observed for other verbs, such as *vástidit* 'answer' in (2).

There are numerous studies dealing with DOM from different perspectives, as the chapters of this volume also very well show. Most of these studies are characterized by two important common features. First, the variation is between two structural cases, usually a zero-marked nominative (or absolutive) and an explicitly marked accusative (or accusative-dative) case. Second, the great majority of DOM studies restrict the notion to cases where variation in object coding is determined by animacy, definiteness or topicality on the coding of objects. This paper also adds an entry to the already long list of DOM studies, but the type of DOM examined here is clearly different from that usually discussed. First, the typical DOM triggers, namely animacy and definiteness (or topicality), play no role in object coding. Second, the variation is often between semantic cases (e.g., locative and illative), although the accusative partakes in the variation as well. Third, we are dealing with a clear instance of lexically restricted predicate-triggered DOM, in Saami languages attested primarily (yet not exclusively) for experiencer verbs.

Despite the evident differences from typical DOM studies, the variation examined in this paper also resembles canonical DOM in certain respects. The semantic roles of the differently coded objects do not vary in the cases discussed, which can be claimed to be true of canonical DOM as well; in the cases discussed in this paper, the role of the differently coded objects, regardless of their coding, is that of a stimulus. We hope that our study will broaden our perspectives on DOM and help to identify similar phenomena in other languages as well. The number of examples discussed in this paper and attested in Saami languages is not very high, but they nevertheless provide us with clear clues as to what kind of variation we are dealing with.

As noted above, the instances of DOM discussed in this paper differ from the type typically discussed under DOM. The topic is also rather novel to Saami linguistics, where the type of variation illustrated in (2)–(3) is usually understood as unwanted interference from majority languages or language decay (cf., e.g., Vuolab-Lohi 2007: 425; Olthuis 2009: 86–87). In this paper, the problem is approached from a more general perspective. The main features considered here are the effects of language contact, emptiness of semantic cases and tendency towards coherence in marking. In other words, we will show that the variation is not random and not necessarily a result of language decay following from language contact, as is often the view of language purists, but that it can also be given a valid language-internal explanation. Moreover, it is not a coincidence that the variation concerns experiencer verbs and not, for example, highly transitive verbs. It is, however, important to note that DOM is still a rather limited phenomenon in the Saami languages.

It is attested mainly with experiencer verbs, and moreover, it applies only to a small set of these verbs. Despite this, we hope that our paper provides new insights into DOM.

The discussion in this paper is based on the six most widely spoken Saami languages, which are described in the following section. We illustrate and discuss examples of many different experiencer verbs. However, it is not our goal to give a systematic overview of the variation between different verbs; instead, the variety of verbs serves only the purpose of illustrating the nature and limits of the variation under discussion.

The organization of the paper is as follows. §2 discusses the examined Saami languages and their basic argument marking patterns as they are relevant to the discussion in this paper. §3 presents a set of concrete examples of the differential coding of experiencer verbs in Saami languages. In §4, the main theoretical implications of the paper are discussed.[3]

2 The Saami languages and argument marking

The Saami branch of the Uralic language family consists of a chain of closely related languages whose territory extends from the central parts of Norway and Sweden up to the Kola Peninsula of northwest Russia. Of the nine or ten living Saami languages, seven have official literary standards and six of them have several hundred or even thousands of speakers each. The discussion in this paper focuses on data from the following six languages with the most speakers and widest literary use: South Saami (Norway, Sweden), Lule Saami (Norway, Sweden), North Saami (Norway, Sweden, Finland), Aanaar (Inari) Saami (Finland), Skolt Saami (Finland, Russia), and Kildin Saami (Russia). Our data is either drawn from or otherwise based on the literary use of the present-day languages. As the total number of speakers of the Saami languages is less than thirty thousand, all Saami languages are minority languages except in two Norwegian municipalities, where North Saami is the majority language of the local communities. As a consequence, virtually all present-day speakers of Saami languages are bi- or trilingual to some extent, and this naturally affects the minority languages in many ways – argument marking not being an exception.

Not unlike in the other Uralic languages, the morphosyntax of the Saami languages is largely based on the interplay of morphological cases. All Saami languages are explicitly nominative–accusative languages, with the zero-marked nominative for subject arguments and descendants of the Proto-Saami (and ultimately Proto-Uralic) accusative for direct objects. However, the picture is partly blurred by the fact that in the Saami languages east of Lule Saami (including North, Aanaar, Skolt and Kildin Saami), both the original accusative (*-*m*) and genitive (*-*n*) singular case suffixes have been lost, and the two cases have merged into one, the genitive-accusative case, which for most nouns differs from the nominative only by stem-internal differences. Furthermore, the same

[3]We wish to thank the editors, an anonymous reviewer and Nils Øivind Helander for a number of valuable comments on earlier versions of this paper. We also thank Tiina Sanila-Aikio and Eino Koponen for help and discussions on Skolt Saami and Elisabeth Scheller for corresponding help with Kildin Saami.

language border – between Lule Saami in the west and North Saami in the east – witnesses the merger of two local cases in the west: the descendants of the Proto-Saami inessive ('at') and elative ('from') survive in the so-called locative case of the easternmost languages.[4] On the other hand, the genitive–accusative merger is total – affecting both singular and plural forms – in North Saami only, but not in the easternmost languages (including Aanaar, Skolt and Kildin Saami), which have retained the distinction in the plural.[5]

Table 1: The South, Lule and North Saami case systems exemplified with the words for 'fish'

	South Saami		Lule Saami		North Saami		
	Singular	Plural	Singular	Plural	Singular	Plural	
Nominative	*guelie*	*guelieh*	*guolle*	*guole*	*guolli*	*guolit*	Nominative
Accusative	*gueliem*	*guelide*	*guolev*	*guolijt*	*guoli*	*guliid*	Genitive-
Genitive ('of')	*guelien*	*gueliej*	*guole*	*guolij*			accusative
Illative ('to')	*gualan*	*guelide*	*guollái*	*guolijda*	*guollái*	*guliide*	Illative
Inessive ('at')	*guelesne*	*gueline*	*guolen*	*guolijn*	*guolis*	*guliin*	Locative
Elative ('from')	*gueleste*	*guelijste*	*guoles*	*guolijs*			('at; from')
Comitative ('with')	*gueline*	*gueliejgujmie*	*guolijn*	*guolij*	*guliin*	*guliiguin*	Comitative
Essive ('as')	*gueline*		*guollen*		*guollin*		Essive

Individual Saami languages also exhibit various degrees of syncretism within plural case forms and between the plural inessive/locative and singular comitative, for example. In addition, some of the languages make use of additional cases or regressing case-like adverbs labeled as abessives and partitives, but as their functions fall outside the immediate scope of the present paper, they will be omitted in the following description of argument marking in Saami. (For a more comprehensive description of the Saami case markers and their syncretism, see, e.g., Sammallahti 1998: 65–71; Hansson 2007.) For the purposes of the present paper, the common core of the Saami case morphology is presented in Table 1, which exemplifies the case systems in South, Lule and North Saami.

As regards phenomena that can be labeled as differential argument marking, as many as five of the six to eight cases in Table 1 are involved: nominative, (genitive-)accusative,

[4]The Proto-Saami inessive (*-*sna*) and elative (*-*sta*) are cognate with their namesakes in Finnic languages such as Finnish and Estonian (see, e.g., Sammallahti 1998: 66–71, 203). However, in the absence of the so-called external local cases characteristic of Finnic, the Saami cases are also used in most of the functions of the Finnic cases adessive and ablative. As a consequence, the single locative cases in languages like North, Aanaar and Skolt Saami (all spoken in Finland) as well as Kildin Saami roughly correspond to as many as four local cases in Finnish. In the same vein, the Saami illative (*-*sǝn*) is cognate with the Finnic illative (*-*sen*), but is also a functional equivalent of the Finnic allative.

[5]When speaking of the "easternmost Saami languages", we are not taking a stance on whether or not the Saami branch must be strictly divided to two – Western Saami and Eastern Saami with capital letters – along the phonologically significant, but lexically less decisive border between North Saami and Aanaar Saami. For a comprehensive discussion of these issues, see Rydving (2013).

illative, locative (elative) and comitative.[6] Of special interest here is the use of the local cases illative and locative as argument markers whose functions can hardly be distinguished from the direct objects marked with the (genitive-)accusative (and the South Saami plural nominative). Although this paper pays special attention to the internal and mutual variation in Saami argument marking, it is worth emphasizing that in spite of considerable phonological, morphological and lexical variation that makes even the closest Saami languages mutually unintelligible, their morphosyntactic structures are essentially quite similar. In a nutshell, the variation between individual Saami languages is comparable to the variation within the Germanic languages, for example.

The basics of Saami argument marking can be seen in the following examples from South Saami:

(4) South Saami (Uralic; SIKOR)
Gosse aktem gåmmam gaavnedigan akte dejstie guaktijste
when one.ACC woman.ACC find.PST.3DU one it.PL.ELA couple.PL.ELA
laejpieh öösti jih dejtie varki byöpmedi.
bread.PL(.NOM) buy.PST.3SG and it.PL.ACC quickly eat.PST.3SG
'When they (two) found a woman, one of them bought some loaves of bread and ate them quickly.'

(5) South Saami (Uralic; SIKOR)
Daelie die rïektes aaksjoem bøøkti jïh ålmese vedti.
now then real axe.ACC bring.PST.3SG and man.ILL give.PST.3SG
'Then he brought a real axe and gave it to the man.'

(6) South Saami (Uralic; SIKOR)
Månnoeh dutnjien jeehkimen, Læjsa.
1DU 2SG.ILL trust.1DU Læjsa
'We (two) trust you, Læjsa.'

(7) South Saami (Uralic; SIKOR)
Edtjem manne datneste bïlledh juktie im datnem lyjhkh?
shall.1SG 1SG 2SG.ELA fear.INF because NEG.1SG 2SG.ACC like.CNG
'Am I supposed to fear you if I don't like you?'

Explicit subject NPs (present in (6) and (7) are frequently omitted, as the subject participant can often be inferred from the context and the form of the finite verb. As for patients, themes or stimuli of various actions and events such as finding (4), buying (4), eating (4), bringing (5), and liking (7), the object is most often in the accusative. However,

[6] In addition to the genitival functions of the genitive(-accusative) and the spatial ('at') semantics of the inessive/locative, the functions of the essive case are not directly relevant for the present discussion, although the interplay between nominative- and essive-marked arguments and secondary predicates could also be regarded as differential argument marking in the broad sense (cf. Siegl 2017; Ylikoski 2017, and Witzlack-Makarevich & Seržant 2018 [this volume]).

as was already briefly mentioned in the introduction, for plural objects such as loaves of bread, a somewhat classical example of differential object marking is available: accusative plural is used to refer to definite objects, whereas less definite objects may be expressed by the nominative plural. Thus, in (4) 'buying loaves of bread' and 'eating them (= the loaves)' are expressed by the nominative and accusative, respectively. In singular, such objects are always marked by the accusative only. Although this underdescribed phenomenon seen in (1) and (4) would merit a separate study (see, e.g., Wickman 1955: 30–36; Magga & Mattsson Magga 2012: 184–186), it is enough to state here that South Saami seems to be the only Saami language exhibiting differential nominative/accusative object marking (see also example (1) above).

For the purposes of the present paper, however, it is important to note that some verbs take their arguments in other cases, too, such as the local cases illative ('to') and elative ('from'). To begin with, the illatives of all Saami languages could actually also be labeled as *datives*, as in addition to their spatial meaning ('to'), the illatives are the default case for marking recipients such as the man to whom an axe is given in (5). Moreover, the illative-marked noun phrase of (6) as an argument of the verb *jaehkedh* 'believe, trust' is also reminiscent of so-called dative objects in cases such as *ich glaube/vetraue dir* 'I believe/trust you' in German, as the illatives of Saami languages share many functions with the dative in German. Example (7) presents the second person singular pronoun *datne* in two case forms: *datnem* as the accusative object of the verb *lyjhkedh* 'like', but *datneste* as the elative ('from') complement of the verb *bïlledh* 'fear'. While the choice of cases like the ones seen here may have historical and metaphorical connections to the concrete spatial meanings of local cases, from a strictly synchronic perspective we are often dealing with verbs whose argument structures seem to require the use of the elative instead of the default accusative case used for most verbs (*bïlledh* 'fear') or vice versa (*lyjhkedh* 'like').

Many Saami languages show considerable variation as to which cases are used for marking arguments of verbs such as the experiencer verbs for 'trust', 'fear' and 'like' as seen in (6)–(7). While the nominative–accusative differential object marking seen in (4) has a clear semantic function, it is more difficult to recognize possible semantic differences behind what seems to be more arbitrary variation in Saami argument marking. As it turns out, however, an important source of the variation to be described in the following section seems to be the sociopolitical environment of the Saami languages: in spite of relatively uniform morphosyntax, the present-day Saami languages are mostly used by bilinguals whose other languages include nation-state languages as divergent as Norwegian, Swedish, Finnish and Russian. While the Scandinavian (Norwegian and Swedish) influence on Saami syntax is rather uniform, Russian is quite different, and Finnish belongs to the altogether different stock of Uralic languages.

3 Data: experiencer verbs and their coding in Saami (with a special focus on 'like')

In this section, the linguistic coding of experiencer verbs across languages and in Saami languages will be discussed. After briefly commenting on the coding of experiencer verbs from a cross-linguistic perspective, we present some of the semantic features that explain their less transitive coding. The section is devoted to the examination of Saami data, especially focusing on the argument marking of verbs that denote positive emotions such as liking, loving and caring (see also §4.1 further below).

It is received wisdom in linguistics that the coding of experiencer verbs often deviates from the basic transitive pattern of a given language; for example, dative coding of the subject is common with experiencer verbs (see, e.g., Verma & Mohanan 1990 and Aikhenvald et al. 2001). These formal differences from basic transitive constructions of a given language are not random, instead following from the different semantic role assignment of experiencing; experiencer verbs do not involve an agent and a patient, but an experiencer and a stimulus instead. Neither the experiencer nor the stimulus is necessarily affected, while in typical transitive events, the patient must be affected in order to constitute a true patient. It is, however, important to note that experiencer verbs do not constitute a semantically coherent verb class, but there are clear differences in their nature, which is also reflected in their coding. First, for example, in Finnish, the partitive (with verbs like 'love' and 'hate'), elative ('like'), illative ('get bored with'), allative ('get mad at') and also accusative ('see', 'hear') can appear with experiencer verbs. Second, different classes of experiencer verbs differ according to whether the stimulus or the experiencer surfaces as the subject.

With the Finnish verbs noted above, the subject refers to the experiencer, while the differently coded second argument codes the stimulus. However, there are other verbs, such as *miellyttää* 'please', or *pelottaa* 'scare', where the stimulus surfaces as the subject, and the partitively coded object refers to the experiencer. In the same vein, in Saami languages such as North Saami, verbs like *balddihit* 'scare' code the stimulus as a nominative subject and the experiencer as a genitive-accusative object. Finally, there are also verbs such as Finnish *iloita* 'rejoice', where the (elatively coded) stimulus can be seen as a kind of optional oblique that can be left out if the reason for rejoicing is not contextually relevant. Again, the same can be said about Saami verbs like North Saami *illudit* 'rejoice' (cognate of Finnish *iloita*), which will be discussed further below. Consequently, it is rather hard to make any cross-linguistic generalizations about the coding of experiencer verbs apart from the fact they typically somehow deviate from basic transitive constructions. In this paper, the focus is exclusively on experiencer verbs that code the stimulus as the (direct) object. This is very well in line with the goals of the paper, which is to show that there is a kind of differential marking for the objects of experiencer verbs. Taking other types of experiencer verbs into account may distort the results, because the attested variation follows from features that are not relevant to the discussion in this paper.

Argument marking of experiencer verbs has received almost no attention in Saami linguistics *per se*. Except for North Saami, the major Saami language that is spoken by about 90% of all speakers of the Saami languages, grammatical descriptions of most Saami languages contain only little information about argument marking. The general pattern of the existing school grammars (e.g., Spiik 1989; Olthuis 2000; Moshnikoff et al. 2009; Magga & Mattsson Magga 2012) is to state that the object is marked by the accusative case, whereas most other cases function as adverbials. The latter functions are described quite sporadically and impressionistically, though. For example, descriptions of South Saami characterize the use of elative in clauses like (7) as adverbials of cause, whereas some other complement-like elatives have been labeled as partial objects (Bergsland 1994: 60–61, 72; Magga & Mattsson Magga 2012: 186). On the other hand, the identical behavior of the Lule Saami elative with verbs like *ballat* 'fear' (cognate of South Saami *bïlledh* seen in (7)) is explained as part of a larger whole, wherein verbs of fearing are said to co-occur with the object of fear marked by the elative (Spiik 1989: 98). Further still, Nickel and Nickel & Sammallahti (2011: 233, 236, 529–530) describe the analogous use of the North Saami *ballat* 'fear' as an example of verbs that come close to being transitive but govern the locative case instead. However, none of the grammars or other descriptions of Saami syntax have paid significant attention to possible semantic reasons for not using the accusative for all object-like arguments. Additionally, little attention has been paid to the fact that in actual use, many verbs show variation in how the non-subject arguments are coded. The most remarkable exception in this respect is Helander's (2001: 134–143) study of the North Saami illative in which he briefly examines the argument structure of the emotion verbs *áibbašit* 'miss, yearn', *dorvvastit* 'count on, rely on', *duhtat* 'settle for', *jáhkkit* 'believe', *liikot* 'like', *luohttit* 'trust', *oskut* 'believe, have faith' and *suhttat* 'get angry', some of which also show variation between illative arguments and other cases as well as postpositions in their coding of the stimuli. The list could be continued with verbs like *dolkat* 'get fed up', which takes either the illative or the locative, or *illudit* 'rejoice; celebrate' and *heahpanit* 'be ashamed of' with even more variation to be discussed further below. Any comparative studies that would focus on these issues and cover more than one Saami language do not exist, however.

In the following, such variation in argument marking will be described and discussed by examining the use of experiencer verbs denoting liking in six Saami languages. This particular group of verbs shows both language-internal and cross-Saami variation, which makes it suitable for providing novel contributions to our understanding of less typical instances of DOM. Due to the deficiencies and often prescriptive attitudes of existing grammatical descriptions most of the data is drawn from authentic (in part translated) texts made available by the SIKOR corpus at UiT The Arctic University of Norway. Although much of our understanding of South, Lule, North and Aanaar Saami is backed up by comparatively large corpora, this study is predominantly qualitative.[7] As for our un-

[7] With respect to the size of the language communities, the available corpora are quite large. With 21.1 million words for North Saami, 0.8M for Lule Saami and 0.7M for South Saami, they contain approximately one thousand words per one speaker of the languages. As for the 1.3M words for Aanaar Saami, with about 400 speakers, the ratio is even higher.

derstanding of the severely endangered Skolt Saami and Kildin Saami, our observations are more dependent on second-hand sources and elicited information from native and second-language speakers.

The first verb to be examined is the South Saami *lyjhkedh* 'like', an apparently recent loan from Scandinavian languages where especially the Norwegian *like* (and to lesser extent Swedish *lika*) has approximately the same meaning and exhibits similar syntactic behavior. It was already seen in example (7) above that *lyjhkedh* is a transitive verb that takes an accusative object instead of elative or any other local case, for example. Yet fully in line with the general object marking pattern discussed in §2, the plural object is marked with either accusative or nominative, depending on whether its referent is definite (8) or indefinite (9), respectively:

(8) South Saami (Uralic; SIKOR)

Im	*lyjhkh*	*niejtide*	*mah*	*desnie.*
NEG.1SG	like.CNG	girl.PL.ACC	REL.PL	here

'I don't like the girls here.'

(9) South Saami (Uralic; SIKOR)

Dihte	*lyjhkoe*	*åenehks*	*mirhke*	*ålmah,*	*guktie*	*månnoeh,*	*Ajloe*
3SG	like.3SG	short	dark	man.PL.NOM	like	1DU	Ajloe

føørhkedi.
laugh.PST.3SG

'She likes short dark men, like the two of us, Ajloe laughed.'

In a word, *lyjhkedh* behaves just like any normal transitive verb of South Saami. By contrast, in Lule Saami the analogous loan verb *lijkkut* 'like' usually governs the illative case instead. As a matter of fact, grammars and dictionaries present the illative as the only option (Spiik 1989: 97; Kintel 2012 s.v.), but accusative objects also exist. Both alternatives are present simultaneously in (10) where the illative NPs *guolláj* and accusative *dáv gåvåv* could apparently be exchanged with the accusative *guolev* and illative *dán gåvvåj* without a change in meaning:[8]

(10) Lule Saami (Uralic; NuorajTV)

Lijkku	*guolláj?*	*De*	*ham*	*de*	*lijkku*	*dáv*	*gåvåv*	*aj?*
like.2SG	fish.ILL	then	DPT	then	like.2SG	this.ACC	picture.ACC	also

'You like fish? Then you must like this picture too, right?'

However, unlike the nominative/accusative alternation in South Saami, the choice of illative or accusative does not seem to be motivated by either semantic or syntactic factors. Instead, the most plausible explanation for the variation seems to align with the received view on similar variation in North Saami:

[8] In the Lule Saami corpus of approximately 800,000 words (SIKOR), nearly half of the 160 instances of the verb *lijkkut* take an infinitive complement. Of the 88 instances with an NP complement, 80 are in the illative and 8 in the accusative, with no visible differences in meaning or distribution. Both cases are used to refer to singular and plural, animate and inanimate, definite and indefinite referents, for example.

(11) North Saami (Uralic; personal knowledge)

a. *Liikot* *guollái?* *De* *han* *de* *liikot* *dán* *govvii* *maid?*
like.2SG fish.ILL then DPT then like.2SG this.GENACC picture.ILL also

b. *Liikot* *guoli?* *De* *han* *de* *liikot* *dán* *gova* *maid?*
like.2SG fish.GENACC then DPT then like.2SG this.GENACC picture.GENACC also

c. *Liikot* *guolis?* *De* *han* *de* *liikot* *dán* *govas* *maid?*
like.2SG fish.LOC then DPT then like.2SG this.GENACC picture.LOC also

'You like fish? Then you must like this picture too, right?'

For the North Saami *liikot* 'like', as many as three different cases are available.[9] North Saami is the Saami language with not only the most speakers, but also the most grammatical research and language planning. As a consequence, the variation seen in (11a)–(11c) has attracted the attention of both descriptive and prescriptive grammarians. To put it briefly, the use of the illative (11a) is unanimously regarded as the most original North Saami, whereas the use of the genitive-accusative and locative are considered interference from Scandinavian (11b) and Finnish (11c), respectively:

(12) Norwegian (Germanic; personal knowledge)
Liker *du* *fisk?*
like.PRS 2SG fish

(13) Finnish (Uralic; personal knowledge)
Pidätkö *kalasta?*
like.2SG.Q fish.ELA
'Do you like fish?'

The data in (12) and (13) corresponds to the variation in the Saami languages rather directly. However, although continuously rejected by language purists (e.g., Magga 1987: 127; Čállinrávagirji 2003: 87; Vuolab-Lohi 2007: 425), both the genitive-accusative and the locative have accompanied the verb *liikot* for decades if not centuries. It seems that the authenticity of the use of the illative has been taken granted due to the fact that the illative was the most common alternative, and nearly the only alternative in earlier periods. The most detailed discussion on this issue is presented by Helander (2001: 139) whose earliest examples of the "wrong" cases stem from the beginning of the 20th century, and

[9] In accordance with the general patterns of NP morphosyntax (see, e.g., Sammallahti 1998: 100–101), the determiner *dán* (11a)–(11c) remains in the genitive-accusative even when headed by a noun in the illative or locative.

some instances of the genitive-accusative can actually be found already in the folklore recorded and authentic texts composed in the 19th century (see, e.g., Qvigstad 1927: 134, 190; Ylikoski 2016). From the non-prescriptivist point of view adopted by Helander, it is easy to agree that all of the sentences (11a)–(11c) are grammatical North Saami. The difference is that only (11a) seems to be shared by the entire speech community, whereas (11b) is mainly used by Saami-Scandinavian bilinguals and (11c) by Saami-Finnish bilinguals.[10]

The above-mentioned verbs *lyjhkedh* (South Saami), *lijkkut* (Lule Saami) and *liikot* (North Saami) have not been compared with each other earlier, but when this is done, the comparison can be extended up to Aanaar Saami where the etymological and semantic equivalent of these verbs is *lijkkuđ*:

(14) Aanaar Saami (Uralic; SIKOR)
Amahân te mij puoh vissâsávt lijkkup kuálán já rähistep
I.guess DPT 1PL all surely like.1PL fish.ILL and love.1PL
kyele, ko tom jyehi peeivi šiev puurrâmlustoin puurrâp (…)
fish.ACC as it.ACC every day.GEN good appetite.COM eat.1PL
'I guess we all really like fish and love fish, as we eat it every day with great pleasure (…)'

(15) Aanaar Saami (Uralic; SIKOR)
Kreikkaliih iä lijkkum ennuv=gin syemmilijn.
Greek.PL NEG.3PL like.PST.PTCP much=DPT Finn.PL.LOC
'The Greeks did not like Finns that much.'

