1 *Introduction*

1.1 The phenomenon

Many languages exhibit non-uniform grammatical marking of objects. Variations can occur within one and the same language with objects of one and the same verb. For example, in Turkish (Altaic)[1] the object of the same verb either takes the accusative suffix or remains unmarked:[2]

(1) a. Ali bir kitab-ı aldı
Ali one book-**Acc** buy.Past.3Sg
'Ali bought a (certain) book.'
b. Ali bir kitap aldı
Ali one book buy.Past.3Sg
'Ali bought a book.' (Enç 1991:5)

In Palauan (Austronesian), the object of the same verb either does or does not trigger agreement on that verb:

(2) a. Te-'illebed-ii a bilis a rengalek
Subj.3Pl-Perf.hit-**Obj**.3Sg the dog the children
'The kids hit the dog.'
b. Te-'illebed a bilis a rengalek
Subj.3Pl-Perf.hit the dog the children
'The kids hit a dog/the dogs/some dog(s).' (Woolford 2000:5)

Such patterns are widely known under the rubric of **differential object marking** or DOM (a term introduced by Bossong 1985).

We understand DOM as covering both agreement and casemarking (case or adpositional marking on the object). Though we recognise that agreement and casemarking differ both historically and synchronically, as noted by Comrie (1979) and Croft (1988:167–168), among many others, we believe that they share commonalities in the context of DOM, and we will use the cover term

[1] Language families are provided according to the classifications in Ethnologue (Grimes 1999).
[2] References are provided for examples that do not come from our own fieldwork.

(grammatical) marking to refer to them. This approach is in line with Nichols (1986), who analyses agreement and casemarking as alternative strategies for encoding the relation between the head and a dependent, as well as some generative literature, where case and agreement are inherently linked.

The aim of this book is to provide a new view of DOM which encompasses syntactic, semantic, and information-structural differences between marked and unmarked objects. We will make the following claims:

- Marked objects are associated with the information-structure role of **topic**. The association may be either synchronic or historical. Where the direct connection between marked objects and topicality has been lost through grammaticalisation,[3] marked objects in some languages become associated with **semantic features** typical of topics (animacy, definiteness, specificity).
- In some languages, marked and unmarked objects display an identical behavioural profile and can be assigned to the same grammatical function. Other languages distinguish syntactically between marked and unmarked objects: marked objects are **primary objects**, while unmarked objects are **secondary objects**. This reflects the tendency for topical arguments to appear high on the grammatical function hierarchy.

We begin our discussion with a review of previous work; we then present the essential aspects of our claims, and conclude this chapter with an overview of the book.

1.2 Previous work

DOM has been studied from a formal, generative perspective as well as a functional-typological perspective, and has been discussed and analysed by Lazard (1984), Bossong (1985, 1991), de Hoop (1992), Aissen (2003a,b), Næss (2004), and de Swart (2007), among many others. Many of these analyses concentrate either on differential object agreement or on differential object casemarking, including both case and adpositional marking.

1.2.1 Marking as distinguishing arguments

Analyses of grammatical marking (and in particular casemarking) have often appealed to two types of functional motivation: **coding/indexing** and **discriminatory/disambiguating/distinguishing** (Comrie 1979, 1989, de Hoop

[3] We use the term *grammaticalisation* in an extended sense, to refer to a process whereby marking indicating a pragmatic contrast comes to be associated with syntactic or semantic rather than pragmatic features: cf. the broad understanding of grammaticalisation as "the way grammatical forms arise and develop through space and time" (Heine 2004:575).

and Narasimhan 2005, de Hoop and Malchukov 2007, Næss 2007, Malchukov 2008, and others).