To begin with, (14) contains two accusative objects: one for the experiencer verb *rähistiđ* 'love' and one for a more concrete transitive verb *puurrâđ* 'eat', and for their part Aanaar Saami does not differ from the languages discussed thus far. However, *lijkkuđ* apparently never takes accusative objects, but it does not remain without variation either: the verb governs the illative *kuálán* 'fish' in (14), but the locative *syemmilijn* 'Finns'

[10]It is noteworthy that the variation exemplified in (11a)–(11c) has never been regarded as anything but full synonymy (Magga 1987: 127; Helander 2001: 139, 141; Čállinrávagirji 2003: 87; Sammallahti 2005: 205; Vuolab-Lohi 2007: 425). As seen in example triplets such as (i) and (ii), the illative, genitive-accusative and locative are used with both animate and inanimate, and both definite and indefinite referents, for example.

(i) North Saami (Uralic; Čállinrávagirji 2003: 87)
Mun liikon dutnje ~ du ~ dus.
1SG like.1SG 2SG.ILL ~ 2SG.GENACC ~ 2SG.LOC
'I like you.'

(ii) North Saami (Uralic; Sammallahti 2005: 205)
Mun in liiko guollái ~ guoli ~ guolis.
1SG NEG.1SG like.CNG fish.ILL ~ fish.GENACC ~ fish.LOC
'I don't like fish.'

in (15). Again, the two variants are in free variation, as it would be equally possible to replace the illative *kuálán* with the locative *kyeleest*, or, vice versa, the locative *syemmilijn* with the illative *syemmiláid*. Furthermore, quite like with North Saami (11a)–(11c), the Aanaar Saami language planners have until recently regarded the use of locative as unwelcome Finnish interference, but according to a recent decision of an Aanaar Saami language planning organ, both alternatives are now acceptable (Olthuis 2009: 86–87).

The easternmost Saami languages such as Skolt Saami and Kildin Saami do not share the Scandinavian loan verb discussed above, nor do we have large corpora for these languages. However, the existing dictionaries and texts support the information provided by our colleagues with intimate knowledge of these languages. In Skolt Saami, the verb *tu´ǩǩeed* 'like' behaves like North Saami *liikot* and Aanaar Saami *lijkkuđ* in governing the locative case as seen in (16) and (17a); neither the accusative, illative nor other cases actually occur in the present-day language, although data from traditional dialects also include examples of accusative objects, as in (17b), which is deemed ungrammatical in today's language:

(16) Skolt Saami (Uralic; Koponen et al. 2010: 97)

Mon	*jiõm*	*tõ´st*	*tu´ǩǩääm*	*ni*	*voo´ps,*	*dõõ´st.*
1SG	NEG.1SG	it.LOC	like.PST.PTCP	not	at.all	it.LOC

'I didn't like that [work] at all.'

(17) Skolt Saami (Uralic; personal knowledge; confirmed by Tiina Sanila-Aikio (17b) from Itkonen 1958: 612; not accepted by present-day speakers)[11]

a. *Tõst jie tu´ǩǩed.*
it.LOC NEG.3PL like.CNG

b. *(*)Tõ´n jie tu´ǩǩed.*
it.ACC NEG.3PL like.CNG

'They don't like it.'

Our last example comes from Kildin Saami, a language that in a way lacks a verb for 'like'. Instead, sentences denoting liking are centered around the verb *miillte* 'please', and the word referring to the stimulus of liking (*tedt laŋŋ* 'this country' in example (18)) functions as the grammatical subject of pleasing, whereas the experiencer is marked with the illative. Alternatively, it would be possible to resort to the transitive verb *šoabše* 'love', which takes the accusative just like the corresponding verbs in apparently all Saami languages (compare example (14) from Aanaar Saami).

(18) Kildin Saami (Uralic; Lindgren 2013: 240)

Я,	*мунн*	*надьеда*	*тэдт*	*ланнь*	*меллт*	*тоннэ.*
ja	*munn*	*naad´eda*	*tedt*	*laŋŋ*	*meellt*	*toŋŋe.*
and	1SG	believe.1SG	this	country	please.3SG	2SG.ILL

'and I believe that you will like this country.'

[11] This claim is based on the data from and judgments by speakers of Skolt Saami in Finland, but the language also has some elderly speakers in Russia.

What is most interesting in Kildin Saami is that the argument structure of *miillte* 'please' (18) is fully the opposite of the most common pattern of the Lule, North and Aanaar Saami verbs *lijkkut* (10), *liikot* (11a) and *lijkkuđ* (14) with which the illative case is used to code the stimulus, not the experiencer of pleasure (liking). On the other hand, as the illative is also the case of recipients and thus in a way the "dative" case of all Saami languages (see, e.g. (5)), the Kildin Saami sentence (18) is conceptually and structurally an instance of a well-known type of dative experiencer sentences.

To summarize, the variation in the coding of liking verbs in the six Saami languages described above can be condensed in Table 2.[12] For the purposes of the present discussion, the focus is on the types of DOM related to the verbs of liking in particular, and the more canonical instances of DOM as seen in the plural object marking of South Saami in general (examples (1a)–(1b) and (4)) are not repeated here.

Table 2: Argument marking of 'liking' in six Saami languages.

South Saami (Norway, Sweden)	*Bïenje*	*lyjhkoe*	*gueliem.*		
Lule Saami (Norway, Sweden)	*Bena*	*lijkku*	*guolev*	*~ guolláj.*	
North Saami (Norway, Sweden, Finland)	*Beana*	*liiko*	*guoli*	*~ guollái*	*~ guolis.*
Aanaar Saami (Finland)	*Peenâ*	*lijkkoo*		*kuálán*	*~ kyeleest.*
Skolt Saami (Finland, Russia)	*Piânnai*	*tu'ǩǩad*	*(*)kue'l*		*~ kue'lest.*
Kildin Saami (Russia)	*Пӗннэ*	*шоабашт*	*кӯлль.*		
	Peenne	*šoabašt*	*kuul'.*		
	dog(.NOM)	like.3SG	fish.ACC	fish.ILL	fish.LOC
	'The dog likes (the) fish.'				

[12] Personal knowledge; Skolt Saami and Kildin Saami examples provided and confirmed by Tiina Sanila-Aikio and Elisabeth Scheller, respectively. For the purpose of visualization, the South Saami example is presented in a slightly marked word order (SVO) instead of the most unmarked SOV order typical of the language (cf. (1), (4), (5), (7)). In cases of variation, the boldface indicates the variants officially acknowledged by language authorities. Kildin Saami *šoabašt* in Table 2 means primarily 'loves'; for the use of the verb *miillte* 'please', see (18) above and (i) below:

(i) Kildin Saami (Uralic; personal knowledge; confirmed by Elisabeth Scheller)

Пеннгэ	*меллт*	*кӯлль.*
Peennge	*meellt*	*kuull'.*
dog.ILL	please.3SG	fish

'The dog likes fish.' (Lit. 'Fish pleases the dog.')

Table 2 also lists the states in which the examined languages – presented in geographical order from southwest to northeast of the Saami territory – are spoken as minority languages. In this connection, a number of facts are worth noting: As for the variation seen in Lule, North and Aanaar Saami, the use of the illative case is considered the most original. Even though public prescriptivist statements about the unwanted influence of majority languages have been presented for Aanaar and North Saami verbs only (e.g., Morottaja 2007: 33; Vuolab-Lohi 2007: 425), it is also quite likely that the use of the accusative in Lule Saami and that of the locative in Skolt Saami are influenced by their respective majority languages. When speaking of verbs of liking, two types of foreign influences are available. As seen in (12), the Norwegian verb *like* follows a nominative–accusative pattern, but so does its closest Swedish equivalent *gilla* 'like', as well as the verb *ljubit´* 'love, like' in Russian, which has long had a considerable influence on Kildin Saami. On the other hand, the use of the Finnish elative – the cognate of the Saami elative/locative – in (13) easily explains the established use of the locative for the liking verbs of all three Saami languages spoken in Finland. To make the role of language contact even more explicit, it can be pointed out that the use of the Kildin Saami *miillte* 'please' in (18) is analogous to that of the Russian *nravit´sja* 'please' (19). However, this verb type falls outside the main scope of the present paper.

(19) Russian (Slavic; personal knowledge)

Я	*надеюсь,*	*что*	*тебе*	*нравится*	*эта*	*страна.*
Ja	*nadejus´,*	*čto*	*tebe*	*nravit´sja*	*eta*	*strana.*
1SG	hope.1SG	COMP	2SG.DAT	please.3SG	this.F	country

'I hope that you will like this country.'

The influence of language contact will be discussed in more detail and with additional examples in §4.2 below. However, it must be noted that the Saami languages also exhibit DOM that cannot be easily explained away by referring only to interference from majority languages. As pointed out by Helander (2001: 140–141), the North Saami *suhttat* 'get angry' may take not only the illative and locative cases, but also a postpositional phrase headed by *ala* 'on(to)', and only the latter alternative can be explained by the influence of the Scandinavian preposition *på* 'on(to)'. Some verbs such as the North Saami *illudit* 'rejoice; celebrate' take not only the illative, locative and genitive-accusative, but also the comitative case. Furthermore, the more than two thousand occurrences of *illudit* 'rejoice; celebrate' in the available North Saami corpus (SIKOR) also include many sentences in which the stimulus of rejoicing is not marked by any of these four cases, but by the postpositions *alde* 'on', *badjel* 'over', *badjelii* 'onto' and *dihte* 'because of'. What is more, occurrences of the verb *heahpanit* 'be ashamed of' are accompanied, in addition to the four above-mentioned cases, by yet another set of postpositions (*alde* 'on', *badjel* 'over', *dihte* 'because of', *beales* 'for, on behalf', *geažil* 'for, on account of' and *ovddas* 'for, in front of') (see also Ylikoski 2016).

To our knowledge, however, language contacts are not the whole story: there are other factors at play here as well. It might also be possible to analyze the rich variation in some verbs such as the North Saami *illudit* 'rejoice; celebrate' and *heahpanit* 'be ashamed

of' as combinations of intransitive predicates and optional obliques denoting the cause or stimulus of the experience. However, multiple patterns of coding the stimulus are generally verb-specific and therefore seem to belong primarily to the realm of argument marking. Needless to say, details and possible preconditions of such phenomena in the syntactic patterns of individual verbs in North Saami and other Saami languages call for further research. The present discussion of a small sample of Saami experiencer verbs is the first attempt to outline some possibilities and perspectives on such endeavors.

4 Discussion

4.1 Preliminaries

In the previous section, we have presented some of the variation in the coding of objects with experiencer verbs in the Saami languages. The variation is best seen as manifestations of DOM, because the marking is not semantically determined in the sense that the semantic roles borne by the affected arguments are maintained (the affected argument retains its role as a stimulus) and the alternation in the marking is not directly determined, but only made possible by the verb (i.e., we are not dealing with variation determined by the inherent semantics of verbs, as we are in the case of experiencer vs. prototypical transitive verbs). The instances discussed here represent restricted predicate-triggered DOM, because the described variation is attested mainly for experiencer verbs. Moreover, the discussed instances of DOM can be claimed to be connected only loosely with definiteness, as there are only a few signs that suggest that the variation may be affected by habitual vs. concrete reading of the constructions in question. The rationale behind the variation differs from that of typical canonical DOM in that the typical triggers of DOM, animacy or definiteness, seem to play no role in the cases discussed in this paper (the possible contribution of definiteness is best seen as a by-product). Finally, the variation is not between two structural cases, but rather concerns semantic cases (and in some instances also postpositions, as mentioned above). In this section, we will discuss the most important contribution of the Saami languages to our understanding of DOM in more detail. Basically, three partly competing factors can be seen that add to our understanding of DOM: language contact, the semantic emptiness of the cases (or other case-like categories) involved in the variation, and the pursuit of coherence.

4.2 Language contact

As noted above, the Saami languages are all minority languages spoken in the northern parts of Finland, Sweden and Norway, as well as the northwesternmost part of Russia. This has the very natural consequence that language contact has influenced and continues to influence the structure of Saami languages in many ways, and argument marking is no exception in this regard. The major results of this contact were illustrated in Table 2 above. Table 2 and the following discussion clearly show how the majority languages have affected the coding of liking verbs in Saami, given that the most original pattern

in Lule, North and Aanaar Saami has been the one in which the stimulus of liking is coded with the illative case, whereas the accusative and locative marking are both new and analogous to the patterns of the majority languages at the same time. It is also important to note that we are not dealing with a transfer of DOM in a language contact situation, but rather contact with different languages has produced DOM for a group of predicates in the minority languages.

To give another example of DOM among the experiencer verbs in Saami languages, Table 3 presents a likewise condensed collection of the major patterns of expressing 'caring' and its participants in five Saami languages. The South Saami verb *pryjjedh* is a relatively recent loan from Norwegian and Swedish (*bry seg/sig*), whereas the Lule Saami *berustit*, North Saami *beroštit*, Aanaar Saami *perustiđ* and Skolt Saami *peersted* all go back to Finnish (*perustaa*).

Table 3: Argument marking of 'caring' in five Saami languages

South Saami	*Bïenje*	*ij*	*pryjjh*	*gueleste*	~ *gueliem*	(~ *guelien*	*bïjre*).
Lule Saami	*Bena*	*ij*	*berusta*	*guoles*	~ *guolev*	(~ *guole*	*birra*).
North Saami	*Beana*	*ii*	*beroš*	*guolis*	~ *guol*i	(~ *guoli*	*birra*).
Aanaar Saami	*Peenâ*	*ii*	*peerust*	*kyeleest.*			
Skolt Saami	*Piânnai*	*ij*	*peerst*	*kue´lest.*			
	dog	NEG.3SG care.CNG fish.ELA/LOC fish.(GEN)ACC fish.GEN(ACC) about					
	'The dog doesn't care about fish.'						

In the Scandinavian languages, the stimulus of 'caring' is coded with the preposition *om* 'about', whereas the Finnish verb governs the elative. It is understandable that Saami languages most commonly use the elative/locative case for caring verbs, too, because this is probably inherited from the Finnish loan original. On the other hand, it is also understandable that the westernmost Saami languages (under Scandinavian influence) occasionally resort to the postposition *bïjre*/*birra* 'about', which largely corresponds to the most abstract functions of the Scandinavian *om*. However, at the same time, the same languages – South, Lule and North Saami – also witness accusative coding that seems likewise absent in Aanaar and Skolt Saami.

It is probably no coincidence that experiencer verbs are the foremost playground of DOM in Saami languages. As noted above, the coding of experiencer verbs often deviates from the basic transitive pattern of a given language in addition to which there is variation in their coding within languages (see examples (11a)–(11c) from Finnish). What makes the coding of experiencer verbs in Saami languages interesting is the fact that contact with structurally different source languages (governing different cases and adpositions) has created a situation where the coding patterns of the source languages mirror the cross-linguistic variation attested within verbs in other languages (e.g. in German 'be cold' governs a dative subject, while 'see' appears in a transitive construction). In contrast to typical cross-linguistic variation in experiencer verbs, yet due to contact with structurally different source languages, similar variation is reflected within

one language and even more so in the group of closely related Saami languages. What is also noteworthy here is that the variation seems most evident and productive for experiencer verbs; other verbs allow it only to a limited degree, if at all. For example, the coding of basic transitive clauses is consistent in the contact languages, because all of them are nominative-accusative languages, even though Norwegian and Swedish do not code A and O[13] using cases like Finnish and Russian do. Consequently, there is no contact-induced variation in the coding of A and O in prototypical transitive clauses, and language contact aids in explaining why obliquely coded arguments have been affected. However, borrowing does not follow automatically nor can it be considered random, since there are many areas of grammar that have remained largely unaffected in the described language contact situations (see, for example, Rießler 2007 for Kildin Saami and Russian). An illustrative example is represented by the Finnish variation between nominative, accusative and partitive in subject and object coding, which has – in spite of occasional translators' and semi-speakers' errors (Magga 1987: 131; Länsman 2009: 78–79) – not gained a significant foothold in any of the three Saami languages spoken in Finland. Moreover, the lack of morphological cases for coding core arguments (characteristic of Scandinavian languages) is not found in any Saami language.

As shown above, contact with the surrounding majority languages provides a rather good explanation for the variation attested in experiencer verbs in the Saami languages, but it is important to distinguish the results of recent language contacts and interference from changes that are due to language contact that has become an established part of the grammar of the modern languages. Although the data presented above may give the impression that the DOM examined here is a recent phenomenon, it has existed in at least North and Aanaar Saami for more than a century (see §3), and thus the variation cannot be seen as random, but rather an entrenched feature of the languages. Somewhat paradoxically, this also underlines the fact that even a seemingly superfluous DOM can be a somewhat stable phenomenon that in itself can be resistant to language change. In other words, this observation is interesting in light of the fact that DOM can be viewed as disturbing the consistency in object coding, but Saami data shows that it can nevertheless be retained through generations.

4.3 Emptiness of semantic cases

As the data discussed in §3 shows, the variation in the O coding (referring to the stimulus) concerns a variety of semantic cases (in addition to the accusative also employed for this function). Semantic cases, as the label implies, differ from syntactic or structural cases (such as the nominative and the accusative) in that they are more directly related to a certain semantic function. Across languages, a variety of semantic cases, such as the dative and different local cases, are used for marking the arguments of experiencer constructions. From the nature of semantic cases it follows that variation between them usually has semantic consequences as well; for example, replacing the allative ('to') with the ablative ('from') typically results in a change in the direction of the denoted instance

[13] A and O are here understood in the spirit of Comrie (1978) and Dixon (1979).

of motion (see also Västi 2012 for a somewhat different discussion of the allative and ablative in Finnish). However, as the discussion in this paper has shown, Saami languages provide us with numerous examples of rather free variation between semantic cases. For example, in the North Saami and Aanaar Saami examples in (11c) and (15), replacing the illative (core meaning 'to') with the locative ('at; from') does not yield any major semantic differences in the reading of the clauses. This means that semantic cases are deprived of their semantic content when they appear with experiencer verbs. These differences reflect the cross-linguistic and also cross-verbal variation in the coding of experiencer verbs rather well, but the variation is manifested within one language and one verb.

One of the main reasons for the loss of semantic content is that with experiencer verbs semantic cases are used for coding arguments that are parts of the verb's valency. In these cases, the arguments are accorded a semantic role directly by the verb, which has the consequence that the exact mechanism used for argument coding becomes less relevant, which renders the attested variation understandable. In the Saami languages, this has led to the loss of semantic contrast between certain semantic cases when they are used for coding objects (and stimuli) of experiencer verbs. The semantic differences are, however, relevant in other contexts, especially when the given cases are used for coding adverbials. From a synchronic point of view, a given language may select the case its contact language employs for coding experiencer verbs without this having any consequences for the reading of the construction. On the other hand, the choice of acceptable cases is determined – or at least allowed – by the argument structure of an individual verb, after all. For example, even though the North Saami verb *illudit* 'rejoice; celebrate' (mentioned at the end of §3) can also code the stimulus using the comitative, such an alternative seems entirely impossible with *liikot* 'like'.

The discussion above also underlines the fact that DOM seems to emerge only if the attested changes do not have any major consequences for the semantic role assignment of the affected argument. In typical cases, the variation is between two structural cases that are inherently void of semantic content, but the data from the Saami languages shows that similar variation is possible also with semantic cases. As the semantic differences between the cases have been neutralized, however, the variation has no semantic consequences. The important feature of experiencer verbs seems to be their differences from the basic transitive construction, i.e. the events (or rather states) denoted by experiencer verbs rank lower for transitivity, which makes it possible for other cases than the (default) accusative cases to be used for their coding. In other words, the exact mechanism or case form used for argument coding appears to be less relevant due to decreased transitivity, which gives rise to DOM for experiencer verbs in Saami languages. Moreover, typical features of transitivity, such as agency and affectedness, are rather irrelevant to experiencer verbs in that the stimuli are usually not affected at all and even though agency does play a role in cases such as 'see' vs. 'look', experiencing is always less agentive and affective than typical transitive actions. This has the consequence that changes in these features cannot account for the attested differences in case marking. These features also make experiencer verbs easy targets for semantically rather void DOM.

Above, the reasons for the rather free variation between semantic cases in the function of coding the O were discussed. However, this might not be the whole story, as there are also cases where the variation is not completely semantically free, but it may have resulted in a slight change in meaning. When asked about a possible semantic difference between accusative and illative in cases such as (11a) and (11b), speakers of North Saami may suggest that the accusative is used for concrete liking of fish (i.e., when eating), while the illative is supposed to refer to a habit of liking fish in general.[14] In other words, the difference between accusative and illative may at least to some extent have a semantic basis, and it is also related to semantic transitivity (habituals rank lower for transitivity, see, e.g., Gerstner-Link 1998), and, as was noted above, definiteness might also play a potential role here, although it is best viewed only as a by-product of the attested variation whose ultimate origins seem to lie in language contacts. It must, however, be noted that authentic text materials do not obviously support the elicited judgments on possible semantic differences, and more research is thus needed on this issue. In this context, it is also relevant to note that some verbs that describe more intense feelings, such as 'love' and 'hate' (e.g., South Saami *iehtsedh*, Lule Saami *iehttset*, North Saami *ráhkistit*, Aanaar Saami *rähistiđ* (cf. (14)), Skolt Saami *rä´ǩsted* and Kildin Saami *šoabpše*, all meaning 'love'), only govern the accusative (and nominative in South Saami), which may lend further support to the higher transitivity associated with the accusative in (11b).

4.4 Coherence in marking

The variation between accusative and semantic cases can also be approached from another perspective. As suggested above, the variation may be related to a slight semantic change in certain cases, but examples like (20) below suggest another reason for this:

(20) North Saami (Uralic; SIKOR)

Nuorran	*diggejin*	*Beatles*	*joavkku.*
young.ESS	dig.PST.1SG	Beatles	group.GENACC

'When I was young, I dug the Beatles.'

The North Saami verb *digget* 'dig' is a new internationalism whose O argument bears accusative coding. In (20), the (genitive-)accusative coding does not necessarily reflect a higher degree of transitivity of "digging" (in comparison to liking, for example). This can be explained in two ways. First, the occurrence of the accusative can be explained by the fact that new loan verbs govern the most common case for O coding, namely the accusative, which is used in typical transitive clauses, and, as has been shown, also appears with certain experiencer verbs. Second, this may be interference from Norwegian, or even English, the ultimate source language for the loan. This, as opposed to the cases

[14] Even though native speaker students of North Saami are often aware of the prescriptive grammarians' view of the "impurity" of accusative objects with *liikot* 'like', Saami-Norwegian bilinguals at the Sámi University of Applied Sciences (Guovdageaidnu) and UiT The Arctic University of Norway (Tromsø) have often, when asked, suggested this kind of semantic nuance between the use of accusative and illative.

discussed above, can be taken as a tendency towards coherence in marking; functionally superfluous variation is usually avoided in favor of a more coherent marking system. This argument is in line with, for example, Barðdal's (see, e.g., Barðdal 2008; 2009) findings on Icelandic and other Germanic languages: in many Germanic languages, the less frequent argument marking patterns have disappeared, since the default nominative–accusative has replaced them.

On the other hand, while the accusative coding of *digget* (20) can nevertheless be also regarded as inheritance of the transitive originals such as Norwegian *digge* and ultimately English *dig*, the accusative objects of the South, Lule and North Saami verbs for 'care' seen in Table 3 seem to be best explained by a language-internal pursuit of coherence in marking – even when neither the etymological background of the verbs nor the predominant patterns of the majority languages seem to promote the use of the accusative. It is notable that the accusative coding of caring verbs coincides with the westernmost Saami languages, in which the accusative coding is at least one of the alternatives for the liking verbs as well (Table 2). In other words, while the accusative objects of Lule Saami *lijkkut* (10) and North Saami *liikot* (11) can be explained as foreign influence, Norwegian *like* in turn may be interpreted as the subsequent model for extending the accusative coding to caring verbs as well.

It is also notable that for some verbs, the multiple outside pressures on minority languages may pull the Saami languages in a new but single direction: A case in point are verbs for 'fear', which, as illustrated in (7) for South Saami, traditionally govern the elative/locative case in the Saami languages. However, it appears that not only the transitive pattern of Norwegian *frykte* and Swedish *frykta* both meaning 'fear', but also the partitive coding of Finnish *pelätä* 'fear' have given the impetus for the emergence of accusative coding in the Saami languages as well (cf. Vuolab-Lohi 2007: 425; Olthuis 2009: 86–87):

(21) North Saami (Uralic; personal knowledge)
Sii *ballet* *guliin* ~ *guliid!*
3PL fear.3PL fish.PL.LOC ~ fish.PL.GENACC
'They are afraid of fish!'

(22) Norwegian (Germanic; personal knowledge)
De *frykter* *fisk!*
3PL fear.3PL fish
'They are afraid of fish!'

(23) Finnish (Uralic; personal knowledge)
He *pelkäävät* *kaloja!*
3PL fear.3PL fish.PL.PTV
'They are afraid of fish!'

Again, the accusative coding for verbs of fearing may be seen as strengthening the tendency towards coherence in marking. As noted above, the coding of the verbs for

'fear' differs from the contact languages in that in Finnish the verb does not govern the accusative, but rather the partitive (23), which is common for many experiencer verbs in Finnish. However, this has resulted in the accusative coding in North Saami, because the language lacks a partitive, and the Finnish partitive can also be seen as a grammatically determined structural case.[15]

4.5 Theoretical implications

In the preceding sections, we have briefly discussed the motivation for the occurrence of DOM in Saami languages. We have suggested that the variation in O coding follows primarily from three different factors, namely language contact, emptiness of semantic cases and tendency towards coherence. In addition, transitivity may play a role in cases such as (11a), where the accusative (instead of the illative) coding may underline the concreteness of the denoted event, which makes the event in question more dynamic and thus more transitive (see, e.g., Givón 1995: 76). In other words, the occurrence of DOM constitutes a rather canonical instance of competing motivations. On one hand, contact with different languages and the semantic emptiness of the cases used for coding experiencer constructions produces variation in the marking, while on the other hand, the dominance of accusative coding especially with new loan verbs may create coherence in marking. Experiencer verbs lend themselves naturally to this kind of variation, because their lower degree of transitivity favors the use of semantic cases for their coding. It is easy for a language to adopt the coding pattern of a surrounding majority language in this kind of case, and in many of the discussed instances, the coding pattern of the majority language is mirrored in the given Saami language. The future will show which of the motivations will be stronger.

Another question related to the data discussed in this paper concerns the emergence of DOM. Recently, Iemmolo (2011) has argued that the occurrence (and emergence) of DOM is best explained by topicality. In other words, topical objects gradually start receiving explicit (non-zero) marking, which eventually results in a fully grammaticalized DOM system. What is interesting from a cross-linguistic perspective is that animacy and definiteness, typically seen as the hallmark features of DOM, are not in any direct way related to the cases discussed in this paper (see also Iemmolo 2011 for a recent discussion based on topicality); the possible effects of definiteness are only indirect. This means that DOM cannot be exhaustively explained by animacy and definiteness (or topicality), but the data from Saami languages provides another kind of view to the development of DOM instead. First of all, the type of DOM examined here appears to be most common within a certain verb class only, namely experiencer verbs. This means that semantics makes an important contribution to its occurrence. As noted numerous times in the pa-

[15] The Saami accusative is also historically directly connected to the Finnish partitive, as the Saami plural accusative ending is cognate to the Finnic plural partitive, and both North Saami *guliid* [fish.PL.GENACC] (21) and Finnish *kaloja* [fish.PL.PTV] (23) thus go back to a common proto-form **kala-j-ta* [fish.PL.PTV] (Sammallahti 1998: 68, 203–206). This is possibly further reflected in the fact that Saami-Finnish bilinguals and Finnish learners of Saami languages often tend to equate the Saami genitive-accusative with the Finnish partitive (Magga 2002: 131; Länsman 2009: 78–79).

per, the coding of experiencer verbs varies both within and across languages. This might be the main reason for the fact that they are so prone to external influences. In principle, the language has no reason to resist the emerging variation, because it is not connected to any major semantic differences. For example, the differences between accusative and illative are not related to any semantic differences in the case of experiencer verbs, because, as noted also above, the affectedness of stimuli is not a relevant feature with them. This is in line with more common manifestations of DOM, where the main consequences of DOM are pragmatic in nature, i.e. they do not affect the semantic roles of arguments.

The data from the Saami languages does not provide us with a clear answer to the question of how and why DOM emerges in more general terms, but it aids us in understanding the circumstances under which it may arise. Favorable conditions are present if the variation is between two structural (such as nominative and accusative) or two semantic cases (such as illative and locative), and the variation is thus not related to any major semantic differences. The differential coding of topical objects also lacks an obvious semantic motivation (see Iemmolo 2011), but with time, the seemingly arbitrary variation in object coding acquires pragmatic functions. On the other hand, animacy effects on the coding of goals, for example, are more dramatic in nature, because we are also dealing with differences in roles of the affected arguments (see Kittilä 2008 for a more detailed discussion). It remains to be seen whether the kind of DOM attested in Saami languages will become more functionally triggered in the future. In any case, it is clear that at this point, the DOM in the Saami languages is predicate-triggered and only time will tell whether it will extend to objects in more general terms, and whether it will give rise to more evident semantic differences between the alternatives that are now best seen as free variation.

Another thing that the data discussed in this paper may shed more light on is the semantic nature of cases used for coding arguments that belong to the valence of a given verb. The typical structural cases, most notably nominative, absolutive, accusative and ergative, are semantically rather void of any specific meaning and usually get their semantic role from the verb. Their use is more directly related to distinguishing between A and O. The DOM discussed in this paper provides us with a somewhat different kind of evidence for the semantic emptiness of these cases, because cases that are prototypically best regarded as semantic behave as structural cases instead. In other words, in the data discussed in this paper, the employed case forms receive their meaning from the verb instead of having independent semantics of their own, even though we are dealing with semantic cases. The object slot is inherently related to a certain kind of semantic role, and the formal requirements outrank the inherent semantics of the employed case forms.

Abbreviations

1	first person	IMP	imperative
2	second person	INF	infinitive
3	third person	LOC	locative
ACC	accusative	NEG	negation
CNG	connegative	NOM	nominative
COMP	complementizer	PL	plural
DPT	discourse particle	PRS	present
DU	dual	PST	past
ELA	elative	PTCP	participle
ESS	essive	PTV	partitive
F	feminine	Q	question marker
GEN	genitive	REL	relative
GENACC	genitive-accusative	SG	singular
ILL	illative		

References

Aikhenvald, Alexandra Y., R. M. W. Dixon & Masayuki Onishi. 2001. *Non-canonical marking of subjects and objects*. Amsterdam: John Benjamins.

Barðdal, Jóhanna. 2008. *Productivity: Evidence from case and argument structure in Icelandic*. Amsterdam: John Benjamins.

Barðdal, Jóhanna. 2009. The development of case in Germanic. In Jóhanna Barðdal & Shobhana L. Chelliah (eds.), *The role of semantic, pragmatic, and discourse factors in the development of case*, 123–159. Amsterdam: John Benjamins.

Bergsland, Knut. 1994. *Sydsamisk grammatikk*. Karasjok: Davvi Girji.

Čállinrávagirji. 2003. *A North Saami writing guide published by Sámediggi – The Sámi Parliament in Norway*. http://sh.pedit.no/web/NettskoleRessurs.axd?id=d451b20e-fb85-4cc7-b68b-b581b230fba6 (10 November, 2014). http://sh.pedit.no/web/NettskoleRessurs.axd?id=d451b20e-fb85-4cc7-b68b-b581b230fba6, accessed 2014-11-10.

Comrie, Bernard. 1978. Ergativity. In Winfred Philipp Lehmann (ed.), *Syntactic typology: Studies in the phenomenology of language*, 329–394. Austin: University of Texas Press.

Dixon, R. M. W. 1979. Ergativity. *Language* 55(1). 59–138.

Gerstner-Link, Claudia. 1998. How transitive are habituals? *Sprachtypologie und Universalienforschung* 51(4). 327–534.

Givón, Talmy. 1995. *Functionalism and grammar*. Amsterdam: John Benjamins. 504.

Hansson, Gunnar Ólafur. 2007. Productive syncretism in Saami inflectional morphology. In Ida Toivonen & Diane Nelson (eds.), *Saami linguistics*, 91–135. Amsterdam: John Benjamins.

Helander, Nils Øivind. 2001. *Ii das šat murrii iige báktái: Davvisámegiela illatiivva geavaheapmi*. Kautokeino: Sámi Instituhtta.

Iemmolo, Giorgio. 2011. *Towards a typological study of differential object marking and differential object indexation*. Pavia: University of Pavia dissertation.

Itkonen, T. I. 1958. *Koltan- ja kuolanlapin sanakirja. Wörterbuch des Kolta- und Kolalappischen. I–II*. Helsinki: Suomalais-Ugrilainen Seura.

Kintel, Anders. 2012. *Julevsáme dárro báhkogirjje*. http://gtweb.uit.no/webdict/ak/smj2nob/index.html (10 November, 2014). http://gtweb.uit.no/webdict/ak/smj2nob/index.html, accessed 2014-11-10.

Kittilä, Seppo. 2008. Animacy effects on differential Goal marking. *Linguistic Typology* 12(2). 245–268.

Koponen, Eino, Jouni Moshnikoff & Satu Moshnikoff. 2010. *Sää´mǩiõll, ä´rbbǩiõll*. Helsinki: Dommjânnmlaž ǩiõli tu´tǩǩeemkõõskõs.

Länsman, Outi. 2009. Oahppiid feaillat čllosiin. In Johanna Ijäs & Nils Øivind Helander (eds.), *Sáhkavuoruin sáhkan. Sámegiela ja sámi girjjálašvuođa muhtin áigeguovdilis dutkanfáttát*, 70–85. Kautokeino: Sámi allaskuvla.

Lindgren, Astrid. 2013. *Tär´enč kukes´suhhk (mārьeнч кукесьсухxк). [Translated from a Russian translation of the Swedish original Pippi Långstrump i Söderhavet by Aleksandra Antonova]*. Murmansk: Rekord.

Magga, Ole Henrik. 1987. Gielladikšun. In Samuli Aikio (ed.), *Sámás 3. Et morsmålkurs i nordsamisk. En modersmålskurs i nordsamiska*, 125–135. Oslo: Tiden Norsk Forlag.

Magga, Ole Henrik & Lajla Mattsson Magga. 2012. *Sørsamisk grammatikk*. Karasjok: Davvi Girji.

Magga, Tuomas. 2002. North Saami and majority languages. In Endre Mørck & Tuomas Magga (eds.), *Samiska i ett nytt årtusende*, 117–134. Copenhagen: Nordiska ministerrådet.

Morottaja, Matti. 2007. *Anarâškielâ ravvuuh*. Helsinki: Kotimaisten kielten tutkimuskeskus.

Moshnikoff, Satu, Jouni Moshnikoff & Eino Koponen. 2009. *Koltansaamen koulukielioppi: Sää´mǩiõl ǩiõllvuä´ppes škoou´li vääras*. Inari: Saamelaiskäräjät/Sää´mte´ǧǧ.

Nickel, Klaus Peter & Pekka Sammallahti. 2011. *Nordsamisk grammatikk*. Karasjok: Davvi Girji.

Olthuis, Marja-Liisa. 2000. *Kielâoppâ. Inarinsaamen kielen kielioppi*. Inari: Sämitigge.

Olthuis, Marja-Liisa. 2009. Mii kirjekielâ lii já maht tot šadda? In Klaas Ruppel (ed.), *Ǯieijâs sanijgijn: čalluuh ucceeblovokielâi čäällimhäämi kevttimist*, 75–89. Helsinki: Päikkieennâm kielâi tutkâmkuávdáš.

Qvigstad, Just. 1927. *Lappiske eventyr og sagn: I: Lappiske eventyr og sagn fra Varanger*. Oslo: Aschehoug.

Rießler, Michael. 2007. Grammatical borrowing in Kildin Saami. In Yaron Matras & Jeanette Sakel (eds.), *Grammatical borrowing in cross-linguistic perspective*, 229–244. Berlin: Mouton de Gruyter.

Rydving, Håkan. 2013. *Words and varieties: Lexical variation in Saami*. Helsinki: Société Finno-Ougrienne.

Sammallahti, Pekka. 1998. *The Saami languages: An introduction*. Kárášjohka: Davvi Girji.

Sammallahti, Pekka. 2005. *Láidehus sámegiela cealkkaoahpa dutkamii*. Kárášjohka: Davvi Girji.

Siegl, Florian. 2012. Strövtåg i umesamiskan. In Eberhard Winkler, Hans-Hermann Bartens & Cornelius Hasselblatt (eds.), *Lapponicae investigationes et uralicae: Festschrift zum 65. Geburtstag von Lars-Gunnar Larsson*, 203–217. Wiesbaden: Harrassowitz.

Siegl, Florian. 2017. The essive in South Saami. In Casper de Groot (ed.), *Uralic essive and the expression of impermanent state*, 185–215. Amsterdam: John Benjamins.

Spiik, Nils Eric. 1989. *Lulesamisk grammatik*. Luleå: Th Blaasværs Forlag.

Västi, Katja. 2012. *Verbittömät tapahtumanilmaukset: Suunnannäyttäjinä LÄHDE- ja KOHDE-konstruktio*. Oulu: University of Oulu dissertation.

Verma, Manindra K. & Karavannur Puthanvettil Mohanan. 1990. *Experiencer subjects in South Asian languages*. Stanford: Stanford Linguistic Association.

Virtanen, Susanna. 2015. *Transitivity in Eastern Mansi: An information structural approach*. Helsinki: University of Helsinki dissertation.

Vuolab-Lohi, Káre. 2007. "Máilmmi alladeamos olmmoš" – Sámegiela giellagáhttema máŋggalágan hástalusat. In Jussi Ylikoski & Ante Aikio (eds.), *Sámit, sánit, sátnehámit. 23 Riepmočála Pekka Sammallahtii miessemánu 21. Beaivve 2007*, 423–429. Helsinki: Suomalais-Ugrilainen Seura.

Wickman, Bo. 1955. *The form of the object in the Uralic languages*. Uppsala: Lundequistska bokhandeln.

Witzlack-Makarevich, Alena & Ilja A. Seržant. 2018. Differential argument marking: Patterns of variation. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *Diachrony of differential argument marking*, 1–40. Berlin: Language Science Press. DOI:10.5281/zenodo.1228243

Ylikoski, Jussi. 2016. Višalingo vel lasihit ahte liikon dus – *oktii fas* liikot-*vearbba birra*. *Sámis* 21. 38–42.

Ylikoski, Jussi. 2017. The essive in North Saami. In Casper de Groot (ed.), *Uralic essive and the expression of impermanent state*, 217–241. Amsterdam: John Benjamins.

Chapter 17

The emergence of differential case marking

Sander Lestrade
Centre for Language Studies, Radboud University

This paper shows that grammatical argument marking need not be inherent to language but can result from language use. For this, a computer model is used that simulates the emergence of differential case marking in artificial protolanguages in which only lexical expressions and very general communicative principles are used. Agents check the expected success of their utterances and initially add lexical ad hoc markers to make the distributions of roles clear if deemed necessary. Such role markers need not be very specific, as they only have to distinguish between maximally two, often very different, predicate roles. Over time, as popular marking solutions become less costly to produce and irrelevant meaning dimensions are removed from their lexical representations, case markers may develop. It is also shown how this development can be impaired if alternative strategies, such as Agent First, are used.

1 Introduction

The goal of this paper is to show that grammatical argument marking need not be inherent to language but can result from language use. Instead of taking a more traditional approach for this, i.e. by tracing strategies from modern languages back to their historical roots, a computer model is used that simulates the emergence of differential case marking in artificial *protolanguages*, languages without a formal grammar.

In the next section, it is explained how the roles of event participants can be communicated in protolanguage. In §3 and §4, the way in which event communication and language change are modeled will be explained. §5 shows the results of the simulation, which will be discussed in §6.

2 Event communication in protolanguage

It seems reasonable to assume that language began as a set of referential expressions only, without any rules of grammar. In this first phase, called *protolanguage* by Bickerton

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(1981), speakers had to use more general communicative principles to communicate who did what to whom. On the basis of present-day language variation, we can hypothesize at least four principles for this: *Typing*, *Grouping*, *AgentFirst*, and *CheckSuccess*. These *protoprinciples* are nothing but simple marking strategies and interpretation heuristics that speakers can be assumed to use in the absence of standard rules of grammar. As will be shown in §5, they do in fact suffice for successful event communication.

2.1 Typing

Typing is the preference of predicate or semantic roles for specific performers (Aristar 1996; 1997). For example, the predicate READ asks for an external argument that is sentient and an internal argument that carries readable information. If an argument sufficiently suits the predicate role that it is assigned, nothing needs to be done to ensure the correct interpretation beyond uttering the forms referring to the concepts. If there is a mismatch, however, the argument needs to be forced into its role in order for the hearer to understand the utterance correctly (cf. Aristar 1996; 1997 for the original account pertaining to semantic case and Lestrade 2010; 2013 for a generalization). The effect of Typing in the argument domain can be seen in the case-marking systems of modern languages in which, for example, only unexpected (subject) role performers are marked, such as *yaga*, 'pig' (Donohue & Donohue 1997).

(1) Fore (Nuclear Trans New Guinea; Scott 1978: 115–116)

a. *Yaga:-wama* *wá* *aegúye.*
pig-ERG man 3SG.OBJ.hit.3SG.SU.IND
'The pig attacks the man.'

b. *Yaga:* *wá* *aegúye.*
pig man 3SG.OBJ.hit.3SG.SU.IND
'The man kills the pig.'

2.2 Grouping

The addition of explicit marking of roles by the speaker of course requires the hearer to combine these markers with the referential expressions whose roles they should make explicit. This involves a simple Grouping principle that says to "interpret together" what stands together (Givón 1995; Jackendoff 2002). Indeed, if one is asked to make sense of the string of words *car green stand in front of house yellow*, most probably one will say that the car is green and the house is yellow, not the other way around. The principle can be also observed in case-marking systems where case concord only takes place if a modifier is separated from its head, as in Warlpiri. If the modifier is adjacent to its head, as in (2a), their grouping follows automatically and need not be marked; if they are separated, as in (2b), the ergative case suffix is duplicated.

(2) Warlpiri (Pama-Nyungan; Hale 1973, cited in Blake 2001: 96)

a. *Tyarntu* *wiri-ngki=tyu* *yarlki-rnu.*
dog big-ERG=1.SG.OBJ bite-PST
'The big dog bit me.'

b. *Tyarntu-ngku=tyu* *yarlki-rnu* *wiri-ngki.*
dog-ERG=1.SG.OBJ bite-PST big-ERG
'The big dog bit me.'

2.3 AgentFirst

Typologists have firmly established the cross-linguistic word-order preference "subject precedes object (S<O)". But Dryer (2013), for example, says that in his study *subject* and *object* are used "in a rather informal semantic sense, to denote the more agent-like and more patient-like elements respectively." More generally, Siewierska (1988: 8) notes that when determining basic word order, linguists often only consider "stylistically neutral, independent, indicative clauses with full noun phrase participants, where the subject is definite, agentive, and human, the object is a definite semantic patient, and the verb represents an action, not a state or an event". This means that word-order generalizations that say that S<O (often) are really about semantic roles (rather than grammatical roles) and claim that the more agentive participant should precede the other one. The AgentFirst principle is sometimes explained through iconicity, an agent prototypically instigates an event that affects a patient and hence the agent part of the event precedes that of the patient in time (DeLancey 1981; Croft 1991: 185; Anderson 2006). Whatever the explanation, even if grammatical notions such as subjects and objects cannot be used, people can assume that John hit Pete if someone said *John hit Pete*. Indeed, this preference can be observed in the speech varieties of second language learners (cf. Klein & Perdue 1997).

2.4 CheckSuccess

Whereas Donohue & Donohue (1997) analyze the differential use of case marking in (1) in terms of Typing, Scott (1978) himself proposes a *global* account. In this analysis, what matters is whether the argument qualifies significantly better for its role than the other argument that could be assigned to it in its stead. This second type of reasoning is subsumed under the CheckSuccess principle, which checks whether an utterance is likely to be interpreted correctly taking into account all possible cues, including the effect of other marking principles. Unlike these other principles, which may or may not be active in a speech community, the CheckSuccess principle is understood to be universal, as the goal of communication is to be understood. In many (theoretical and computational) models, this involves speakers pretending to be hearers to check whether they themselves would get the right meaning (cf. Levelt 1983; Hurford 1989; Zeevat 2000; Steels

2003; Blutner et al. 2006; de Swart 2011). Note that it is hereby assumed that in principle speakers preferably use as little effort as possible and only elaborate if checking shows that a short expression does not suffice (Grice 1975; cf. Lestrade et al. 2016 for a more comprehensive discussion).

As with typing, if deemed necessary, the role distribution is made clear through additional marking. But note that CheckSuccess is more self-restrained: Typing uses additional role marking even if this turns out not to be strictly necessary for communicative success. For example, although goats may not form the best readership, they are still more qualified for it than books, which are much more likely to be read. If a goat is said to read a book, it should be marked according to Typing, but not for CheckSuccess. Whereas much could be said for a Typing scenario (thus reducing the role of economy in grammar and increasing the desire to prevent miscommunication),[1] it is also interesting to see what happens if other protostrategies preempt the use of additional marking.

2.5 Other general principles

When formulating and interpreting an utterance in a protolanguage, the four principles just mentioned can be used. For example, if speakers think the role distribution does not follow from Typing, they can use additional words specifying the verb-specific role of the arguments. The hearer in turn will use these words by Grouping to assign arguments to their roles. In addition to these heuristics for role disambiguation, several other general cognitive and communicative principles are assumed to play a role. Differently from the principles discussed above, they do not contribute to marking the argument structure directly. Instead, they influence the development of strategies with this purpose. These other principles are mentioned only briefly here; a more elaborate discussion follows in §3 and §4.

In the selection of words from the mental lexicon, it is assumed that both frequency and semantic weight play a role (cf. Section §3.2 for the implementation of semantic weight). In real language, the activation threshold is lower for frequent items (Balota & Chumbley 1985); in the model, frequent and semantically "light" items take precedence when the lexicon is searched for an expression.

When utterances are actually produced, frequently used and predictable items are pronounced sloppily (Jurafsky et al. 2001). As hearers change their form representation on the basis of what they hear, forms may subsequently erode over time (Nettle 1999). When words become too short to stand on their own, they are suffixed to the preceding word (or prefixed to the following one, an option that is not explored in the model).

People also seem to keep track of the actual usage of words and may change the meaning representations accordingly (Bybee 2010). If a word is found in a large variety of contexts, the dimensions along which these contexts differ most are removed from the lexical representation of this word.

Finally, in many languages, given information is communicated before new information. This is arguably done to provide some sort of mental anchor for smooth processing.

[1] This possibility was suggested to me by Fred Weerman.

Whereas such information-structuring preferences have grammaticalized completely in a language like Hungarian (É. Kiss 2002), they can be observed as soft constraints too in the speech varieties of second language learners (Klein & Perdue 1997). In the model, *TopicFirst* preposes the topic, after which an anaphoric copy is put directly after the verb for cross-referencing, yielding the equivalents of constructions like *the man, I saw him* (following the proposal of Givón 1995).[2]

3 Modeling communication (in protolanguage)

In Lestrade et al. (2016) the development of differential case marking in protolanguages is simulated too. We show that in communication systems in which initially only very general principles are involved, rules that say that animate objects need to be case-marked can be derived from the automatization of ad hoc repair solutions for imminent communicative failure. There are some limitations to our previous study, however, as suggested by the definition of differential argument marking given by Witzlack-Makarevich & Seržant (2018 [this volume]):

(3) *Differential Argument Marking:*
Any kind of situation where an argument of a predicate bearing the same generalized semantic role (or macrorole) may be coded in different ways, depending on factors other than the argument role itself.

Note that the way in which an argument is coded is left unspecified here. This is done for good reasons, as coding can be achieved in different ways: through word order, indexing, and flagging (or, using more traditional terms for the latter two, *head marking* and *dependent marking*). Although it could be hypothesized that these strategies are mutually exclusive (case marking for example freeing up word order for other uses, as is sometimes claimed; cf. Blake 2001: 15), most languages in fact combine multiple strategies (Lestrade 2015b). Also, the definition does not specify the factors that drive differential argument marking. Again, this is appropriate. Although many studies on differential argument marking focus on animacy, other factors play a role too (in fact, animacy even seems to play a subordinate role cross-linguistically according to Sinnemäki 2014). This means that if we want to understand the (differential) usage of individual strategies, we should take into account the larger argument-marking environment in which they partake. That is, we should consider various marking options and factors.