Discriminatory/disambiguating casemarking serves to distinguish between different categories: for example, between the two arguments (the subject and the object) of a transitive clause. It encodes the **relation** between two arguments rather than the properties of an individual argument. The discriminatory function of casemarking has been argued to provide a functional motivation for the fact that in many languages casemarking is missing on the single argument of intransitive verbs and on one of the two arguments of transitive verbs. Silverstein (1976) and Comrie (1977) argue that since the basic purpose of formal marking on core arguments is to distinguish the subject from the object, the need to overtly mark the object is greater in some cases than in others because an object with subject-like semantic properties — for example, an animate, specific, or definite object — is more likely to be confused with the subject. Therefore, objects whose semantic features are typical of subjects are more likely to be overtly marked. This approach relies on the concept of the transitive prototype, in which the object is prototypically inanimate, indefinite, and/or nonspecific (Comrie 1989), and maintains that the function of DOM is to signal deviation from the prototype. It also stands in conformance with the widespread functional view that infrequent (and therefore functionally marked) categories receive more formal marking, whereas frequent (and therefore functionally unmarked) categories tend to remain formally unmarked; the explanation for this is based on economy considerations (Haiman and Thompson 1985, Du Bois 1987) and the relation between functional and formal markedness. On this view, DOM is essentially iconic: formal marking on objects reflects their status as atypical or infrequent objects, and thus their functional markedness.

The idea that marking serves to distinguish or differentiate between arguments of a predicate has been pursued in depth in the influential work of Aissen (2003a,b). In her approach, languages may appeal to different factors in DOM, but in all cases the resulting patterns reflect the tension between two functional principles: (i) iconicity between functional and formal markedness of objects, and (ii) economy, the pressure to avoid excessive marking. Following much work in functional typology (Silverstein 1976, Givón 1976, Comrie 1977, 1979, 1989, Du Bois 1987, Dixon 1994), Aissen claims that there is a prototypical association involving grammatical functions and features such as animacy, humanness, definiteness and specificity/referentiality. Subjects are prototypically high in these features, while objects are low. In other words, properties that are unmarked for subjects are marked for objects, a relation known as **markedness reversal**. On this view, unmarked subjects are animate, human, definite and specific, while marked subjects are inanimate and/or non-

specific. For objects, the opposite markedness patterns are at work: inanimate and indefinite/nonspecific objects are unmarked, while nonhuman definite animate objects are more marked, and human objects are most highly marked.

Aissen formalises these correlations as Optimality Theoretic constraints. Referential properties of animacy, humanness, definiteness and specificity are organised into two Prominence Scales, the Animacy Scale and the Definiteness Scale.

(3) Animacy Scale: Human > Animate > Inanimate
Definiteness Scale: Personal pronoun > Proper name > Definite NP > Indefinite specific NP > Nonspecific NP

Humans are located higher on the Animacy Scale than nonhuman animates, which in turn are higher than inanimates, and so on. In addition, Aissen introduces a binary Relational Scale, where the subject outranks the object, as well as several harmonic (or markedness) hierarchies representing the relation between the Prominence Scales and the Relational Scale. The harmonic alignment constraints for animacy and definiteness features are displayed in (4) and (5), respectively.

(4) *Su/Inan ≫ *Su/Anim ≫ *Su/Hum
*Oj/Hum ≫ *Oj/Anim ≫ *Oj/Inan

(5) *Su/NSpec ≫ *Su/Spec ≫ *Su/Def ≫ *Su/PN ≫ *Su/Pro
*Oj/Pro ≫ *Oj/PN ≫ *Oj/Def ≫ *Oj/Spec ≫ *Oj/NSpec

The most highly ranked constraints in (4) penalise inanimate subjects and human objects; the constraints ranked one step lower penalise animate nonhuman subjects and animate nonhuman objects, and so on. The definiteness alignment constraints in (5) work similarly.

These hierarchies predict the most and least marked patterns of subject and object marking across languages. Constraints higher on the hierarchy incur more costly violations than constraints lower on the hierarchy. This means that if an object at a certain point in the hierarchy is overtly marked, then any object that is higher on the relevant scale will also be overtly marked. DOM arises when some but not all objects are marked; this is implemented by correlating harmonic constraint hierarchies with the constraint *STRUC_C, motivated by the needs of economy, which penalises a value for the morphological category CASE below a certain point on the hierarchy.