In the present study, therefore, a more elaborate simulation, viz. *WDWTW*, will be used in which neither the discriminating factor (animacy) nor the solution (flagging of the object) of the communication problem is predefined.

[2] In Lestrade (2015a), it is shown how these cross markers can eventually develop into indexes (agreement markers); in this study, they will largely be ignored.

3.1 The simulation model

WDWTW (for *who does what to whom*) is a cognitively motivated multi-agent model that simulates language use and change.[3] The agents of WDWTW live in a very abstract virtual world, in which their only goal is to communicate successfully. Agents consist of a lexicon of object and action words, a common ground of recently discussed objects, a set of cognitive and communicative principles as discussed in the previous section, and a usage history which keeps track of the contexts in which the words have been used. The lexicon, common ground, and usage history are agent-specific and change over time; the principles are constant and shared by the population.

Agents die after 3000 utterances and procreate at the age of 2250, at which point their lexicon is inherited by (i.e. taught faultlessly to) their offspring, save for minor modifications to the meanings of those words that have not been used until then. Thus, in the present proposal, language change is not so much the result of 'faulty' learning, but rather that of processing constraints (cf. §4). The age of procreation is not meant to be representative: The overlap between generations is kept short to speed up the simulation, while remaining large enough in order for new generations to learn the basic usage patterns from their parents. As the development and maintenance of a conventional lexicon has been successfully modeled elsewhere (e.g. Hurford 1989; Hutchins & Hazlehurst 1995; Steels 1997; Kirby 2000), the present simplifications seem warranted.

The conversation procedure is given in (4). The general idea is that two agents, a speaker and hearer, find themselves in a situation in which multiple events are going on at the same time. The speaker wants to talk about one of these events, for which it formulates an utterance using the protoprinciples available in its speech community. Next, the hearer has to identify which of the events the speaker was talking[4] about. Conversations last between 10 and 30 utterances (for each of which a new situational context is developed on the basis of the (conversation-dependent) common ground).

(4) *Conversation Procedure*

1. Select two agents and randomly create initial common ground
2. Create situational context on the basis of common ground

Speaker:

4. Develop initial proposition for target event
5. Apply protoprinciples to develop proposition further
6. Check expected communicative success and elaborate if necessary
7. Produce utterance

Hearer:

8. Analyze words in utterance
9. Group words into constituents
10. Determine argument structure

[3] Eventually, a user-friendly version is to be included in the CRAN archive. Meanwhile, the codes are available from the author on request. Note that virtually all assumptions can be manipulated through the use of model parameters. The most relevant parameters for present purposes are given in the appendix.

[4] This set up is taken from Steels (2003) and was suggested to me by Simon Kirby.

11. Identify target event
12. Update lexicon, usage history, and common ground of speech participants on the basis of success
13. Switch speech roles and start again at Step 2 or stop.

These steps (save the first and the last, which are self-explanatory) will be discussed in turn below. But as the lexicon serves as the basis for most procedures in (4), I will first explain how the mental lexicon is represented.

3.2 The lexicon and vector comparison

Following Wierzbicka (1996), natural-language concepts can be decomposed into meaning primitives such a CONCRETE, HUMAN, MALE, etc. (cf. also Guiraud 1968). Somewhat similarly, Gärdenfors (2000) argues that concepts are sets of values along different meaning dimensions. Thus, we can think of a cat as something that is time-stable, concrete, alive, four-legged, tailed, etc. Note that whereas the initial meaning dimensions in such characterizations are very general and bisect the world (e.g. time-stability), eventually meaning dimensions become more and more specific in order to single out a concept (e.g. having a tail).

Abstracting away from the quality of the dimensions that organize our mental lexicon, the nominal lexicon of the agents is modeled as a list of randomly generated forms with values along several numerical meaning dimensions (their *vector representation*). Following the observation just made, the dimensions make an increasing number of distinctions (the first five are binary, the next four make nine distinctions; for computational reasons, values are restricted to the 0–1 range). These dimensions may be taken to represent whatever properties are grammatically relevant for the linguistic behavior of words in natural language, but the model does not commit to any such specific interpretation. Table 1 shows six different noun meanings that are specified for nine dimensions.

Table 1: First entries in the noun lexicon

D1	D2	D3	D4	D5	D6	D7	D8	D9	ID	form
1.00	0.00	1.00	1.00	0.00	0.75	0.25	1.00	1.00	1	atadoso
1.00	1.00	0.00	1.00	1.00	0.38	0.38	0.62	0.88	2	nimator
1.00	1.00	0.00	0.00	0.00	0.62	0.50	0.25	0.62	3	umimota
1.00	0.00	1.00	0.00	1.00	1.00	0.12	1.00	0.62	4	isomera
0.00	0.00	1.00	1.00	1.00	0.00	0.25	0.75	0.00	5	enolate
1.00	1.00	1.00	0.00	0.00	0.88	0.75	0.75	0.12	6	romutil

Verbs are specified similarly, as shown in Table 2, with the addition of one or two *perspectival* roles, viz. the *external* and, in the case of a two-place predicate, *internal argument* role (cf. the (Neo-)Davidsonian approach in which an event argument is thought

of as an argument itself, which needs to be characterized accordingly; Davidson 2001; Parsons 1994).[5] These roles are also characterized using vector representations. And here too, one could think of each meaning dimension as one that is grammatically relevant in natural language (±instigating, ±intentional, ±affected, etc.), although these notions have no meaning in the model.

In natural languages, higher perspectival roles (which become the subjects of simple sentences) have a preference for "prominent" features (Dowty 1991; Primus 1999; Yip et al. 1987). For example, the animate and volitional reader and not the inanimate book is the external argument of *to read*. To model this, external role specifications are assigned higher values on average. If we understand high numbers as prominent features, we can thus say that external roles are more prominent than internal ones in the model too.

Table 2: First entries in the verb lexicon (abbreviated). Columns *D1:9* define the action itself, *Ext1:9* characterize the external role, *Int1:9* the internal one.

D1 … D9	Ext1 … Int1	Int9 … type	ID	form
1.00 … 0.50	1.00 … 0.00	0.00 … twoPlace	1	rirunes
1.00 … 0.50	1.00 … 0.00	1.00 … twoPlace	2	amumali
1.00 … 0.75	0.00 … 1.00	0.62 … twoPlace	3	emimano
0.00 … 0.75	0.00 … 0.00	0.38 … twoPlace	4	litaril
1.00 … 1.00	1.00 … 0.00	0.25 … twoPlace	5	adasumu
0.00 … 0.75	1.00 … 1.00	0.12 … twoPlace	6	edesito

Vector representations play an extremely important role in the model, for example in word selection and determining typing scores. The match between two vectors is determined by calculating the average (absolute) difference per meaning dimension, and subtracting this from 1, in which dimensions that are not specified are ignored. Given the range of possible values (0–1), a score of 1 shows a perfect match, a 0 shows maximal deviation.

For concreteness, the typing score of *atadoso* for the external role of *rirunes* is calculated in Table 3. Note that it is thus assumed that the noun and role dimensions correspond to each other. That is, the first dimension of a predicate role concerns the same feature as the first dimension characterizing an argument.

[5]Here, the external argument is understood as the "lexical subject", i.e. the participant whose perspective on the event is taken by the corresponding verb. In a standard declarative sentence (in English), the external argument corresponds to the subject.

It may seem redundant to specify both the action and the roles of its participants. But on the one hand, an event involves more than just the activities of the core arguments (e.g. *cooking* involves heat and pans and is done for the purpose of eating, which does not follow from what the cook and the food themselves "do"). But also, it seems the very same event can be described using different perspectives, which therefore involve different argument roles (cf. *buy* vs. *sell*, *eat* vs. *eat a sandwich*, and *sweep the table* vs. *sweep the crumbs*).

Table 3: The typing score of *atadoso* for the external role of *rirunes*

representation *atadoso*		1	0	1	1	0	.75	.25	1	1
representation *rirunes*		1	1	1	0	0	0	1	.125	0
absolute difference		0	1	0	1	0	.75	.75	.875	1
mean difference	.60									
typing score	.40									

3.3 Step 2: Create a situational context

Events in a situation could simply be generated as a collection of randomly generated numbers, the subsets of which constitute the various event ingredients (i.e. the action and event participants) for which the speaker has to find the best words available. Instead, the lexicon is used as a starting point for this, as it makes sense to assume a link between the meaning of words and the structure of the world. In real life, the classification of the world into the categories that words denote follows from the logic and organization of the world as perceived by the speakers of some language: we coin and maintain words for those meanings that are cognitively and culturally relevant (cf. e.g. Jackendoff 2012 for the same intuition.). We can use this link the other way around in the simulation, generating events by sampling meanings from the lexicon and taking their combinatorial possibilities into consideration. Thus, for transitive events, objects from the common ground are randomly selected to instigate the events. Next, verbs are sampled from the lexicon on the basis of the match between the properties of the objects and the external-role specifications of the verbs. Finally, a second set of objects is sampled from the common ground and from the lexicon on the basis of their match with the internal role of the verb, in which the odds for a new object from the lexicon are 1/6. For intransitive events, a set of objects is sampled from either the common ground or the lexicon with the odds just mentioned, after which verbs are sampled on the basis of the (external) role match. At each step, a certain amount of noise is added, as a result of which "real world" entities are not always perfect instances of "mental representations" and event participants are not always the ideal performers of their roles.

Table 4 shows an (abbreviated) example of a situation in the model. The *V* columns refer to the characteristics of the actions that are ongoing, *A* refers to the referential properties of the more agent-like participants, the *actors*, and *U* refers to those of the 'other' participants, the *undergoers* (after Van Valin 1999). Which grammatical and semantic roles these participants receive depends on the verb that is chosen by the speaker to conceptualize the event, which need not be the same verb that was used to develop it (cf. again the contrast between *buy* and *sell* from Footnote 5). The (5) column identifies the event that is to be communicated.

Table 4: First six events of a situation (abbreviated). *V1:V9* show the properties of the actions, *A1:A9* the referential properties of the actors, *U1:U9* those of the undergoers, while the target column identifies the event of interest.

V1 ... V9	A1 ... A9	U1 ... U9	target
0.00 ... 0.12	0.00 ... 0.50		0
0.00 ... 0.12	0.00 ... 0.25		0
1.00 ... 0.75	1.00 ... 1.00	1.00 ... 0.38	0
1.00 ... 1.00	0.00 ... 1.00	1.00 ... 0.38	0
1.00 ... 0.50	1.00 ... 1.00	0.00 ... 0.50	0
0.00 ... 0.875	1.00 ... 1.00	0.00 ... 0.25	1

3.4 Step 3: Develop initial proposition

The full target event to be communicated in the situation shown in Table 4 is given in (5).

(5) Target event

V1	*V2*	*V3*	*V4*	*V5*	*V6*	*V7*	*V8*	*V9*	*A1*	*A2*	*A3*
0.00	0.00	0.00	0.00	1.00	0.25	0.25	0.375	0.875	1.00	0.00	0.00
A4	*A5*	*A6*	*A7*	*A8*	*A9*	*U1*	*U2*	*U3*	*U4*	*U5*	*U6*	*U7*
1.00	0.00	0.125	0.5	0.875	1.00	0.00	0.00	0.00	1.00	1.00	0.625	0.00
U8	*U9*											
0.875	0.25											

The speaker now first selects referential expressions for the ingredients of the target event, i.e. the action itself and the event participants. Conceptually, it searches for those lexical items that suffice to identify their referents in the situational context (as the expressions have to be sufficiently distinctive given the distractors in the other events). Computationally, it compares the vector representation of the referent with all meaning representations in its lexicon and next checks if the match between the meaning representation of the preferred item is sufficiently distinct from the distractor vectors in the situation (that is, better by at least 0.05).

The order in which items are considered for expression is only partly determined by the vector match. Frequency of use and semantic weight are also taken into consideration. The first factor prefers frequently used forms, the latter "light" meanings, which are specified for less meaning distinctions.[6]

For the target event in (5), the initial proposition is given in (6). As shown by the referential match value (*refMatch*; other values will be discussed when relevant), neither of the nouns perfectly describes their referents, but, apparently, they suffice given the context. Note further that the order of the referential ingredients has been randomized.

[6]For example, if the target object is a 0 1 1 and the only distractors are a 0 1 0 and a 1 1 1, the selected expression at least has to specify the first and the third dimension, but need not represent the second faithfully as it is not distinctive. Thus, if the lexicon contains the lexemes 0 1 1, 0 0 1, and 0 – 1 (in which "–" means not specified), all three could be used successfully, but the third will be preferred because of its lower semantic weight.

(6) Initial proposition

a. **Internal argument**

D1	*D2*	*D3*	*D4*	*D5*	*D6*	*D7*	*D8*	*D9*	*ID*	*form*	*freq*
0	0	0	1	1	0.375	0	0.875	0.125	43	leludor	0

argFreq	*nounFreq*	*verbFreq*	*recency*	*semWeight*	*refMatch*	*collFreq*
0	0	0	51	1	0.9583333	0

topic	*Typing*
1	0.75

b. **External argument**

D1	*D2*	*D3*	*D4*	*D5*	*D6*	*D7*	*D8*	*D9*	*ID*	*form*	*freq*	*argFreq*
1	0	0	1	0	0.25	0.375	0.75	1	50	inideta	0	0

nounFreq	*verbFreq*	*recency*	*semWeight*	*refMatch*	*collFreq*	*topic*
0	0	51	1	0.8472222	0	0

Typing
0.625

c. **Verb**

D1	*D2*	*D3*	*D4*	*D5*	*D6*	*D7*	*D8*	*D9*	*Ext1*	*Ext2*	*Ext3*	*Ext4*
0	0	0	0	1	0.25	0.25	0.375	0.875	0	1	0	1

Ext5	*Ext6*	*Ext7*	*Ext8*	*Ext9*	*Int1*	*Int2*	*Int3*	*Int4*	*Int5*	*Int6*	*Int7*
1	0.125	0.375	0.625	0.875	0	0	0	0	0	0.25	0

Int8	*Int9*	*type*	*ID*	*form*	*freq*	*recency*	*semWeight*
0.875	0.25	twoPlace	126	nulotos	0	51	1

refMatch	*collFreq*	*topic*
1	0	0

3.5 Step 4: Apply protoprinciples

Depending on the protoprinciples that are active in a speech community, various operations are performed at this step. Here, agents from the first generation of three different lineages will be discussed for illustration; in §5, all other possible combinations are discussed.

In the AF lineage, AgentFirst is used as a marking strategy, because of which a speaker puts the actor participant in first position. The actor is understood as performing the more prominent verb role, and as explained in §3.2, higher values stand for prominent features. Thus, as the initial values of the external role of the verb are higher than those of the internal one, the external argument is found to be the actor, and is therefore put in first position.[7] As nothing else changes, the representation is shown in abbreviated form only in (7):

[7] In this comparison, the first few values are deemed more important than the later ones. The dimensions of the two role vectors are compared one by one, starting with the first, and as soon as a difference is found between two corresponding values (the second, in the present example), the vector in which the highest values is attested is considered as the actor role.

(7) **AF proposition**

a. ***External argument***

b. ***Internal argument***

c. ***Verb***

After having placed the actor in first position, a speaker of the AFTF lineage, in which TopicFirst is also active, preposes the topic of the utterance. In addition, an anaphoric copy is added as a verbal marker for cross reference (following Givón 1995). In the initial phases of language development, this cross marker is often the same word as the antecedent (cf. the identical values for marker ID and marker target in (8)), but once pronouns have been developed, more general items can be used for this. As illustrated in the present example, TopicFirst may interfere with AgentFirst. Whenever the undergoer happens to be the topic, it will be put in first position in spite of AgentFirst. In the model, actors are five times more likely to be the topic of communication than undergoers.

(8) **AFTF proposition**

a. ***Internal argument***

b. ***External argument***

c. ***Verb***

…	*intMarkerID*	*intMarker*	*intMarkerTarget*	*intMarkerFreq*
…	43	leludor	43	0

The AFTFTC lineage uses all available marking principles by also including TypeCast, the production instantiation of Typing. The same initial procedure is followed as in the previous lineage (since AgentFirst and TopicFirst apply too). In addition, however, the speaker now considers whether event participants qualify for their roles. If the Typing score is below .7, the speaker searches its noun lexicon to look for the best expression to make this role explicit. As the Typing score of *inideta* in (6) shows, it falls short for its external role. The best expression to remedy this is found to be *rurutis*, which is added to the representation of the external argument (again, only the changes that are made with respect to the initial proposition are shown):

(9) **AFTFTC proposition**

a. ***Internal argument***

b. ***External argument***

…	*markerID*	*marker*	*markerFreq*
…	916	rurutis	0

c. ***Verb***

…	*intMarkerID*	*intMarker*	*intMarkerTarget*	*intMarkerFreq*
…	43	leludor	43	0

3.6 Step 5: Check success and elaborate if necessary

In Step 5, speakers determine whether their derived proposition would be understandable if uttered as such. If the role distribution of the arguments is made explicit by TypeCast or can be told using AgentFirst, communicative success is assumed. If these principles do not apply or lead to the wrong result, speakers check whether the typing score of the arguments for their own roles are distinctively above the scores of the other arguments for these roles. If so, the hearer should be able to derive the meaning nevertheless. If not, a marker is added to make the role of the second argument explicit, where the ambiguity first arises (assuming incremental processing).

When the speaker of the AF lineage checks whether the meaning of its derived proposition would follow sufficiently from the selected combination of lexemes, it assumes that its hearer will use the same AgentFirst principle in interpretation. Also in the AFTFTC lineage no further action is needed, as bad performers were explicitly marked for their role in Step 4 already. The speaker of the AFTF lineage, however, finds out that the hearer cannot derive the intended meaning. Because of the preposed undergoer topic, AgentFirst would lead to the wrong result. As the actor happens to come second, it is again the actor role that has to be made explicit, and the same proposition as in (9) is derived.

3.7 Step 6: Produce the utterance

In principle, speakers simply utter the lexemes present in the derived proposition at this step. However, forms are "pronounced" sloppily if they are frequently and recently used, or predictable in their context (Jurafsky et al. 2001). Words are predictable if they frequently co-occur in specific relations, such as *external-argument-of* (shown by the collostruction value *collFreq* in (6)). Sloppy pronunciation is operationalized by replacing the last vowel/consonant of a word by the preceding vowel/consonant in the alphabet, or removing it altogether if this is no longer possible (in the cases of *a* and *b*). As none of the items in the example above meet the requirements for reduction, none of the forms is reduced. Thus, we arrive at the utterance in (10a) for the AF speaker and at that in (10b) for both the AFTF and AFTFTC speakers.

(10) a. *inideta leludor nulotos*
'Inideta nulotoses leludor.' (AF)

b.

leludor	*inideta*	*rurutis*	*nulotos*	*leludor*
leludor	inideta	nulotoser	nulotos.V	leludor

'Leludor is nulotosed by inideta.' (AFTF/AFTFTC)

3.8 Step 7: Analyze words

Now it is the hearer's turn. First it needs to determine which lexemes it thinks were intended (as the word forms may differ from their representation because of sloppy pronunciation). The agent looks for each form in both its verb and noun lexicon for entries that match best (in terms of the edit distance between the perceived and represented

forms).[8] In order to determine the verb, for each word, the product of the verb match (*verbScore*) and the argument matches of the remaining words is calculated (*nounScore*), resulting in a *verbEvidence* score for that word. In Table 5 the results are shown for the analysis of (10b). The word that yields the best product is understood as the verb, which is (indeed) *nulenod*.

Table 5: Identifying the verb in the AFTF utterance.

form	role	vID	vMatch	vScore	nID	nMatch	nScore	verbEvidence
leludor	?	236	leletad	0.02	43	leludor	1	0.00
inideta	?	439	iniraru	0.04	50	inideta	1	0.00
rurutis	?	205	runisum	0.04	916	rurutis	1	0.00
nulotos	verb	126	nulotos	1.00	690	nulenod	0.04	1.00
leludor	?	236	leletad	0.02	43	leludor	1	0.00

3.9 Step 8: Group words

After identifying the verb, various groupings of the remaining words are possible. Analyses in which words are not assigned a function in the reconstruction under a given grouping analysis (either as an argument or a marker) are discarded. Given the situation in Table 5, there are only two possible groupings. The second word could be a noun marker making the role of the first word explicit, or the third word could be the role marker of the second word (cf. Table 6).

Table 6: Grouping possibilities for AFTF utterance

grouping 1		grouping 2	
form	role	form	role
leludor	argument	leludor	argument
inideta	role marker	inideta	argument
rurutis	argument	rurutis	role marker
nulotos	verb	nulotos	verb
leludor	cross marker	leludor	cross marker

3.10 Step 9: Determine argument structure

Next, for all possible groupings, the argument structure is determined. In all lineages it holds that "morphology" overrules heuristics such as AgentFirst and TypeMatch. That

[8] Editing final characters is considered less costly than editing initial ones in this procedure.

is, arguments are assigned the predicate role with which their markers match best. The match between the verb roles of *nulotos* with the two presumed markers are given in Table 7.

Table 7: Match between markers and predicate roles.

	verb role	
marker	external	internal
inideta	.74	.75
rurutis	.94	.49

When analyzed as a role marker, *inideta* cannot properly distinguish between the two roles, because of which the argument structure cannot yet be determined for the first grouping. *Rurutis*, however, does clearly mark the external role of *nulotos*. It now follows logically that the other argument should have the internal role. Thus, the meaning arrived at given this second grouping is 'Inideta nulotoses leludor.'

After failing to exploit the morphology in the first grouping, hearers of the AFTF and AFTFTC lineage now use the AgentFirst principle to arrive at the interpretation 'Leludor nulotoses rurutis.' Note that they cannot use TopicFirst as an interpretation heuristic, as this says nothing about the predicate role. Instead, the hearers assume that if the first argument were not the agent, a speaker would have made this explicit in Step 5.

3.11 Step 10: Identify target event

For each of the interpretations for the various groupings, the hearer now determines which of the events in the situation matches best by comparing the vector representations of the words with those of the properties of the corresponding referents in the events. Each interpretation is then linked to the event it describes best overall, and the interpretation that results in the combination with the highest score is considered the correct one. Thus, the overall best match of the interpretation 'Inideta nulotoses leludor' is 2.81 with the 16th event in the situation (in which the verb semantics match perfectly, the external argument has a referential match of .85, and the internal argument has a referential match of .96). As the best event match of the interpretation 'leludor nulotoses inideta' is 2.38 only, the former interpretation is preferred. This interpretation does indeed lead to the target event the speaker was trying to point out, hence communication is successful.

3.12 Step 11: Update numbers

If communication is successful, i.e. if the hearer identifies the target event, both agents update the frequency scores in their lexicons. In this, they distinguish between overall and relative frequency. That is, separate scores are kept of the net use of words as referential expressions, noun or verb markers. If, for example, a word is used as a noun marker,

both its total and noun-marker frequency go up by one point, while the argument and verb-marker scores go down by one (with a minimum of zero).

In addition, agents add the words used to their usage history, together with the event ingredient to which they referred or the verb role they marked. Thus, for the noun *inideta* it will be remembered that it has been used for a 1.00 0.00 0.00 1.00 0.00 0.125 0.5 0.875 1.00 (cf. (5) and (6)). Finally, if there was a newly introduced argument noun in the utterance, this is added to their mutual common ground, on the basis of which a situation is generated for the next turn.

4 Modeling language change

Although it is now explained how agents talk with each other, it still needs to be shown how language can change and how argument-marking strategies can develop in the model. For this, grammaticalization principles as proposed by Heine & Kuteva (2007) are implemented. As was shown in §3.2, initially all words are fully specified semantically and have a word length of 7 characters. Over time, however, words can *desemanticize* and *erode*.

Erosion results from frequent use, either in terms of absolute frequency or in specific combinations. As said in §2.5, forms are pronounced sloppily if they are frequently and recently used or predictable (Jurafsky et al. 2001). Sloppy pronunciation does not lead to a change of lexical representation for the agent using the form. If a (younger) agent does not have a firmly established representation yet, however, it will adapt its representation on the basis of what it hears as a result of which word length may change over time. Thus, *rurutis* may become *rurutir*, and eventually *ru*. Erosion stops if a form is two characters long.

If forms become too light to be used independently, they are suffixed to the preceding word in the utterance. In case of noun markers, this is of course the argument whose role they make explicit. The phonological weight of a letter is simply implemented by considering its rank in the alphabet, distinguishing between vowels and consonants: *a* and *b* cost one point, *e* and *c* two, etc. The production effort of a word is then calculated by adding up the ranks of its constituent letters. If the production effort of a word falls below 15, it becomes a suffix.

In addition, a word may extend its denotation range incidentally (due to the lack of a better expression altogether or because a better matching expression is not necessary given the context). Eventually, this extension may become a standard part of a word's meaning, as a result of which it becomes more general. In the model, such desemanticization involves the progressive removal of the meaning dimensions of a word along which most deviation from the lexical representation is found in the usage history. Deletion takes place after certain frequency thresholds have been reached. For a first dimension to be removed, a word has to be used in 1% of utterances. This proportion increases exponentially to 30% of utterances for the last dimension to be removed. Following Bybee (2010), desemanticization can occur within a single generation.

Note that frequently used words are likely to appear in a larger variety of contexts (as variation requires variables). Thus, frequent words can be expected to be more prone to desemanticization. Moreover, as both high frequency and light semantics lead to higher activation (i.e. precedence in the evaluation of candidate expressions; cf. the discussion of word selection in Step 3), the grammaticalization process starts a positive feedback loop. More general words can be applied in an larger variety of contexts, because of which they become even more frequent, because of which they desemanticize even further, because of which they are more often considered, etc.

In this process, there is a crucial difference between words that are used as markers and those that are used as referential expressions: To refer to things in the world, it is often necessary to use explicit terms to distinguish the intended referent from the distractors in the situation. Thus, after being considered as a referential expression, many top-ranked words will be discarded for the very same reason they were considered first: they apply to too many things and thus they are not distinctive enough. But for both role and cross markers, there is always only one distractor: either the other predicate role or the other argument. This means that markers need not be very explicit, and therefore that in many cases, "light" expressions suffice. Thus, markers have a much easier time maintaining their positive feedback loop, which allows them to develop their characteristically short form and general meaning.

5 Simulating the development of differential case marking

The evolution of eight different lineages combining the different marking strategies introduced in §3.5 is studied over 56 generations. The set of strategies used by a lineage can be derived from its name, e.g. the lineage AFTC combines AgentFirst and TypeCast. CheckSuccess is always present, and all other model parameters are kept constant (cf. the appendix).

5.1 Communicative success

First consider the success rates of the different lineages over time in Figure 1. For this, a ninth lineage, TM, is added in which no marking strategy whatsoever is used. TM speakers simply produce the selected referential expressions and hope that their hearers can derive the distribution of roles using type matching. Thus, this lineage establishes a baseline of communicative success given the "predictability of the world". As was shown in §2, events are created on the basis of the meaning representations of the agents, meaning that many utterances need no additional marking: If a book and a woman are involved in a reading event, it is obvious who is doing what. Because of the noise that is added, however, things are not always this clear. The noise level and therefore the world predictability is the same for all lineages.

All lineages initially score well above the TM baseline of roughly 85%, and manage to communicate events (almost) completely successfully throughout. Note that the combined use of TopicFirst and AgentFirst in the AFTF lineage leads to negligible decrease in

communicative success if any. Although, as explained above, TopicFirst impairs the functionality of AgentFirst whenever the Actor happens not to be the topic, such utterances are "repaired" by CheckSuccess.

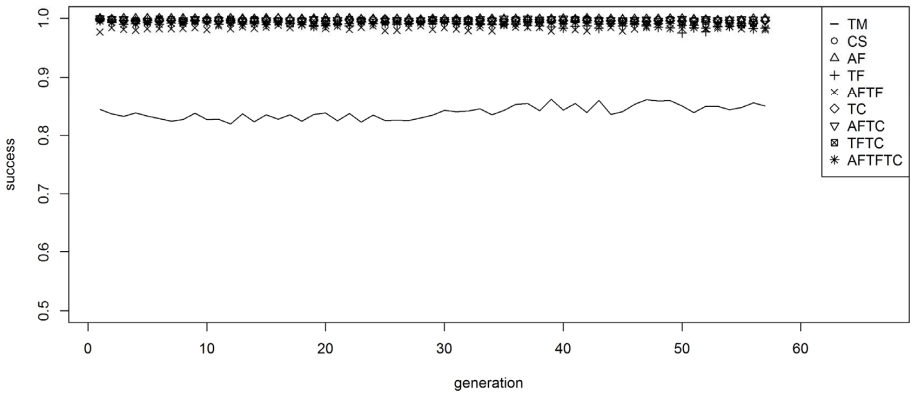

Figure 1: Success rates over time per lineage. Lineage names are abbreviations of the marking principles included (AgentFirst, TopicFirst, TypeCast). The solid line marks the baseline of communicative success given the predictability of the world as evidenced by the TM lineage; CS uses CheckSuccess only.

5.2 Profiles of most frequent words

The goal of the simulation was to see under which conditions differential argument marking emerges. This section will show the profiles of the three most frequently used words in the different lineages after 56 generations, and contrast these with their original representations to see whether they developed into case markers. In natural language, case markers can be characterized as frequently used words with maximally short forms and a very general meaning that mark the relation of an argument with its head. The model equivalents will be recognized as such if they are used to mark the semantic/perspectival role of their host, are specified for a few semantic dimensions only, and have eroded to the extent that they have to be suffixed.

In the tables below, semantic weight (*semWeight*) is the proportion of dimensions that is still specified out of the maximum of nine. Production effort (*prodEff*) shows the production effort of the lexemes. The frequency column (*freq*) shows the total successful use frequency; the *arg*, *noun*, and *verb* variants show net use as argument, noun marker, and verb marker respectively.

Let us first consider the lineages in which only one marking strategy is active (beyond CheckSuccess). Since AgentFirst is a perfectly viable argument marking strategy, no case marking is expected to develop. Indeed, in the AF lineage words are used as referring expressions only, as shown in Table 8.

As explained in §4, most situations require a rather specific expression to distinguish a target object from its distractors, meaning that it is rather hard for a referential expression to grammaticalize. Nevertheless *mamesut/mames* developed into what one could call a pronoun. It lost four meaning dimensions (its semantic weight is 5/9) and 12 production points (going down from 27 to 15), and it is used in more than 10% of utterances.

Table 8: Representations of three most frequent words of the AF lineage. First block: first generation; second block: representations after 56 generations.

ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
624	mamesut	3	3	0	0	27	1
890	anedume	0	0	0	0	18	1
216	dadutin	3	3	0	0	22	1
ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
624	mames	411	411	0	0	15	0.56
890	anedi	70	70	0	0	11	0.89
216	dadut	69	69	0	0	15	0.89

At the other extreme, there is the TypeCast strategy, which uses role marking even if not strictly necessary for communicative success. If anywhere, case marking is expected to develop here. Indeed, *rilamos/rid* was already found to be a convenient marker in the first generation, quickly losing four meaning dimensions (cf. Table 9). After 56 generations, only three dimensions remain. Also, it lost 15 production points, with the result that it now has to be suffixed to its host.

Table 9: Representations of three most frequent words of the TC lineage.

ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
374	rilamos	713	1	511	0	24	0.56
342	omasusu	116	44	0	0	30	0.89
681	onodato	13	11	0	1	25	1
ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
374	rid	1517	0	1121	0	9	0.33
342	omad	388	303	0	0	9	0.56
681	ono	155	129	0	0	12	0.67

A typical example of the usage of *rid* is given in (11) . As the remaining meaning dimensions have a value of zero and high numbers were understood as prominent (cf. §3.2), *ri(d)* is glossed as an undergoer marker.

(11) *omad* *atilomi-ri* *lematim*
3A atilomi-U lematim.V
'It lematims atilomi.'

Like *mames* in the previous lineage, *omad* and *ono* could be considered pronouns. The remaining dimensions of the former all have a value of 1, hence the gloss as Actor in (11); four out of five dimensions of *ono* are zero, which could therefore be considered the object pronoun.

Note that the noun marker *rid* has grammaticalized much further than these referential expressions. Recall from §4 that this is expected indeed. Whereas role markers only have to be minimally distinctive (given only one distractor role), referential expressions have to distinguish between dozens of distractors.

Since noun marking is only used in case of a typing mismatch, we can easily create a minimal pair in which the internal argument is better qualified for its role and hence no marking is necessary. The contrast between (11) and (12) shows the differential nature of the marking system:

(12) *omad* *isosisi* *lematim*
3A isosisi lematim.V
'It lematims isosisi.'

Also in the CS lineage role markers are used, albeit less frequently for reasons explained in §3.5. And here too, case markers eventually develop. As shown in Table 10, the most frequently used word, *unatoru/una*, is mostly used as a noun marker and lost five meaning dimensions and 21 production points, with the result that it can only be used as a suffix.

Table 10: Representations of three most frequent words of the CS lineage.

ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
237	unatoru	102	1	44	0	31	0.89
940	donuran	5	2	1	0	24	1
69	damumil	4	4	0	0	18	1
ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
237	una	715	0	314	0	10	0.44
940	doni	243	235	0	0	12	0.67
69	dami	49	49	0	0	8	0.89

A typical example of the usage of *un(a)* is given in (13). As the remaining meaning dimensions again all have a value of zero, it is glossed as an undergoer marker.

(13) *udeloto* *dosotum-un* *rodones*
udeloto dosotum-U rodones.V
'Udeloto rodoneses dosotum.'

In the CS lineage, noun marking is only used when the role distribution does not follow automatically. Thus, if a minimal pair is created in which the external argument qualifies better for its role than the internal argument, no marking is necessary:

(14) *dadesad* *dosotum* *rodones*
dadesad dosotum rodones.V
'Dadesad rodoneses dosotum.'

The final single-strategy lineage is TF. The results should be similar to those of CS, since TopicFirst is not an argument-marking strategy proper. Indeed, a case marker again develops, viz. *etamo/eta*, which desemanticizes further than the pronoun *rilelod/rid* (Table 11). Note that since preposed topics are cross-referenced by anaphoric expressions, in this lineage verb markers are frequently used too for the development of indexing (see Lestrade 2015a).

Table 11: Representations of three most frequent words of the TF lineage.

ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
22	etamamo	35	0	33	0	21	1
597	iridono	14	0	0	14	24	1
791	rilelod	126	21	38	0	19	0.89
ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
22	eta	1003	0	641	0	10	0.44
597	ira	424	0	0	420	9	0.89
791	rid	329	287	0	0	9	0.56

Combinations of the different strategies lead to predictable results. When any marking strategy is combined with TypeCast (AFTC, TFTC, and AFTFTC), case markers emerge, and when TopicFirst is used, verb markers are frequently used too. The results are shown in Table 13, Table 14, and Table 15.

The only lineage whose results cannot be predicted straightforwardly is AFTF. In principle, TopicFirst may interfere with AgentFirst, meaning that role markers are sometimes necessary. However, since the actor is much more likely than the undergoer to become the topic, in most cases AgentFirst can still be used. In the present setup, the odds for the actor vs. the undergoer to become the topic were kept constant at 5:1. As shown in Table 12, case markers apparently do not develop under these conditions.

Table 12: Representations of three most frequent words of the AFTF lineage.

ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
727	memunus	12	9	0	0	28	1
693	alenidu	8	3	0	0	18	1
641	osoranu	22	11	0	0	29	1
ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
727	memun	512	434	0	0	17	0.44
693	alenida	244	0	0	234	14	0.89
641	osa	108	15	1	0	11	0.78

Table 13: Representations of three most frequent words of the AFTC lineage.

ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
356	tisosar	588	0	448	0	32	0.67
965	onedera	38	30	0	0	19	1
372	mulirol	3	0	3	0	24	1
ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
356	tid	1412	0	912	0	11	0.33
965	ona	240	238	0	0	9	0.67
372	mulil	60	60	0	0	15	0.89

Table 14: Representations of three most frequent words of the TFTC lineage.

ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
206	esusiti	656	0	428	1	32	0.56
6	inomola	11	5	0	0	21	1
998	irutide	20	12	0	0	26	1
ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
206	esa	1621	0	1129	0	9	0.33
6	ina	230	0	0	230	8	1
998	irun	227	227	0	0	17	0.67

Table 15: Representations of three most frequent words of the AFTFTC lineage.

ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
915	esodine	649	3	473	0	22	0.67
584	olalune	2	2	0	0	20	1
341	osutula	9	1	3	0	30	1
ID	form	freq	argFreq	nounFreq	verbFreq	prodEff	semWeight
915	esa	1447	0	903	0	9	0.33
584	ola	352	0	0	342	7	0.89
341	osur	245	237	0	0	20	0.67

6 Discussion

In this paper it was shown how differential case marking emerges in artificial languages in which, initially, only lexical expressions and very general communicative principles are used. This section discusses the main findings and implications, plus some limitations that should be taken into account.

The results suggest that formal means of argument marking, and perhaps grammar more generally, need not be inherent to the language system. Over time, nothing changes in the (cognitive/biological) makeup of the agents. Instead, the language itself adapts to its usage, in a process of *cultural evolution* (Smith & Kirby 2008; Christiansen & Chater 2008). As a result of grammaticalization, popular marking solutions become less costly to produce and irrelevant meaning dimensions are removed from their lexical representations. Thus, case markers eventually develop; i.e. maximally short forms with maximally general meanings that mark an argument for its relation with its head. Importantly, the development of these more grammatical means of expression did not improve or diminish communicative success. In fact, events were communicated successfully throughout the process.

Although it was not shown here, as the model does not yet allow for this, it is easy to imagine how differential case markers extend their domain of application even further to become obligatory for all subject or object arguments. Then, it is no longer evaluated whether a marker is necessary to mark a role for a specific argument, but it is used simply to mark that role for any argument (resulting in *functional overkill*, cf. Durie 1995). The only way to get from the former to the latter, at least in the present model, is when speakers make the generalization that not only deviant arguments are marked, but any argument. Interestingly, unlike the general assumption in the literature, this would mean that wholesale marking is the special, derived case rather than the default as indeed argued for by Sinnemäki (2014). Of course, this does not mean that in still later stages, case marking may not be lost again.

Finally, the simulations show a crucial difference between the grammaticalization potential of markers and referential expressions. Whereas the latter often have to be fairly specific in order to distinguish the intended referent from a large number of distractor objects, for markers there is always only one distractor: either the other predicate role or the other argument. As a result, general expressions more often suffice as markers, which means that they can be used much more frequently, because of which they grammaticalize even further.

Using a computer model implies that there are some obvious limitations to the present study too. An attempt was made to parameterize as many assumptions as possible (cf. the appendix). As the model is rather comprehensive, however, the full parameter space cannot easily be explored. For example, in the simulations it was assumed that the actor was much more likely to be the topic, with the result that AgentFirst could still be used. This seems to make sense, as Comrie (1989) found that the two do indeed generally align. Still, it may be interesting to further explore the interplay between TopicFirst and AgentFirst. Some other assumptions are fundamental to the model. For example, the only source for markers in the model is the nominal lexicon, whereas for example in Chinese, the differential object marker *ba* derives from a verb (Yang 2008: 22).

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Appendix: (Relevant) model parameter settings

```
#dimensionality and distinctionality of meaning representations
  distinctions=c(2,2,2,2,2,9,9,9,9)
#initial word length
  wordLength=7
#alphabet
  vowels=c('a','e','i','o','u'); consonants=c('d','l','m','n','r','s','t')
#lexicon size
  nNouns=999; nVerbs=499
#preference for the external role to combine with higher values
  oddsLinkingHierarchy=2
#amount of referential noise (0--1)
  referenceNoise=.2
#amount of noise in role assignment
  roleNoise=.5
#maximum number of events that are ongoing in speech situation
  nEvents=30
```

```
#preference for actor, \isi{undergoer} and event to be the topic
  roleTopicality=c(100,20,1)
#maximum number of turns conversations consist of
  nTurns=30
#protoprinciples
  checkSuccess=T; solutionMethod='secondArgument'
  typeCast=F; castingThreshold=.7
  agentFirst=F
  topicFirst=F; topicCopy=T
  orderAgentFirstTopicFirst='TA'
#reduction/change
  reductionFrequencyThreshold=20
  reductionCollostructionThreshold=5
  reductionRecencyThreshold=3
  suffixThreshold=15
  distinctiveness=.05
  erosion=T,
  formSetFrequency=3,
  erosionMax=2
  desemanticization=T
  desemanticizationThreshold=.01
  desemanticizationCeiling=.3
  minimalSpecification=2
  desemanticizationMethod='variance'
#life
  deathAge
  procreationAge=.75
```

References

Anderson, John. 2006. *Modern grammars of case*. Oxford: Oxford University Press.

Aristar, Anthony R. 1996. The relationship between Dative and locative: Kuryłowicz's argument from a typological perspective. *Diachronica* XIII(2). 207–224.

Aristar, Anthony R. 1997. Marking and hierarchy. Types and the grammaticalization of case markers. *Studies in Language* 21(2). 313–368.

Balota, David A. & James I. Chumbley. 1985. The locus of word-frequency in the pronunciation task: Lexical access and/or production? *Journal of Memory and Language* 24. 89–106.

Bickerton, Derek. 1981. *Roots of language*. Ann Arbor, MI: Karoma.

Blake, Barry J. 2001. *Case*. 2nd edn. Cambridge: Cambridge University Press.

Blutner, Reinhard, Helen de Hoop & Petra Hendriks. 2006. *Optimal communication*. Stanford: CSLI.

Bybee, Joan. 2010. *Language, usage and cognition*. Cambridge: Cambridge University Press.

Christiansen, Morten H. & Nick Chater. 2008. Language as shaped by the brain. *Behavioral and Brain Sciences* 31(5). 489–509.

Comrie, Bernard. 1989. *Language universals and linguistic typology*. 2nd edn. Chicago: University of Chicago Press.
Croft, William. 1991. *Syntactic categories and grammatical relations. The cognitive organization of information*. Chicago: Chicago University Press.
Davidson, Donald. 2001. The logical form of action sentences (1967). In *Essays on actions and events*, 105–122. Oxford: Clarendon Press.
de Swart, Peter. 2011. Sense and simplicity: Bidirectionality in differential case marking. In Anton Benz & Jason Mattausch (eds.), *Bidirectional Optimality Theory*. Amsterdam: John Benjamins.
DeLancey, Scott. 1981. An interpretation of split ergativity and related patterns. *Language* 57(3). 626–657.
Donohue, Cathryn & Mark Donohue. 1997. Fore case marking. *Language and Linguistics in Melanesia* 28. 69–98.
Dowty, David R. 1991. Thematic proto-roles and argument selection. *Language* 61(3). 547–619.
Dryer, Matthew S. 2013. Order of subject, object and verb. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. http://wals.info/chapter/81.
Durie, Mark. 1995. Towards an understanding of linguistic evolution and the notion 'X has a function Y'. In Werner Abraham, Talmy Givón & Sandra A. Thompson (eds.), *Discourse, grammar and typology: Papers in honor of John W. M. Verhaar*, 275–308. Amsterdam: John Benjamins.
É. Kiss, Katalin. 2002. *The syntax of Hungarian*. Cambridge: Cambridge University Press.
Gärdenfors, Peter. 2000. *Conceptual spaces: The geometry of thought*. Cambridge, MA: MIT Press.
Givón, Talmy. 1995. *Functionalism and grammar*. Amsterdam: John Benjamins. 504.
Grice, H. Paul. 1975. Logic and conversation. In Peter Cole & Jerry L. Morgan (eds.), *Syntax and semantics: Speech acts*, vol. 3, 41–58. New York: Academic Press.
Guiraud, Pierre. 1968. The semic matrices of meaning. *Social Science Information* 7(2). 131–139.
Heine, Bernd & Tania Kuteva. 2007. *The genesis of grammar. A reconstruction*. Oxford: Oxford University Press.
Hurford, James R. 1989. Biological evolution of the Saussurean sign as a component of the language acquisition device. *Lingua* 77(2). 187–222.
Hutchins, Edwin & Brian Hazlehurst. 1995. How to invent a lexicon: The development of shared symbols in interaction. In Nigel Gilbert & Rosaria Conte (eds.), *Artificial societies: The computer simulation of social life*, 157–189. London: UCL Press.
Jackendoff, Ray. 2002. *Foundations of language: Brain, meaning, grammar, evolution*. Oxford: Oxford University Press.
Jackendoff, Ray. 2012. *A user's guide to thought and meaning*. Oxford: Oxford University Press.
Jurafsky, Daniel, Alan Bell, Michelle Gregory & William D. Raymond. 2001. Probabilistic relations between words: Evidence from reduction in lexical production. In Joan By-

beel & Paul Hopper (eds.), *Frequency and the emergence of linguistic structure*, 229–255. Amsterdam: John Benjamins.

Kirby, Simon. 2000. Syntax without natural selection. In Chris Knight, Michael Studdert-Kennedy & James R. Hurford (eds.), *The evolutionary emergence of language. Social function and the origins of linguistic form*, 303–323. Cambridge: Cambridge University Press.

Klein, Wolfgang & Clive Perdue. 1997. The Basic Variety (or: Couldn't natural languages be much simpler?) *Second Language Research* 13(4). 301–347.

Lestrade, Sander. 2010. *The space of case*. Nijmegen: Radboud University Nijmegen dissertation.

Lestrade, Sander. 2013. The optional use of morphological case. *Linguistic Discovery* 11(1). 84–104.

Lestrade, Sander. 2015a. Simulating the development of bound person marking. In Harald R. Baayen, Gerhard Jäger & Marisa Köllner (eds.), *Proceedings of the 6th Conference on Quantitative Investigations in Theoretical Linguistics (QITL-6)*.

Lestrade, Sander. 2015b. The interaction of argument-marking strategies. In Sander Lestrade, Peter de Swart & Lotte Hogeweg (eds.), *Addenda. Artikelen voor Ad Foolen*, 251–256. Nijmegen: Radboud University.

Lestrade, Sander, Geertje van Bergen & Peter de Swart. 2016. On the origin of constraints. In Geraldine Legendre, Michael Putnam, Henriëtte de Swart & Erin Zaroukian (eds.), *Optimality-theoretic syntax, semantics, pragmatics*. Oxford: Oxford University Press.

Levelt, Willem J. M. 1983. Monitoring and self-repair in speech. *Cognition* 14(1). 41–104.

Nettle, Daniel. 1999. *Linguistic diversity*. Oxford: Oxford University Press.

Parsons, Terence. 1994. *Events in the semantics of English: A study in subatomic semantics*. Cambridge, MA: MIT press.

Primus, Beatrice. 1999. *Cases and thematic roles. Ergative, accusative and active*. Tübingen: Niemeyer.

Scott, Graham. 1978. *The Fore language of Papua New Guinea*. Canberra: Pacific Linguistics.

Siewierska, Anna. 1988. *Word order rules*. London: Croom Helm.

Sinnemäki, Kaius. 2014. A typological perspective on Differential Object Marking. *Linguistics* 52(2). 281–313.

Smith, Kenneth D. & Simon Kirby. 2008. Cultural evolution: Implications for understanding the human language faculty and its evolution. *Philosophical Transactions of the Royal Society B* 363. 3591–3603.

Steels, Luc. 1997. Constructing and sharing perceptual distinctions. In *Machine learning: ECML-97*, 4–13. Berlin: Springer.

Steels, Luc. 2003. Language re-entrance and the inner voice. *Journal of Consciousness Studies* 10(4–5). 173–185.

Van Valin, Robert D. Jr. 1999. Generalized semantic roles and the syntax-semantics interface. In Francis Corblin, Cramen Dobrovie-Sorin & Jean-Marie Marandin (eds.), *Empirical issues in formal syntax and semantics 2*, 373–389. The Hague: Thesus.

Wierzbicka, Anna. 1996. *Semantics: Primes and universals*. Oxford: Oxford University Press.

Witzlack-Makarevich, Alena & Ilja A. Seržant. 2018. Differential argument marking: Patterns of variation. In Ilja A. Seržant & Alena Witzlack-Makarevich (eds.), *Diachrony of differential argument marking*, 1–40. Berlin: Language Science Press. DOI:10.5281/zenodo.1228243

Yang, Ning. 2008. *The indefinite object in Mandarin Chinese: Its marking, interpretation and acquisition*. Nijmegen: Radboud University Nijmegen dissertation.

Yip, Moira, Joan Maling & Ray Jackendoff. 1987. Case in tiers. *Language* 63(2). 217–250.

Zeevat, Henk. 2000. The asymmetry of Optimality Theoretic syntax and semantics. *Journal of Semantics* 17(3). 243–262.

Chapter 18

Reassessing scale effects on differential case marking: Methodological, conceptual and theoretical issues in the quest for a universal

Karsten Schmidtke-Bode
Leipzig University

Natalia Levshina
Leipzig University

It is widely believed that when differential case marking depends on the referential properties of the NP in question, it is governed by a well-defined hierarchy or scale of referential categories, and that the resulting systematicity is one of the most robust generalizations in linguistic typology. This view has recently been called into question, with Sinnemäki (2014) and especially Bickel, Witzlack-Makarevich & Zakharko (2015) claiming that there is now firm typological evidence against such universal scale effects. Since these papers are based on the largest world-wide databases compiled so far, their results are likely to be taken as the current state of the field. In the present paper, we re-examine Bickel, Witzlack-Makarevich & Zakharko's (2015) data from a different perspective and re-evaluate their negative conclusions: First, we complement their analysis in terms of diachronic "family biases" by a more direct inspection of the raw data and an alternative statistical model, both of which afford a clearer understanding of where and how exactly the predicted scale effects are violated. Proceeding from this, we argue for the existence of universal scale effects on case marking, and we embed this argument in a more general discussion on current methodological, conceptual and theoretical issues in postulating these effects.

1 Introduction

An important discovery of typological research is that differential argument marking (DAM) is systematically related to what we may call the "referential properties" of the argument in question. As outlined and exemplified in the introductory article to the

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present volume, these comprise animacy, definiteness, specificity, nominality, person, kinship and discourse-pragmatic prominence (e.g. topicality). In comparative research since Silverstein (1976), it has been argued that contrasts in referential properties (e.g. animate-inanimate) can be arranged into an implicational hierarchy or scale that predicts asymmetries in argument marking.[1] Two versions of this referential scale are given in (1)[2], and their classic predictions for case marking follow in (2):

(1) a. "extended animacy hierarchy" (Croft 2003: 130)
1,2 Pro > 3 Pro > proper noun > human common noun > non-human animate common noun > inanimate common noun

b. "individuation scale" (Lazard 1998: 220)
pronoun > human definite > human indefinite/nonhuman definite > nonhuman indefinite > indefinite non-specific

(2) a. If a P argument is unmarked for case for a given referential category in (1a) or (1b), it will also be unmarked for case for all categories to the right.

b. If an A argument is unmarked for case for a given referential category in (1a) or (1b), it will also be unmarked for case for all categories to the left.

The generalizations in (2) have also been referred to as "scale effects" (Bickel, Witzlack-Makarevich & Zakharko 2015, henceforth BWZ) or "referential effects" (e.g. van Lier 2012) on the distribution of overt case marking. With the compilation of large cross-linguistic databases, it has recently become possible to subject these generalizations to thorough empirical evaluation. And so far, the resulting assessments have been strikingly negative: Thus both Sinnemäki (2014) and BWZ identify some clear areal signatures of DAM in case marking, so that the effect might be "first and foremost a pattern prone to diffusion" (BWZ: 40). When controlling for such areal dependencies, Bickel and his collaborators have argued that there is no evidence for universal effects of the person scale on indexation (Bickel, Witzlack-Makarevich, Zakharko & Iemmolo 2015; Witzlack-Makarevich et al. 2016) and that there is, in fact, direct "evidence *against* universal effects of referential scales on case alignment" (cf. the title of BWZ).

Importantly in the context of the present volume, Bickel, Witzlack-Makarevich & Zakharko's (2015) assessment is based on the estimation of diachronic "family biases" from synchronic data (Bickel 2011; 2013). In a nutshell, the argument is that when language families produce new generations of offspring, they do not systematically develop into the directions predicted by (1) and (2): Some families are internally diverse with regard to these predictions, and among those that are significantly biased towards certain scale effects on case marking, there is always a substantial number of families that are biased

[1] The term "asymmetric" is adopted from de Hoop & Malchukov (2008) and refers to the kind of differential argument marking in which an overt case exponent alternates with zero marking. We will return to the notion of "markedness" (and a different way of operationalizing asymmetric case marking) in §2.1 below.

[2] Further incarnations of the same idea include, for example, Comrie's (1981) "animacy hierarchy", DeLancey's (1981) "empathy hierarchy", Bickel's (1999) "indexability hierarchy" and Shibatani's (2006) "relevance hierarchy".

in the opposite direction. In other words, BWZ's finding is that the predictions in (2) are violated too often to qualify as a principle that universally guides the diachronic development of language families.[3] It is not our purpose in this paper to take issue with this specific method. However, given that BWZ's conclusion challenges of one of the most prominent and widely cited generalizations in typology since the 1970s, we would like to discuss and expand the empirical assessment of scale effects on case marking.

Specifically, we intend to do three things: Firstly, in the absence of actual diachronic data for most of the world's language families, the most direct evidence for typological patterns we have inevitably lies in the synchronic data themselves. Therefore, we would first like to be clear about the synchronic picture in its full extent. To this end, we begin (in §2) by complementing BWZ's analysis by a more direct inspection of the raw data, which lays bare where and how exactly the predicted scale effects are violated.[4] Secondly, given what is at stake, we feel that BWZ's assessment should be cross-validated by other contemporary statistical procedures for typological research, such as those proposed by Cysouw (2010) and Jaeger et al. (2011). We show (in §3) that these mixed-effects regression methods yield robust synchronic evidence for the predicted scale effects on case marking. In view of this result, a more general discussion is in order about methodological, conceptual and theoretical issues in comparative research: To what extent are purely synchronic analyses justified? What does it take for an effect to be called "universal", and what is the role of the referential scale in explaining differential case marking? In discussing these matters, we question some specific assumptions made by Sinnemäki (2014) and BWZ , but also certain interpretations of the referential scale in formal-generative approaches to differential case marking. In §5, finally, we conclude the paper by summarizing our major points. Our study comes with several supplementary materials (SM1–SM4), which can be downloaded from the authors' websites[5], as well as an Appendix at the very end of the paper.

2 Dissecting the data

2.1 Coding procedure

BWZ examine a sample of 435 languages for referential effects on case marking, under which they subsume all kinds of morphology on verbal arguments, regardless of its fusion type (i.e. including adpositional flagging and non-concatenative signals of case) and its host (i.e. including markers that are limited to elements of the NP other than the noun itself, such as case on German determiners). The classic typological predictions with regard to such case exponents were given in (2) above, but we need to refine the notion of *markedness* at this point. The statements in (2) imply a difference between zero and

[3] We provide some more information on the Family Bias Method in the Appendix.

[4] We would like to thank Balthasar Bickel and his collaborators for making their entire data and their algorithms publicly available (cf. also Bickel et al. 2017).

[5] cf. http://www.kschmidtkebode.de/publications.html and http://www.natalialevshina.com/publications.html.

overt case marking, i.e. a contrast in coding material (as in Comrie 1981 or Croft 2003). BWZ, by contrast, frame the predictions in terms of more abstract grammatical relations (as in Silverstein 1976): Low-ranking P arguments (and high-ranking A arguments) are predicted to preferably establish an unmarked grammatical relation, while high-ranking P arguments (and low-ranking A arguments) are predicted to map onto a marked grammatical relation. BWZ take an unmarked grammatical relation to be an alignment set that also includes other syntactic functions beside the one at issue, notably the S role of intransitive clauses: For example, a case formative that applies to (and hence aligns) S and P defines an {S=P} set, while a marker that does not distinguish S, A and P defines a yet more general {S=A=P} alignment set. On this view, case formatives that exclusively target {P} or {A} define very narrow, thus more specific and hence *structurally marked*, sets.

The crucial question, then, is whether P arguments with higher referential prominence (and A arguments with lower prominence) tend to occur in such marked alignment sets. We can illustrate this on the basis of case marking in Chantyal (Sino-Tibetan, Bodic: Nepal), also discussed by BWZ as a representative example of their coding procedure: Speakers of Chantyal consistently mark A arguments by Ergative case and consistently code S by a zero Absolutive. P arguments are split in such a way that pronouns and human NPs always receive overt Dative case, while non-human NPs typically go in the unmarked Absolutive, just like S. However, the marking for non-human NPs actually depends on the degree of empathy felt towards that entity,[6] so that the precise point at which the referential scale is cut off is not easy to determine. At any rate, though, it is clear that the higher-ranking P arguments define a narrow, marked alignment set {P}, while the lower-ranking P arguments are mapped onto a more general alignment set {S=P}, and not the other way around. A arguments consistently define a narrow set {A}, i.e. they are not split to begin with.

In Table 1 below, the facts about Chantyal are represented in BWZ's coding format.

Table 1: Coding in Bickel, Witzlack-Makarevich & Zakharko (2015)

Language	Family	Macro continent	Referential condition	Sub-system	A	P	Alignment
Chantyal	Sino-Tibetan	Eurasia	N-high	NA	marked	marked	S|A|P
Chantyal	Sino-Tibetan	Eurasia	N-low	NA	marked	unmarked	S=P|A
Chantyal	Sino-Tibetan	Eurasia	Pro	NA	marked	marked	S|A|P

Table 1 displays the three referential conditions that are relevant to case marking in Chantyal, summarizes the alignment pattern in each condition and specifies, for both A

[6] In reference to animals, for example, one can contrast 'I killed the chicken-Ø' with 'I cut the chicken-DAT [so that it bled]', cf. Noonan (2003).

and P, whether they establish a marked or an unmarked alignment set in the given referential condition.[7] The contrast between N-high and N-low captures the above-mentioned fact that a more specific referential contrast (such as animate-inanimate) is difficult to establish.

Having clarified the basic coding procedure in BWZ, we can now examine the data with regard to the case splits they contain. To this end, the following subsections will take a closer look at the effects of the most important referential dimensions coded in the data. In other words, we here first inspect the effects of individual referential properties that are included in hierarchies like (1), such as animacy or person, before we examine the combined effect of these dimensions in §3. Our major goal for the moment is thus to provide typologists with an idea of how numerous the exceptions to well-known referential subscales are and where these are located, i.e. which languages and stocks show which kinds of counterexamples. Although some of the relevant scales are also tested by BWZ, they do not provide the kind of "raw" information we present here, so the following data can be seen as complementary to the statistical analysis offered by BWZ.

2.2 The global picture

The overall distribution of differential case marking is nicely laid out in BWZ (pp. 24–31), especially from an areal perspective. We will discuss the areal patterns in §4 and hence confine ourselves to the overview of the data given in Table 2.[8]

2.3 High-low distinctions: Animacy, definiteness, topicality and the like

Perhaps the best-known kinds of case-marking splits are controlled by animacy (as in Armenian (Indo-European) or Gurung (Sino-Tibetan)), definiteness (as in Amharic (Semitic), Brahui (Dravidian) or Barasano (Tucánoan)), specificity (as in Persian (Indo-European) or Udihe (Tungusic)), kinship (e.g. Gumbaynggir (Pama-Nyungan) or uniqueness (proper versus common nouns (e.g. Gitksan (Tsimshianic)). Iemmolo (2010), among others, additionally points to the importance of topicality in inducing case splits. Overall, such contrasts are relevant to 83 cases (= 60%) of all P-splits and 7 cases (= 12%) of

[7] The column "Subsystem" does not apply to Chantyal and is hence coded as "not applicable (NA)". In other languages, it captures situations in which the case-marking system is sensitive to other structural factors, such as the difference between main and dependent clauses, periphrastic and synthetic verb forms, etc. Each of these conditions is then evaluated separately with regard to whether case marking also interacts with referential properties of the NP and which alignment sets result. The overall number of case-marking (sub)systems (N = 462) is thus somewhat higher than the number of languages in BWZ's sample (N = 435). Additionally, it should also be noted that BWZ concentrate on what they call "default verb classes" in their paper, disregarding, for instance, the case marking and alignment of experiencer NPs; in other words, their focus is on canonical transitive and intransitive clauses.

[8] The counts presented in Table 2 differ very slightly from BWZ's original ones: First, we break up BWZ's "Other" area into Africa and the Americas, in order not to lose this kind of information coded in the data; this holds for all analyses to follow in this paper. Second, BWZ's Table 5 on P-marking fails to list Máku, an isolate of South America. Conversely, our own analysis discards Hindi, for which the original coding was complicated by multiple subsystems with overlapping referential categories that did not allow a straightforward reanalysis.

Table 2: Overview of P- and A-splits in the data

Macro-continent	Family	Split systems P	Split systems A
Africa	Adamawa-Ubangi	1	
	Benue-Congo	2	
	Chadic	2	
	Cushitic	2	
	Indo-European	1	
	Kwa	1	
	Omotic	2	
	Semitic	1	
	South Atlantic	1	
Eurasia	Austroasiatic	1	
	Dravidian	7	
	Indo-European	31	15
	Kusunda	1	
	Mongolian	4	
	Nakh-Daghestanian	1	3
	Semitic	1	
	Sino-Tibetan	13	8
	Tungusic	1	
	Turkic	7	
	Uralic	3	
Americas	Arawakan	1	
	Barbacoan	2	
	Haida	1	
	Macro-Ge	1	
	Máku	1	
	Nadahup	1	
	Pano-Tacanan	1	1
	Pomoan	1	
	Siouan	1	
	Tarascan	1	
	Tsimshianic		1
	Tucánoan	4	
	Uto-Aztecan	3	
	Zuni	1	
Sahul	Austronesian	1	
	Awyu-Dumut	1	
	Kalam	1	
	Madang	1	
	Mangarayan	1	1
	Mirndi	1	
	Oksapmin	1	
	Pama-Nyungan	26	29
	Tangkic		1
	Timor-Alor-Pantar	3	

all A-splits. In BWZ's study, the dimensions of animacy, definiteness, specificity, kinship and uniqueness are recorded as such in the database, while discourse-pragmatic and other language-specific contrasts (cf. Chantyal above) are coded as a more general N_{high}-N_{low} contrast. For purposes of statistical testing, all of these dimensions can be conflated into a $ProN_{high}$ > $ProN_{low}$ scale.[9] In Table 3 below, we have compiled the data that are relevant to this scale and outline to what extent they are in keeping with the predictions for P- and A-marking, respectively. In this and all following tables of the same sort, "fit" indicates that a given system fits the predictions of the scale in question and "vio" indicates that it goes against it. "NA" captures all languages that do not exhibit the relevant split. The figures refer to the number of languages, while the figures in brackets indicate the number of distinct families from which these languages come. Violations are additionally underlined.

[9]The inclusion of pronouns on the scale is justified by the fact that the split between high and low referential prominence may also (or even exclusively) affect pronouns and not only nouns (e.g. in Central Pomo (Americas), where this applies to the third person pronouns).

Table 3: Systems with 'high-low' splits in case marking

	P-marking				A-marking			
	Eurasia	**Africa**	**Americas**	**Sahul**	**Eurasia**	**Africa**	**Americas**	**Sahul**
fit	55 (9)	3 (3)	11 (7)	13 (4)	2 (2)	0 (0)	0 (0)	4 (2)
vio	0 (0)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)
NA	15 (4)	9 (7)	8 (6)	23 (6)	24 (3)	0 (0)	1 (1)	27 (2)

For P-marking, the splits virtually always work in the predicted direction, i.e. low-ranking nouns are structurally unmarked while high-ranking ones are marked. The only exception in the entire database is Sheko (Omotic), in which the distribution is reversed. In this language, we find an unspecified high-low contrast in the database; therefore, wherever the more concrete dimensions on animacy, definiteness and specificity are involved, there is no single counterexample to the predicted effects. For A-marking, the high-low distinction is much less relevant than for P-splits, so that the numbers are very small to begin with. Again, however, there is only a single exceptional language in the data: This is Gitksan (Tsimshianic: Americas), where common nouns are unmarked while proper nouns are marked, which is precisely the opposite of the predicted effect (under which specific marking, for example, should preferentially apply to lower-ranking A arguments). The effect from these referential dimensions is thus very robust cross-linguistically.

2.4 Nominality: Splits between pronouns and lexical NPs

A fundamental distinction on the hierarchies in (1), but also all of its further variants in the literature, is that between pronominal and lexical (i.e. full nominal) NPs. On all four macro-continents distinguished in Table 2, there are languages which reserve specific P-marking for pronouns and allocate their nouns to an unmarked alignment set (e.g. Yoruba, Gulf Arabic, Thayorre and many others). The opposite distribution would be expected for A-marking (e.g. Cashinahua or Yukulta). Overall, nominality governs 33 cases (= 24%) of differential P-marking and 17 cases (= 29%) of differential A-marking. Apart from such "clean splits" between the two categories, one may, however, also adopt a broader view of the markedness distributions of pronouns and nouns: If, for example, a language exhibits a split of its pronouns but not its nouns, the question is whether the nouns join the marked or the unmarked alignment set (for P, the prediction would be "unmarked" while it would be "marked" for A). We can thus distinguish four scenarios in the data, and we provide the relevant figures for each of them in turn:

Scenario A: A given case system makes a "clean" Pro-N distinction. As can be seen in Table 4, wherever this happens, there is not a single language going against the predicted direction of the split, neither for P- nor for A-marking

Table 4: Systems with "clean" Pro-N splits in case marking

	P-marking				A-marking			
	Eurasia	**Africa**	**Americas**	**Sahul**	**Eurasia**	**Africa**	**Americas**	**Sahul**
fit	7 (3)	4 (3)	5 (4)	17 (5)	1 (1)	0 (0)	1 (1)	15 (2)
vio	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
NA	63 (10)	9 (6)	14 (10)	19 (6)	25 (3)	0 (0)	1 (1)	16 (2)

Scenario B: A given case system partitions nouns into marked and unmarked subsets but does not divide up pronouns. There is not a single example of P-marking in which the pronouns join the unmarked set (Table 5).

Table 5: Systems with splits in nouns but not in pronouns

	P-marking				A-marking			
	Eurasia	**Africa**	**Americas**	**Sahul**	**Eurasia**	**Africa**	**Americas**	**Sahul**
fit	46 (9)	4 (3)	8 (5)	10 (4)	1 (0)	0 (0)	0 (0)	2 (2)
vio	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)
NA	24 (4)	9 (7)	11 (9)	26 (6)	25 (3)	0 (0)	1 (1)	29 (2)

As can be seen, there is one exceptional system for A-marking: This is Gitksan (Tsimshianic: Americas), in which common nouns are in an unmarked alignment set while proper nouns and pronouns are marked, i.e. we find exactly the opposite distribution from what is predicted for A-marking.

Scenario C: Where systems partition pronouns into marked and unmarked subsets but do not divide up nouns, the data look as follows (Table 6).

Table 6: Systems with splits in pronouns but not in nouns

	P-marking				A-marking			
	Eurasia	**Africa**	**Americas**	**Sahul**	**Eurasia**	**Africa**	**Americas**	**Sahul**
fit	7 (2)	4 (4)	1 (1)	7 (3)	18 (3)	0 (0)	0 (0)	12 (1)
vio	0 (0)	1 (1)	1 (1)	0 (0)	5 (1)	0 (0)	0 (0)	0 (0)
NA	63 (10)	8 (6)	17 (11)	29 (8)	3 (2)	0 (0)	2 (2)	19 (3)

For P-marking, the prediction is that nouns will join those pronouns that are found in an unmarked set, while the opposite is predicted for A-marking. Two languages violate this prediction for P-marking, namely Oromo (Cushitic) and Osage (Siouan). In Oromo, the unmarked set comprises all pronouns in the plural while singular pronouns and all

nouns receive P-marking; in Osage, all nouns and third-person pronouns are marked while SAPs are unmarked. For A-marking, we find five aberrant systems, all from Indo-European and specifically Iranian (Roshani and participial clauses in Khufi, Yazgulyâmi, Tarom and Bartangi);[10] in all of them, nouns join an unmarked grammatical relationship.

Scenario D: Where languages partition both nouns and pronouns into marked and unmarked alignment sets, this inevitably results in discontinuities between Pro and N on the referential hierarchy and hence in a violation of the Pro>N subscale. The relevant languages are shown in Table 7.

Table 7: Languages with splits in both pronouns and nouns

	P-marking	**A-marking**
Eurasia	Albanian, German, Vafsi and non-participial clauses in 6 Iranian languages (Tarom, Shahrudi, Dimli, Kirmanjki, Kajali, Eshtehardi)	Qiang
Africa	---	---
Americas	Tsafiki, Tarascan, Máku, Central Pomo	---
Sahul	Kala Lagaw Ya, Gumbaynggir (both Pama-Nyungan)	Kala Lagaw Ya, Yandruwandha (both Pama-Nyungan)

The languages in Table 7 differ in how exactly they implement a Pro-N split, particularly with regard to the distribution of individual referential categories within the pronouns (e.g. singular versus plural pronouns (Albanian), 2PL versus all others (Vafsi), 1+2PL versus the rest (Eshtehardi/Dimli/Kirmanjki main clauses), etc.). Upon closer inspection, however, it turns out that these rather idiosyncratic splits are largely confined to the Iranian languages in Table 7; moreover, there are some principled regularities again: Firstly, in all of the above languages, the nouns are split in such a way that they conform to the predictions of the N_{high}>N_{low} scale, and this applies to both P- and A-marking. (The only exception is German, where the split is according to different noun classes and not referential properties as such.) And secondly, pronouns and nouns may both be split according to the same principle, namely an animacy or definiteness contrast (e.g. Tsafiki, Tarascan, Máku and Central Pomo P-marking and Qiang A-marking); as a result, high-ranking (animate, definite) nouns and pronouns are split off from low-ranking (inanimate, indefinite) nouns and pronouns, thus creating a discontinuity between Pro and N on the referential scale. The observed diversity, therefore, primarily resides in the way that specific person-number categories are organized, and we will turn to these presently.

[10] These Iranian languages are very closely related; in fact, Roshani, Khufi and Bartangi are sometimes considered dialects of the Shughni language. Similar remarks apply to the Iranian languages which follow in Table 7.

2.5 Person-conditioned splits

Differential case marking according to person-number constellations is attested for 29 systems (= 21%) for P-marking and 32 systems (= 54%) for A-marking. In the following, we examine person splits separately for singular and non-singular (dual, plural) number, in order to capture the empirical picture as precisely as possible. Table 8 shows which person splits are attested in the singular.

Table 8: Person splits in the singular († indicates the number of violating systems)

	P-marking				A-marking			
	Eurasia	**Africa**	**Americas**	**Sahul**	**Eurasia**	**Africa**	**Americas**	**Sahul**
1-23	3 (1)	1 (1)†	0 (0)	1 (1)†	4 (2)†	0 (0)	0 (0)	2 (1)†
12-3	2 (2)	1 (1)	3 (3)†	6 (2)†	7 (3)	0 (0)	0 (0)	4 (1)†
2-13	4 (1)††††	0 (0)	0 (0)	0 (0)	3 (1)†††	0 (0)	0 (0)	2 (1)††
NA	61 (10)	11 (9)	16 (10)	29 (9)	12 (3)	0 (0)	2 (2)	23 (3)

When languages show a 1-23 split, the predicted direction is 1>23, e.g. a marked alignment set for first-person P. The three Eurasian languages that feature this split for P (all Indo-European) uniformly behave in the predicted direction; in Tera (Chadic: Africa) and Teiwa (Timor-Alor-Pantar: Sahul), by contrast, this scale is violated (23>1). For A, three Eurasian languages (all Sino-Tibetan) fit the predicted direction while an Indo-European system (Tarom participial clauses) goes against it; the two Sahul languages are both Pama-Nyungan and show a violation and a fit, respectively.

At least one taxon from each area exhibits a 12-3 split in P-marking, with one violation of the predicted direction in the Americas (Osage) and in Sahul (Teiwa). For A-marking, the only violation of the scale comes from the Pama-Nyungan language Alyawarra. For the singular, then, the 12>3 scale looks more promising than the 1>23 scale.

What is more difficult to evaluate in terms of scalar predictions is languages that make a 2-13 split, as this split is not predicted by the common versions of the referential hierarchy. BWZ set out to test a hierarchy including 1>2>3 and one including 12>3. If we assume that both of these scales are violated by a 2-13 split, all of the languages in the third row of Table 8 above are problematic and hence constitute counterevidence to the implicational hierarchy in (1a); note that they all come from either Indo-European or Pama-Nyungan.

In the non-singular (conflating plural and dual patterns here), the distribution of person splits is as follows (Table 9).

As can be seen, systems with a 1-23 split, despite not being numerous, are consistently organized in the predicted direction, i.e. there is no violation of this scale this time (in contrast to what we saw for the singular above). For 12-3 splits, A-marking is also well-behaved without exceptions, while six Indo-European systems (all from closely related Iranian languages), and again Osage (Americas) and Teiwa (Sahul), violate the 12>3 scale

Table 9: Person splits in the non-singular († indicates the number of violating systems)

	P-marking				A-marking			
	Eurasia	**Africa**	**Americas**	**Sahul**	**Eurasia**	**Africa**	**Americas**	**Sahul**
1-23	0 (0)	0 (0)	1 (1)	0 (0)	3 (1)	0 (0)	0 (0)	3 (1)
12-3	8 (2)††††††	1 (1)	2 (2)†	5 (2)†	13 (3)	0 (0)	0 (0)	6 (1)
2-13	3 (1)†††	1 (1)†	0 (0)	1 (1)†	2 (1)††	0 (0)	0 (0)	0 (0)
NA	59 (10)	11 (9)	16 (10)	30 (8)	8 (3)	0 (0)	2 (2)	22 (3)

for P-marking. In the latter two languages, then, the violation of the 12>3 scale applies to both singular and non-singular pronouns, whereas in Indo-European, the violations are confined to the non-singular. Finally, we also find some 2-13 splits again; apart from Indo-European (Vafsi, Chali (A- and P-marking), English (P-marking only)), these are now also found in Tsamai (Cushitic: Africa) and Tamambo (Austronesian: Sahul).

The figures provided in this section are not directly comparable to BWZ's, as we examine person effects for the two number categories separately while BWZ intended to home in on one referential dimension at a time (i.e. they tested the robustness of person scales regardless of the number distinction and vice versa). At any rate, however, it is clear that there is quite a bit of diversity with regard to the pronominal splits in question and in view of the small overall numbers and the amount and distribution of exceptions, no straightforward universal appears to emerge from eyeballing the data. The Family Bias estimations involving such person splits (cf. Table 16 and Table 17 in the Appendix) yield roughly as many biases in favour of each ranking as against it, and we will have to await our alternative statistical evaluation in §3 to see if the distributions are still robust enough to support the most widespread version of the referential scale, which comprises a 12>3 contrast (as in (1a)).

2.6 Number-conditioned splits

The final split in the data is one of number: According to Bickel's (1999) "indexability hierarchy", "singular and individualized referents are generally easier to point at unambiguously than groups or masses", suggesting that "in many languages, they figure higher on the indexability hierarchy" (Bickel & Nichols 2002: 225). Following this logic, Table 10–Table 12 below display how the data fit a potential SG>NSG scale. Again, we do this separately for each person category and, in the third person, also separately for nouns and pronouns.

Again, BWZ seek to assess the number scale as such, without the possible effects of cross-cutting person distinctions. In doing so, they roughly find at least as many violations of the SG>NSG scale as supporting taxa in all areas. The raw but more fine-grained data shown here are complex and suggest a different picture for P- and A-marking. For P-splits, the scale in question mostly (i.e. except for Sahul) receives more support than vi-

Table 10: Systems with SG>NSG splits in the first person

	P-marking				A-marking			
	Eurasia	**Africa**	**Americas**	**Sahul**	**Eurasia**	**Africa**	**Americas**	**Sahul**
fit	12 (1)	4 (3)	0 (0)	2 (2)	2 (2)	0 (0)	0 (0)	1 (1)
vio	0 (0)	1 (1)	0 (0)	1 (1)	11 (1)	0 (0)	0 (0)	10 (1)
NA	58 (11)	8 (6)	19 (13)	33 (8)	13 (3)	0 (0)	2 (2)	20 (3)

Table 11: Systems with SG>NSG splits in the second person

	P-marking				A-marking			
	Eurasia	**Africa**	**Americas**	**Sahul**	**Eurasia**	**Africa**	**Americas**	**Sahul**
fit	8 (1)	3 (3)	1 (1)	1 (1)	2 (2)	0 (0)	0 (0)	1 (1)
vio	0 (0)	0 (0)	0 (0)	0 (0)	9 (1)	0 (0)	0 (0)	6 (1)
NA	62 (11)	10 (7)	13 (12)	34 (8)	15 (3)	0 (0)	2 (2)	24 (3)

olations (in raw counts), and it is even exceptionless in the second person. For A-marking, by contrast, there are consistently more violations than fits, yielding BWZ's family-bias results in Figure 17 (Appendix). In other words, there is clear evidence against the SG>NSG scale for A-marking while the picture is less straightforward for P-marking. We leave the latter to be explored further by our own statistical model, which will be presented in the next section.

3 Remodelling the data

Now that we have a clearer idea of individual referential dimensions and their behaviour, we can test the robustness of a scale on which they are combined. Perhaps the best-

Table 12: Systems with SG>NSG splits in the third person

	P-marking				A-marking			
	Eurasia	**Africa**	**Americas**	**Sahul**	**Eurasia**	**Africa**	**Americas**	**Sahul**
fit.PRO	4 (1)	4 (4)	0 (0)	1 (1)	1 (1)	0 (0)	0 (0)	0 (0)
fit.N	1 (1)	0 (0)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
vio.PRO	1 (1)	0 (0)	0 (0)	1 (1)	4 (1)	0 (0)	0 (0)	2 (1)
vio.N	0 (0)	0 (0)	0 (0)	2 (1)	0 (0)	0 (0)	0 (0)	0 (0)
NA	64 (11)	9 (7)	18 (13)	32 (9)	21 (3)	0 (0)	2 (2)	29 (3)

known version of an extended referential hierarchy is the one that recognizes a distinction between speech-act participants and third persons (12>3), a difference between pronouns and full nouns (Pro>N) and a high-low distinction among nouns (which may consist in animacy, definiteness, specificity, topicality and other contrasts). The resulting scale, which is also tested in BWZ, is given in (3) below:

(3) 1,2 Pro > 3 Pro > N_{high} > N_{low}

The relevant predictions for case marking are the previous ones in (2), bearing in mind that "markedness" is defined in terms of alignment sets. For reasons of space and the small number of data points, we will have to confine ourselves to DOM here and exclude differential A-marking from testing. Following BWZ, we will perform two different kinds of statistical evaluation, viz. a conceptually simpler *type model* in §3.1 and a somewhat more complex *rank model* in §3.2.

3.1 Type-based modelling

The basic question in this kind of model is whether the systems that fit the scale in (3) significantly outnumber the systems that violate it, while controlling for genealogical and areal dependencies. The critical issue, therefore, is whether each of the 137 split-P systems in the data is considered a fit to or a violation of (3). In order to be maximally cautious, *any* kind of violation on the following subscales of (3) resulted in the system being coded as "violating":

- *Nominality*: If a language has a "clean" Pro-N split, it fits (3) if the pronouns are marked while the nouns are unmarked; the opposite pattern is a violation. If a language splits only its pronouns, it fits (3) if the nouns join the unmarked sets of pronouns; the opposite pattern is a violation. If a language splits only its nouns, it fits (3) if the pronouns join the marked set of nouns; the opposite pattern is a violation. If a language splits both its nouns and its pronouns, it counts as a violation (cf. our comments in §2.4 above).
- N_{high}-N_{low}: All splits according to animacy, definiteness, topicality, kinship and uniqueness are subsumed under the N_{high}>N_{low} distinction (just as in BWZ's test). Since these are usually binary contrasts, they fit the scale in (3) if higher nominals are P-marked while the lower ones are not, while the opposite situation is a violation of (3).
- *Person*:
  - If a language shows a 12-3 split in its pronouns, it fits (3) if speech-act participants (1,2) are marked while 3 is unmarked; the opposite pattern is a violation.
  - If a language shows a 1-23 split, it can be considered a "partial fit" if it takes the direction of 1>23 (i.e. with first person being marked and the others unmarked); in that case, it arguably does obey the proposed 1>3 ranking, while

it does not make a distinction between 2 and 3. If the direction of the split is 23>1, it counts as a violation of (3).

- If a language shows a 2-13 split, it violates the 12>3 part of (3), no matter which direction the split takes (cf. our earlier discussion of this issue).
- Where a language exhibits different kinds of person splits for singular and non-singular number, each of them was first evaluated separately according to the above criteria, and the values were subsequently combined into a single one. If a system showed a fit in one number category and a partial fit in the other, we coded it as fit; if a system showed a fit and a violation in the other (e.g. Tera and Tsamai), we coded it as partial fit; if a system showed a partial fit in one number category and no split in the other (e.g. Shughni), we also counted it as a partial fit. All other combinations containing some violation were counted as violating systems.

As a result of this coding policy, we obtained the following raw data for the scale in (3) (Table 13).

These figures suggest a rather strong tendency for both systems and families to fit the scale in all macro continents, but in order to control for genealogical relationships and areal dependencies in a rigorous way, a mixed-effects generalized linear model (GLM) is called for. We thus applied a mixed Poisson GLM (also known as mixed loglinear model) to the data at hand. To this end, the data were first cross-tabulated into the format shown in Table 14 (the full dataset is available as supplementary material SM1).[11]

The results of loglinear modelling show that there is no interaction between the fixed effects of *Fit* and *MContinent* ($p = 0.637$): In all areas, there is a strong preference for fitting systems even when genealogical relations are controlled for: $b = 1.43$, $p < 0.0001$ (cf. SM3 for further details). The estimates in a Poisson model represent the multiplicative effect of a variable on the outcome on the log scale, which means that "fit" is about $e^{1.43} \approx 4.2$ times more probable than "violation".[12]

In short, the type model suggests that there is a strong cross-linguistic tendency for languages to fit the referential scale in (3), independently of macro-continental affiliations. Since the counts were aggregated across language families, the observed cross-linguistic bias towards fitting the scale cannot be attributed to the possible impact of larger families, either.

[11] For reasons of simplicity, we discarded the two "partial" languages in Table 13 (viz. Tera and Tsamai, both Afro-Asiatic).

[12] An alternative to the above loglinear format is to treat the number of fitting and violating systems as successes and failures in trials within a family, similar to heads or tails when one tosses a coin (where each new language produces either heads or tails). It would then be appropriate to apply logistic binomial regression. We tested whether *MContinent* had a significant influence on the chances of fits as compared to violations within each family. Because of some amount of overdispersion, a quasibinomial GLM was used. This procedure yielded the same result as the one presented above. There is no significant effect of *MContinent* on the chances of fitting or violation. A model with the intercept only has a significant intercept $b = 1.44$, $p < 0.0001$, which means that the odds of fitting are $e^{1.44} \approx 4.2$ times higher than those of violation. This result is almost identical to the one presented above. The two modelling approaches thus converge, which is reassuring.

Table 13: Systems fitting or violating the scale in (3)

	Eurasia	Africa	Americas	Sahul
fit	56 (11)	9 (8)	14 (9)	31 (8)
vio	14 (1)	2 (2)	5 (5)	5 (3)
partial	0 (0)	2 (2)	0 (0)	0 (0)

Table 14: Data coding for the Poisson GLM (segment)

Family	MContinent	Fit	Freq
Adamawa-Ubangi	Africa	fit	1
Adamawa-Ubangi	Africa	vio	0
Benue-Congo	Africa	fit	2
Benue-Congo	Africa	vio	0
Chadic	Africa	fit	1
Chadic	Africa	vio	0

3.2 Rank-based modelling

In this kind of model, it is tested whether higher-ranking P arguments stand a better chance of being structurally marked than lower-ranking ones. More precisely, we are probing an ordinal relationship by which the odds for marked P arguments should decrease as we proceed down the ranks on the scale (i.e. 1^{st} rank > 2^{nd} rank > 3^{rd} rank, etc.). In order to run an appropriate model, the data were converted into the following long format (Table 15).

Table 15: Data coding for the rank-based GLM (segment)

MContinent	Family	System	RefCat	Number	Marking	Rank
Africa	Adamawa-Ubangi	Gbeya	1	SG	marked	12
Africa	Adamawa-Ubangi	Gbeya	1	NSG	marked	12
Africa	Adamawa-Ubangi	Gbeya	2	SG	marked	12
Africa	Adamawa-Ubangi	Gbeya	2	NSG	marked	12
Africa	Adamawa-Ubangi	Gbeya	3	SG	marked	3
Africa	Adamawa-Ubangi	Gbeya	3	NSG	marked	3
Africa	Adamawa-Ubangi	Gbeya	N_{high}	SG	unmarked	N_{high}
Africa	Adamawa-Ubangi	Gbeya	N_{high}	NSG	unmarked	N_{high}
Africa	Adamawa-Ubangi	Gbeya	N_{low}	SG	unmarked	N_{low}
Africa	Adamawa-Ubangi	Gbeya	N_{low}	NSG	unmarked	N_{low}

This format represents each system in the data by 10 rows, allowing us to code each combination of referential category (cf. 4th column, *RefCat*) and number (5th column) separately. This way, we can now also take person differences between singular and non-singular into account. The full data are available as supplementary material SM2.

We fitted a mixed-effects logistic GLM to these data. The response variable was *Marking*, with the values "marked" and "unmarked" (sixth column of Table 15). The predictor that represented the position of the arguments on the referential scale was called *Rank* (last column). We included *Number* and *MContinent* as further fixed effects and tested the interactions between the predictors. The individual tendencies of systems and language families to mark more or fewer referential categories (variables *System* and *Family*) were encoded as random intercepts.[13] Since *System* is nested within *Family*, we are dealing with a multilevel hierarchical model.

The analyses reveal a significant main effect of *Rank* as well as two significant interactions between the predictors: one between *Rank* and *Number*, and the other between *Rank* and *MContinent*. In the presence of multiple interactions, it is best to explore the results visually. Figure 1 displays the average probabilities of "marked" P arguments in the singular and the non-singular on the vertical axis. The horizontal axis represents the four ranks on the scale, from left to right. The different colours and lines correspond to the four macro continents, which are explained in the legend.

In the singular, we observe very little if any difference between the first two positions on the scale (12 and 3). Figure 1 thus confirms our earlier observation that the difference between speech-act and third-person (singular) pronouns is not very relevant for P-marking overall, but also that there are hardly any violations of the predicted effect where it occurs. In Africa and Sahul, the most obvious decrease in the chances of P being marked is found between the pronouns and the nouns. In contrast, the Americas and Eurasia have a large difference in the probability of marking between all high-prominence arguments (pronouns and high-prominence nouns) and low-prominence nouns.

In the non-singular, Figure 1 nicely reflects what we saw in Table 9 above: In the Americas (specifically, Osage) and particularly in Eurasia, there is a certain number of languages that violate the 12>3 part of the scale, leading to a slight positive rather than the expected negative slope of the relevant curves in Figure 1. We saw above that these exceptions are virtually all located in Iranian languages, and their effect is not strong enough to yield significant counterevidence (post-hoc tests of P-marking: Eurasia: b = 0.22, p = 0.284, Americas: b = 0.13, p = 0.767). By contrast, all other ranking effects in Figure 1 are negative and significant (cf. SM3 for further technical details of the model).

In sum, what we can take from this model is the following:

- We do not find any significant violations of the referential hierarchy in (3).

[13] We also tested models in which we additionally allowed for the rank effect to vary between the families in the sample, i.e. by adding random by-family slopes. Where such models were feasible given the present sample size per family, they did not make a significant contribution to the model (and were hence discarded in the stepwise modelling process), nor did they affect the stability of the rank effect.

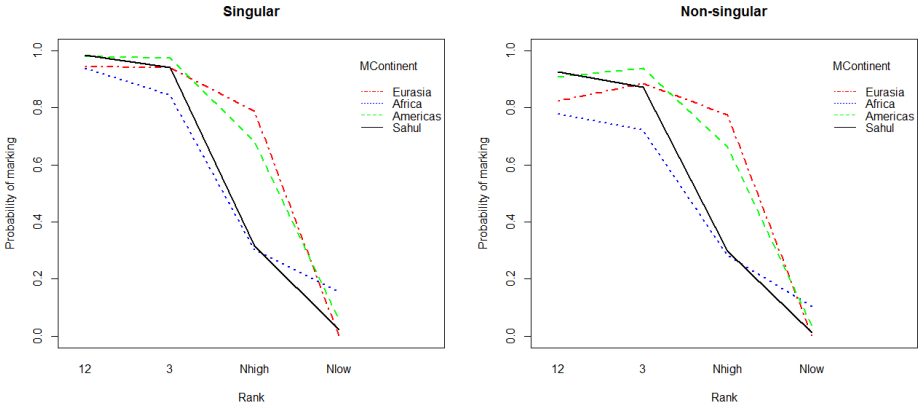

Figure 1: Influence of ranks on the probability of marked Ps in the singular (left) and the non-singular (left), by macro continent.

- Singular and non-singular number behave slightly differently with regard to the effects of the 12>3 subscale (the effect is largely irrelevant in the singular and mixed though not significantly contradictory in the plural). However, as there is also a significant main effect of *Rank* in the data, the hierarchy in (3) is robust enough across the number categories as well.
- The macro continents behave differently with regard to the average cut-off point that is most relevant on the hierarchy.

There are thus evidently areal patterns and restrictions in DOM, but the predicted effect of the referential hierarchy in (3) is uniform enough in our model to assume that it is universally valid, after all. Therefore, while BWZ argue "against universal effects of referential scales on case marking" (cf. the title of their paper), we would argue for the universality of precisely the *effect*, no matter which particular dimensions of referential prominence are the most relevant ones in individual languages or macro areas. This and further issues of interpretation deserve more elaborate discussion, provided in the next section.

4 Interpreting the data

In assessing the alleged universality of scale effects on case marking, a number of fundamental questions arise that will influence one's conclusion on the matter. In the following subsections, we are going to discuss a selection of these, notably assumptions about methodological choices, geographical distributions, counterexamples, and the ontological status of scales, i.e. what they represent and what they are supposed to do.

4.1 Methodological approaches to typological data

At first glance, the most striking difference between BWZ's approach to modelling the data and ours is that the former is framed in terms of what Greenberg (1978) calls "the dynamicization of typology": As BWZ (p. 24) put it, "any evaluation" of alleged universal pressures "needs to target trends in diachrony rather than current distributions". The Family Bias Method attempts to model such diachronic trends by investigating whether genealogical taxa tend to develop in keeping with the alleged universal (here: in the direction predicted by a given referential scale) or not. Other dynamic approaches are based on estimating and comparing transition probabilities from the genealogical structure (i.e. family trees) of individual taxa (cf. , e.g. , Cysouw 2011; Dunn et al. 2011; Bickel, Witzlack-Makarevich, Choudhary, et al. 2015). All of these dynamic methods are, of course, promising developments in linguistic typology. But it should be borne in mind that they are not based on diachronic data, but on particular inferences drawn from synchronic distributions and/or genealogical relations. And such inferences, in turn, usually involve delicate decisions on uncertain issues, such as the branch lengths in family trees, the threshold for defining diachronic biases or the way in which one extrapolates from large to small families.

Again, we do not wish to call these methods into question, but in the absence of *world-wide* data on actual diachronic developments, we believe that densely sampled synchronic data are still a viable, legitimate and powerful source of evidence in linguistic typology. Instead of throwing out the synchronic baby with its bathwater, then, we have here followed equally recent methodological proposals by Cysouw (2010) and Jaeger et al. (2011) to model synchronic distributions by means of mixed-effects regression procedures. These are standard ways of modelling variation in other disciplines, and while they cannot, by definition, target any diachronic trends, they are powerful means of staking out the room for universal pressures once family- and area-internal variation is controlled for. In fact, just like the Family Bias Method, they examine the number of "fits" and "violations" taxon by taxon (cf. Table 14 again). The difference is that our models end up taking all taxa in the data on board (including those that the Family Bias Method would have excluded as "internally diverse") and that they always operate with the actual values of all isolates rather than estimating them based on extrapolation procedures. What we can obtain from this is a classic Greenbergian statement that "with overwhelmingly greater than chance frequency" (e.g. Greenberg 1966 [1963]: 79), systems of differential case marking tend to obey the referential hierarchy in (3) rather than going against it.

Ultimately, then, it is fair to say that, at the current stage of research, synchronic and diachronic methods of modelling typological data have complementary advantages and drawbacks. And as long as that is the case, we see no reason to trust carefully sampled and analyzed synchronic data any less than diachronic inferences drawn from them.

4.2 Geographical universality

A common assumption since at least Bossong (1985) has been that differential argument marking, and its systematic correlation with referential categories, is "extremely widespread" (Aissen 2003: 439) and independent of macro-areal affiliations.

In all fairness, these claims refer to differential P-marking only, and BWZ's data suggest that they would, indeed, be plainly wrong for A-marking. Although we do not know the principles according to which BWZ selected their sample languages, it seems safe to say that differential A-marking is generally dispreferred and its occurrence is skewed heavily towards Eurasia and Sahul, and here again towards Indo-European, Pama-Nyungan and perhaps Sino-Tibetan. For differential P-marking, on the other hand, the picture is less clear. The two largest distributional studies, namely BWZ and Sinnemäki (2014), appear to yield Ssomewhat different results, which we set out and discuss for interested readers in the supplementary materials (SM4); from the facts presented there, it seems to us that when languages develop case marking for direct objects, the differential marking type is indeed more likely, across the world's linguistic macro areas, than unsplit marking.

But the overall distribution of DOM is actually less vital than another point raised in Sinnemäki (2014): He argues that the individual referential dimensions underlying DOM exhibit conspicuous areal contours. While animacy is distributed fairly evenly across the globe, definiteness/specificity shows a strong skewing towards Africa and the Old World more generally. In our model, too, we found some significant areal differences in the preferred cut-off points on the hierarchy in (3). However, we opine that such areal skewings do not invalidate the basic insight of the referential scales in (1) and in (3). As far as we can see, all versions of referential scales proposed in the typological literature are intended to be cross-linguistic generalizations over referentially-conditioned splits in individual languages, no matter which of the referential categories on a given scale are actually relevant in those languages. In other words, the hierarchy aims to capture a language with a particular person split in the pronouns just as much as a language with an animacy split among full NPs. Therefore, the requirement for the universality of scale effects is not that each individual subscale or referential dimension needs to be attested throughout the world, but that wherever referentially-conditioned splits *do* occur, they will strongly tend to obey the referential hierarchy rather than going in the opposite direction. Crucially, this latter issue is not addressed in Sinnemäki's (2014) paper: He asks which referential (or other structural) dimensions are responsible for differential object marking in the sample languages and how these dimensions are distributed geographically. He does not, however, look at the directionality of the effect, i.e. whether a language that has an animacy split actually works in the predicted direction. To the extent that these effects are uniform (cf. §4.3 below), we do not see any reason to question the validity of referential scale effects on purely geographical grounds.

4.3 Structural universality

Bossong (1985: VIII) voices a common opinion among comparative linguists when he claims that the patterns of differential object marking are "structurally uniform [...] around the earth" (our translation), in the sense that whenever DOM is driven by referential properties, it follows the direction given in (2) above rather than going against it. BWZ extend this assumption to differential A-marking as well and ask whether "there exists one or more *universal* scale(s) on which all [split] systems fit" (p. 22), and we already know that their conclusion is negative.

There are two issues involved here. The first and more important one pertains to the number of weight of counterexamples. The figures above suggest that splits in terms of animacy, definiteness and other high/low-contrasts are almost without exception, for both A- and P-marking (Table 3 and Table 5 above). The same holds when languages make "clean" splits between nouns and pronouns (Table 4). From this perspective, the lower end of the traditional referential hierarchy, as well as its global ranking of pronouns and nouns, can be considered structurally uniform, indeed (cf. also Levshina 2018 for further statistical corroboration). What is more problematic is the internal ranking of person and number distinctions, i.e. particularly the upper part of the referential hierarchy. Here, Table 7–Table 12 suggest considerable language-specific variation and thus idiosyncratic historical developments (cf. also Filimonova 2005 on this point). Therefore, when BWZ test for scales involving particular pronominal splits (e.g. 1>2>3>N or 12>3>N), and with the cross-cutting number distinctions being disregarded, it is not surprising that they find a number of exceptions; in fact, they even find roughly as many family biases in favour of and against these scales (cf. Appendix). By contrast, our alternative regression analysis of the 12>3>N_{high}>N_{low} scale still showed a robust enough effect for this particular person split (in both the type model and the rank model), even when number is taken into account as a separate variable. Taken together, our analyses suggest that referential effects on case marking are sufficiently homogeneous to be considered universal, at least by typologists who (unlike Bickel et al.) accept purely synchronic evidence as a valid basis for establishing universals.

A second point about structural homogeneity relates to BWZ's finding (p. 34) that no single scale they tested fits A and P *simultaneously*. As with Sinnemäki's (2014) argument about the areal restrictedness of animacy or definiteness, one may object here that it actually does not matter whether the high-low distinction is less important for A-marking than for P-marking. In fact, it has recently been emphasized that A and P are not simply "each other's mirror-image" (Fauconnier & Verstraete 2014) in a number of ways, and hence also differ in regard to the referential properties that are relevant when they are case-split. It may thus very well be the case that the referential hierarchies in (1) are poorer predictors for A- than for P-marking because they miss some of the crucial dimensions (e.g. particular kinds of focus) and overstate others (e.g. animacy and definiteness). However, to the extent that they *are* applicable, it is again the predicted *effects* that are at stake here. And as we saw above, the effect is strikingly homogeneous as far as high-low distinctions and the clean Pro-N splits are concerned. Where A and P may respond very differently is the referential dimension of number, as was shown

in Table 10–Table 12, so that we see opposing rather than uniform effects of the alleged SG > PL scale. This is certainly worth further investigation, but given that most versions of the referential hierarchy are not even concerned with number contrasts, we do not see this as a serious challenge to referential scale effects in general.

4.4 The status and purpose of referential scales

In this final section, we would like to comment on two remarks by BWZ on the usefulness of scales in typological research. The first one relates to the fact that by far most languages work in terms of a specific binary opposition,[14] which is why BWZ explicitly reject the terms "scale" or "hierarchy" to capture such simple splits. In our view, this issue is largely terminological in nature: In so far as binary oppositions (like Pro > N) are implicational statements as we see them in other typological domains (e.g. like SG > PL or VOICED PLOSIVES > VOICELESS PLOSIVES), we are not averse to calling them "(implicational) scales" or "(implicational) hierarchies". The more important issue is the second one, relating to the level of abstraction at which comparative scales are formulated. Recall that BWZ find positive evidence for their Pro/N_{high} > N_{low} scale, but they question the usefulness of such a scale precisely because it seems too heterogeneous to reflect a single underlying principle (p. 36 of their paper). The same kind of criticism may actually be levelled against the extended hierarchies in (1a) and (3), which also conflate a number of logically distinct dimensions (e.g. a person contrast within the pronouns, a split in nominality and various other properties). The question is, therefore, to what extent the postulation of more abstract (i.e. extended, multidimensional or more general) hierarchies is justified.

Generally speaking, the motivation behind postulating referential scales is to capture constraints on cross-linguistic variation. Mapping diverse language-specific oppositions onto more abstract comparative scales firstly serves the purpose of increasing the scope of the constraint; as compared to individual scales, it is thus arguably a more elegant way of formulating cross-linguistic generalizations. It does, however, also suggest that there is a unified explanation for the phenomenon in question. Gildea & Zúñiga (2016), for example, note that the referential hierarchy has often been taken to reflect a coherent cognitive phenomenon, a "representational constraint" in the sense of Haspelmath (submitted) or Elman et al. (1996). For example, Kiparsky (2008: 39–40) characterizes his version of the referential hierarchy as an "inviolable […] part of the design of language", i.e. of "U[niversal] G[rammar]". In so far as such representational principles directly constrain the possible shapes of case-marking systems, the postulated hierarchy is said to *explain* the cross-linguistic patterns we observe.[15]

[14] Exceptions to this are languages that make a certain kind of split in the pronouns (e.g. 12>3) and a different one in the nouns (e.g. N_{high}>N_{low}, cf. Table 7 above), or languages that use multiple cases or different case allomorphs differentially, depending on referential properties.

[15] A formal account of a very different kind is presented in Aissen (2003), but the conclusion ultimately also reads like an UG-based representational constraint: "[T]he principles underlying DOM" may be "part of core grammar", implemented by a "universally fixed […] ranking of constraints" (Aissen 2003: 439–440).

In functional-typological work, referential hierarchies are not inviolable "top-down" principles of cognition; the correlations they capture (i.e. between an argument's referential prominence and its likelihood of receiving special case marking) are typically given more probabilistic explanations in terms of language usage and change.[16] Now, if one believes that these correlations fall out entirely from local processes of grammaticalization and can be fully explained by reference to the respective source construction (e.g. Cristofaro 2013), there is really no gain in postulating an extended or more abstract hierarchy beyond individual referential dimensions. By contrast, for typologists who argue that these individual dimensions can receive a unified explanation, such an abstraction is more useful. Perhaps the best-known line of argumentation in this direction is that of communicative efficiency (e.g. Dixon 1979; Comrie 1981; Newmeyer 2005; Haspelmath 2008; Hawkins 2014): Speakers tend to mark those A and P arguments whose syntactic function is relatively unexpected (or surprising) given their referential properties, while expected role-reference constellations are left unmarked (cf. also Haspelmath 2018 for a systematization of this proposal). Crucially, this account is said to work for all kinds of referential splits in the same way, whether they are based on animacy, definiteness or other kinds of prominence in particular languages. While still in need of further corroboration, there is mounting evidence from frequency data (e.g. Dahl 2000; Fry 2003; Lee 2006; Jäger 2007), psycholinguistic experimentation (e.g. Fedzechkina et al. 2012; Kurumada & Jaeger 2015) and computer simulations (e.g. Lestrade, this volume) in favour of this approach, at least for DOM (cf. also Levshina 2018).[17]

In sum, then, the postulation of more abstract or multidimensional referential hierarchies is not just an elegant way of formulating cross-linguistic generalizations about case splits. It is also useful if one believes that a unified explanation can be given to those splits. With regard to the latter, we currently see little, if any, evidence for an innate, inviolable referential hierarchy in Kiparsky's sense, but accumulating evidence in favour of functional explanations that operate with probabilistic constraints on usage and diachronic change.[18]

[16] There are, of course, also attempts in the typological literature to link implicational universals and semantic maps to "conceptual spaces", i.e. coherent "regions" of the human mind (cf. Croft 2003). But this sort of cognitive interpretation does not seem to be prominent for the referential hierarchy. For a general critique of this approach, see Cristofaro (2010).

[17] As we saw earlier, differential A-marking is generally rarer, geographically and genealogically more restricted, and no parallel evidence from psycholinguistic experimentation is currently available. Moreover, there is compelling evidence that differential A-marking involves additional motivations that do not apply to P-marking in the same way (de Hoop & Malchukov 2008; Fauconnier & Verstraete 2014). For these reasons, it is presently rather difficult to estimate just how much of differential A-marking is amenable an account in terms of communicative efficiency.

[18] A reviewer of the paper remarked that this formulation, and the efficiency explanation in general, is basically diachronic in nature, which s/he sees as a contradiction to the kind of synchronic typology we have practised here. But these are actually two independent issues. Efficiency explanations are first and foremost about the choices, however subconscious, that individual speakers make for or against overt case marking in online production (and hence "synchronically", in a sense); these necessarily have to propagate in time and space to conventionalize into a grammatical pattern, which adds a diachronic component to the explanation. But since we cannot sample these processes in the same way that we can sample their results across the world's languages, we believe that the synchronic states that we have investigated here are still a viable data source for typologists. This is hence a purely methodological point and does not contradict the fact that usage-based explanations involve diachrony.

5 Conclusion

In this paper, we have attempted to re-present and reanalyze BWZ's typological data on differential case marking. Their database, along with Sinnemäki's (2014), constitutes the largest current repository for gauging case-marking patterns in the world's languages, and we would thus like to acknowledge again the tremendous amount of cross-linguistic groundwork that these colleagues have carried out. Moreover, Bickel's (2011; 2013) Family Bias Method is a valuable addition to the toolkit of quantitative typology, as it starts out from considering how possibly universal pressures on language should play out in the diachronic development of families. It is thus *conceptually* different from the kinds of regression models that we have used in the present paper, although it operates with exactly the same kind of synchronic typological data. The most important technical difference is that its final results are based on statistically significant biases in large families and their extrapolation to small taxa and isolates; it thus neglects large families without biases and introduces some noise into the data from small taxa (cf. Appendix again). The major goal of the present paper was to complement these Family Bias estimations with a look at the actual "raw" data on various referential dimensions and to present an alternative statistical model of the data that relies on widely used regression procedures on the full data set.

In doing so, we found less counterevidence than BWZ's results and their rhetoric suggest. The global structure of the classic hierarchies (pronouns > nouns) and all high-low prominence distinctions (animacy, definiteness, topicality, kinship) are almost without exception, and while there is more variation within the pronominal domain, a closer look at the data reveals that the number of counterexamples is not significant enough to override the strong support that the referential hierarchy in (3) receives from our statistical models.

Therefore, our conclusion is the opposite of BWZ, namely that there *is* evidence for universal scale effects on case marking. We can subscribe to this view for the following reasons:

- Unlike BWZ, we accept purely synchronic evidence for postulating universal preferences (provided it is as statistically robust as in the present case).
- Unlike Sinnemäki (2014), we do not require that the individual referential properties need to be involved in DAM in all macro areas to the same degree; what matters is that the direction of the effect is uniform, regardless of which specific referential dimensions it comes from.
- Unlike BWZ, we obtain a positive statistical signal even when several referential dimensions are combined into a larger scale.
- Unlike BWZ, we have no reservations to apply the label "scale" even to binary oppositions (which is how most languages work to begin with). That is, even if we did not wish to operate with extended scales such as (1) or (3), we would argue for the existence of "scale effects".

As laid out in §4, we believe that working with multi-term or abstract scales can be useful if one has an explanatory account that unites the various referential dimensions under a single principle. While we reject the view that such a referential hierarchy constitutes an innate representational constraint, we are sympathetic to a functional view that relates different referential contrasts to a common principle of efficient information processing.

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References

Aissen, Judith. 2003. Differential object marking: Iconicity vs. Economy. *Natural Language and Linguistic Theory* 21(3). 435–483.

Bickel, Balthasar. 1999. *Indexability effects in Himalayan languages*. Paper presented at the Workshop on Himalayan Languages, Santa Barbara.

Bickel, Balthasar. 2011. Statistical modeling of language universals. *Linguistic Typology* 15(2). 401–413.

Bickel, Balthasar. 2013. Distributional biases in language families. In Balthasar Bickel, Lenore A. Genoble, David A. Peterson & Alan Timberlake (eds.), *Language typology and historical contingency*, 415–444. Amsterdam: John Benjamins.

Bickel, Balthasar & Johanna Nichols. 2002. Autotypologizing databases and their use in fieldwork. In Peter Austin, Helen Dry & Peter Wittenburg (eds.), *Proceedings of the International LREC Workshop on Resources and Tools in Field Linguistics, Las Palmas, 26–27 May 2002*. Nijmegen: MPI for Psycholinguistics.

Bickel, Balthasar, Johanna Nichols, Taras Zakharko, Kristine Witzlack-Makarevich Alena; Hildebrandt, Michael Rießler, Lennart Bierkandt, Fernando Zúniga & John B. Lowe. 2017. *The AUTOTYP typological databases. Version 0.1.0*. https://github.com/autotyp/autotyp-data/tree/0.1.0.

Bickel, Balthasar, Alena Witzlack-Makarevich, Kamal K. Choudhary, Matthias Schlesewsky & Ina Bornkessel-Schlesewsky. 2015. The neurophysiology of language processing shapes the evolution of grammar: Evidence from case marking. *PloS One* 10(8). e0132819.

Bickel, Balthasar, Alena Witzlack-Makarevich & Taras Zakharko. 2015. Typological evidence against universal effects of referential scales on case alignment. In Ina Bornkessel-Schlesewsky, Andrej L. Malchukov & Marc Richards (eds.), *Scales*, 7–43. Berlin: de Gruyter Mouton.

Bickel, Balthasar, Alena Witzlack-Makarevich, Taras Zakharko & Giorgio Iemmolo. 2015. Exploring diachronic universals of agreement: Alignment patterns and zero marking across person categories. In Jürg Fleischer, Elisabeth Rieken & Paul Widmer (eds.), *Agreement from a diachronic perspective*, 29–52. Berlin: de Gruyter Mouton.

Bossong, Georg. 1985. *Differentielle Objektmarkierung in den neuiranischen Sprachen*. Tübingen: Narr.

Comrie, Bernard. 1981. *Language universals and linguistic typology*. Chicago: University of Chicago Press.

Cristofaro, Sonia. 2010. Semantic maps and mental representation. *Linguistic Discovery* 8(1). 35–52.

Cristofaro, Sonia. 2013. The referential hierarchy: Reviewing the evidence in diachronic perspective. In Dik Bakker & Martin Haspelmath (eds.), *Languages across boundaries: Studies in memory of Anna Siewierska*, 69–93. Berlin: Mouton de Gruyter.

Croft, William. 2003. *Typology and universals*. 2nd edn. Cambridge: Cambridge University Press.

Cysouw, Michael. 2010. Dealing with diversity: Towards an explanation of NP-internal word order frequencies. *Linguistic Typology* 14(3–4). 253–286.

Cysouw, Michael. 2011. Understanding transition probabilities. *Linguistic Typology* 15(2). 415–431.

Dahl, Östen. 2000. Egophoricity in discourse and syntax. *Functions of Language* 7(1). 37–77.

de Hoop, Helen & Andrej L. Malchukov. 2008. Case-marking strategies. *Linguistic Inquiry* 39(4). 565–587.

DeLancey, Scott. 1981. An interpretation of split ergativity and related patterns. *Language* 57(3). 626–657.

Dixon, R. M. W. 1979. Ergativity. *Language* 55(1). 59–138.

Dunn, Michael, Simon J. Greenhill, Stephen C. Levinson & Russell D. Gray. 2011. Evolved structure of language shows lineage-specific trends in word-order universals. *Nature* 473. 79–82.

Elman, Jeffrey L., Elizabeth A. Bates, Mark H. Johnson, Annette Karmiloff-Smith, Domenico Parisi & Kim Plunkett. 1996. *Rethinking innateness*. Cambridge, MA: MIT Press.

Fauconnier, Stefanie & Jean-Christophe Verstraete. 2014. A and O as each other's mirror image? Problems with markedness reversal. *Linguistic Typology* 18(1). 3–49.

Fedzechkina, Maryia, T. Florian Jaeger & Elissa L. Newport. 2012. Language learners restructure their input to facilitate efficient communication. *Proceedings of the National Academy of Sciences of the United States of America* 109(44). 17897–17902.

Filimonova, Elena. 2005. The noun phrase hierarchy and relational marking: Problems and counterevidence. *Linguistic Typology* 9(1). 77–113.

Fry, John. 2003. *Ellipsis and wa-marking in Japanese conversation*. London: Routledge.

Gildea, Spike & Fernando Zúñiga. 2016. Referential hierarchies: A new look at some historical and typological patterns. *Linguistics* 54(3). 483–529.

Greenberg, Joseph H. 1966 [1963]. Some universals of grammar with particular reference to the order of meaningful elements. In Joseph H. Greenberg (ed.), *Universals of language*, 2nd edn., 73–113. Cambridge: The MIT Press.

Greenberg, Joseph H. 1978. Diachrony, synchrony and language universals. In Joseph H. Greenberg, Charles A. Ferguson & Edith Moravcsik (eds.), *Universals of human language. Vol. 1: Method and theory*, 61–92. Stanford: Stanford University Press.

Haspelmath, Martin. 2008. Creating economical morphosyntactic patterns in language change. In Jeff Good (ed.), *Language universals and language change*, 185–214. Oxford: Oxford: Oxford University Press.

Haspelmath, Martin. 2018. *Role-reference association and the explanation of argument coding splits*. Ms., Leipzig University (available at https://zenodo.org/record/1163411).

Haspelmath, Martin. Submitted. Can cross-linguistic regularities be explained by change constraints? In Karsten Schmidtke-Bode, Natalia Levshina, Susanne Maria Michaelis & Ilja A. Serzant (eds.), *Explanation in linguistic typology: Diachronic sources, functional motivations and the nature of the evidence*. Berlin: Language Science Press.

Hawkins, John A. 2014. *Cross-linguistic variation and efficiency*. Oxford: Oxford: Oxford University Press.

Iemmolo, Giorgio. 2010. Topicality and differential object marking. Evidence from Romance and beyond. *Studies in Language* 34(2). 239–272.

Jaeger, T. Florian, Peter Graff, William Croft & Daniel Pontillo. 2011. Mixed effect models for genetic and areal dependencies in linguistic typology. *Linguistic Typology* 15(2). 281–320.

Jäger, Gerhard. 2007. Evolutionary game theory and typology: A case study. *Language* 83(1). 74–109.

Kiparsky, Paul. 2008. Universals constrain change; change results in typological generalizations. In Jeff Good (ed.), *Linguistic universals and language change*, 24–53. Oxford: Oxford: Oxford University Press.

Kurumada, Chigusa & T. Florian Jaeger. 2015. Communicative efficiency in language production: Optional case-marking in Japanese. *Journal of Memory and Language* 83. 152–178.

Lazard, Gilbert. 1998. *Actancy*. Berlin: Mouton de Gruyter.

Lee, Hanjung. 2006. Parallel optimization in case systems: Evidence from case ellipsis in Korean. *Journal of East Asian Linguistics* 15(1). 69–96.

Levshina, Natalia. 2018. *Differential argument marking and referential scales: Bayesian multilevel regression modeling of typological data*. Ms., Leipzig University (available at http://www.natalialevshina.com/publications.html).

Newmeyer, Frederick J. 2005. *Possible and probable languages: A generative perspective on linguistic typology*. Oxford: Oxford University Press.

Noonan, Michael. 2003. The Chantyal language. In Graham Thurgood & Randy J. LaPolla (eds.), *The Sino-Tibetan languages*, 315–335. London: Routledge.

Shibatani, Masayoshi. 2006. On the conceptual framework for voice phenomena. *Linguistics* 44(2). 217–269.

Silverstein, Michael. 1976. Hierarchy of features and ergativity. In R. M. W. Dixon (ed.), *Grammatical categories in Australian languages*, 112–171. Atlantic Highlands, NJ: Humanities Press.
Sinnemäki, Kaius. 2014. A typological perspective on Differential Object Marking. *Linguistics* 52(2). 281–313.
van Lier, Eva. 2012. Referential effects on the expression of three-participant events across languages – An introduction in memory of Anna Siewierska. *Linguistic Discovery* 10(3). 1–16.
Witzlack-Makarevich, Alena, Taras Zakharko, Lennart Bierkandt, Fernando Zúñiga & Balthasar Bickel. 2016. Decomposing hierarchical alignment: Co-arguments as conditions on alignment and the limits of referential hierarchies as explanations in verb agreement. *Linguistics* 54(3). 531–561.

Appendix: Bickel, Witzlack-Makarevich & Zakharko's (2015) Family Bias estimations

In this appendix, we provide some of Bickel, Witzlack-Makarevich & Zakharko's (2015) [henceforth BWZ, as in the main text] results for comparison with our own analysis. Readers familiar with the Family Bias Method may thus jump ahead to Table 16 and Table 17 below; for uninitiated readers, we first provide some comments on how to interpret the figures. For a more detailed introduction to the Family Bias Method as such, such readers are referred to Bickel (2013).

The key question that BWZ seek to address is whether a given referential scale shapes the diachronic evolution of language families. BWZ take the synchronic internal composition of each family as indicative of such directed diachronic processes: If a family is significantly biased (on synchronic grounds) towards fitting a scale rather than in the opposite direction, this may be indicative of the family having developed in the predicted direction, either by continually retaining the fit on each evolutionary trial (i.e. with each new daughter language) or by "correcting" a non-fitting case system at the next cladogenetic juncture (i.e. with a new daughter language). A universal signal for scale effects would then amount to most families in a representative sample being significantly biased in the predicted way, again independently of geographical affiliations.

It is obvious that such biases can only be estimated for sufficiently large families (here: $N \geq 5$ members). Bickel's method thus extrapolates these estimations to smaller families and isolates. As a consequence, the synchronic data for a language isolate are not simply taken at face value, but as surviving traces of an erstwhile family that itself may or may not have had a principled bias in differential argument marking. In other words, one reckons with the possibility that a given isolate can be the survivor of a family with the opposite bias, or no bias at all. Depending on how strong and uniform the biases are in large families, the method may thus deliberately introduce some "noise" to the data from small families and isolates, rather than always taking their actual values as we find them in the synchronic data. Because of such "interventions" with the data, the extrapolation

process is repeated hundreds or even thousands of times and the average results of all estimations are then taken as the final basis for exploring universal trends.

It is against this background that BWZ's Family Bias estimations need to be interpreted. Therefore, the following things need to be kept in mind when looking at the figures below:

- The numbers always pertain to *taxa* (i.e. genealogical units) rather than languages.
- The numbers exclude taxa that have been estimated to be *diverse* (rather than biased), as internally diverse taxa are argued not to yield conclusive evidence for the family to be shaped by a given referential scale.
- The figures contain non-integer numbers, as the extrapolation to small families and isolates is repeated many times and averaged over; the results thus display the *means* of several hundreds of runs of bias estimations.

In Table 16 and Table 17, we present the results of BWZ's type model (cf. our §3.1 for comparison).

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In Table 16 and Table 17, we present the results of BWZ's type model (cf. our §3.1 for comparison).

The first column of Table 16 and Table 17 lists the scales that were tested as possible candidates for universal referential hierarchies. As can be seen, each of these scales requires that the manifold language-specific referential categories (like the 3SG.PRO.NHUM category from above) are subsumed under a more general category (like "3" in the first scale or "3/N" in the second). The figures in the remaining columns indicate how many taxa (large and small) were estimated to be significantly biased in the direction predicted by each scale ("fit") or against it ("-fit"). As far as we can tell from the raw data, there is a total of 80 taxa in BWZ's database that show some kind of P-split, so the figures in the last column of Table 2 should be compared against this overall number. For example, out of the 80 taxa, only about 7 show a significant bias towards being driven by the SAP > 3/N scale, i.e. where speech-act participants (= SAP or 1,2) behave differently with regard to case marking from third-person referents (3/N). Conversely, this means that the vast majority of taxa were estimated not to show a significant bias along this scale. Crucially, for the 7 taxa that are estimated to be biased, there is no clear signal in favour of the proposed scale, as in each of the three macro areas compared here, the number of

Table 16: Results of Bickel, Witzlack-Makarevich & Zakharko's (2015: 34) *type-model* analysis of P-splits

Scale	Eurasia		Sahul		Other		*N*
	+fit	-fit	+fit	-fit	+fit	-fit	
1>2>3>N	0.66	0.67	1.35	1.04	0.16	2.87	6.75
SAP>3/N	0.78	0.53	1.21	1.12	1.23	2.19	7.06
SAP>3>N	0.66	0.69	1.32	1.04	0.35	2.58	6.63
SAP>3>N-high>N-low	0.34	0.01	0	0	0.03	0.49	0.87
Pro>N	12.89	1.92	5.93	0.39	8.15	2.75	32.04
Pro/N-high>N-low	8.11	0.08	2.8	0.18	4.55	0.49	16.21
nsg>sg	0	4.3	0.04	0.62	0.19	3.86	9
sg>nsg	2.38	1.98	0.66	1.7	2.23	1.78	10.73

Table 17: Results of Bickel, Witzlack-Makarevich & Zakharko's (2015: 34) *type-model* analysis of A-splits

Scale	Eurasia		Sahul		Other		*N*
	+fit	-fit	+fit	-fit	+fit	-fit	
1>2>3>N	1.74	1.03	0	0	0	0	2.77
SAP>3/N	1.49	0	0	0	0	0	1.49
SAP>3>N	1.51	0	0	0	0	0	1.51
SAP>3>N-high>N-low	0.32	0.01	0	0	0	0	0.33
Pro>N	1.51	0	2.29	0.1	0.52	0.47	4.89
Pro/N-high>N-low	1.56	0.1	1.62	0.05	0.02	0.5	3.86
nsg>sg	1.05	1.69	0	0	0	0	2.74
sg>nsg	0	1.48	0	1	0	0	2.48

scale-conforming taxa is counterbalanced by a roughly equal (or even higher) number of scale-violating taxa. According to BWZ, then, this provides clear evidence against a universal effect of an alleged SAP > 3/N scale, and similar conclusions carry over to most other scales they test: The overall number of biased taxa is extremely small in each case, and the counterevidence is in the same range as the fitting cases (except for Pro > N and for Pro/N_{high} > N_{low}).

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Diachrony of differential argument marking

While there are languages that code a particular grammatical role (e.g. subject or direct object) in one and the same way across the board, many more languages code the same grammatical roles differentially. The variables which condition the differential argument marking (or DAM) pertain to various properties of the NP (such as animacy or definiteness) or to event semantics or various properties of the clause. While the main line of current research on DAM is mainly synchronic the volume tackles the diachronic perspective. The tenet is that the emergence and the development of differential marking systems provide a different kind of evidence for the understanding of the phenomenon. The present volume consists of 18 chapters and primarily brings together diachronic case studies on particular languages or language groups including e.g. Finno-Ugric, Sino-Tibetan and Japonic languages. The volume also includes a position paper, which provides an overview of the typology of different subtypes of DAM systems, a chapter on computer simulation of the emergence of DAM and a chapter devoted to the cross-linguistic effects of referential hierarchies on DAM.

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