The position of *STRUC_C in the hierarchy leads to different patterns of object marking across languages. If *STRUC_C dominates all the constraints on

both scales, then marking is banned for all objects. If *STRUC$_C$ is ranked at the lowest point on the hierarchy, all objects receive grammatical marking. Such languages do not display DOM. In languages with DOM, object marking can be based either on the Animacy Scale or on the Definiteness Scale. For example, Aissen (2003b) shows that in Catalan (Romance) only personal pronoun objects are casemarked. This is captured in an Optimality Theoretic account by positioning *STRUC$_C$ lower in the Definiteness Scale than the constraint penalising pronominal objects. Similarly, if *STRUC$_C$ is ranked lower than the top-ranked constraint *Oj/Hum in the Animacy Scale, casemarking is penalised for all objects except the most highly ranked human objects. According to Aissen (2003b:456), such languages are difficult to find, although there are many languages where marking is penalised for all objects except animates (including humans): for example, Sinhala (Indo-Aryan). Further demotion of the economy constraint *STRUC$_C$ yields other patterns of object marking. In Pitjantjatjara (Pama-Nyungan), pronominal and proper name objects are marked, while other objects, including definite objects, are unmarked; this is treated by positioning *STRUC$_C$ below the constraints penalising marking on pronominal and proper name objects. In Hebrew (Semitic), only definite objects require the object marker *et*, while indefinite objects are always unmarked; this means that the economy constraint is ranked lower than the constraint penalising definite objects. Simultaneous reference to multiple features involves more complicated multidimensional crossing of the scales, but the basic principle remains the same.

These pioneering proposals have inspired much subsequent work and discussion, including an exploration of patterns that do not fit neatly into Aissen's cross-linguistic picture. For example, Yang and van Bergen (2007) argue that in Mandarin Chinese (Sino-Tibetan), objects that are obligatorily marked in the *ba*-construction are either highly prominent in terms of animacy or, surprisingly, **low** in prominence in terms of definiteness; for a small category of objects in-between, casemarking is optional. Importantly, the effect of animacy and definiteness is only noticeable on scrambled objects; Yang and van Bergen propose that the syntactic position of the object introduces an additional dimension into the prominence hierarchy which can influence marking. Other works following on from Aissen's work, including Morimoto (2002), propose various readjustments of the original constraint hierarchy, but do not question the general spirit of the prototype deviation approach to DOM.

1.2.2 Marking as coding features

The coding/indexing perspective on marking differs from the discriminatory perspective in that marking is taken to signal specific semantic and/or prag-

matic properties of the relevant argument, rather than a particular relation between one argument and another. In fact, de Hoop and Narasimhan (2005) claim that a purely discriminatory function for casemarking is rare, and that in most instances casemarking serves to signal some aspect of the interpretive content of a phrase. This is particularly clear for obliques, where case can bear an important semantic load in signalling the meaning contribution of the casemarked phrase. In the analysis of DOM, the coding/indexing perspective assumes that the presence of marking is connected to the presence of certain properties of the object. This view goes back to Hopper and Thompson's (1980) classic study, in which DOM is taken to be one of the signals indicating high transitivity, rather than deviation from a transitive prototype.

Næss (2004, 2006, 2007) argues that Aissen's approach contradicts the established notion of transitivity, and proposes that the prototypical transitive clause is one in which the two participants are maximally semantically distinct. Her definition of semantic distinctness includes several parameters, but the parameter that is especially relevant for cross-linguistic patterns of DOM is **affectedness**, understood roughly as involvement in the verbal event and change of state of the participant as a direct result of this event. On this view, prototypical objects are those that are highly affected by the transitive event. Formally marked objects are not functionally marked; instead, they are "prototypical" highly affected and individuated objects, which tend to receive more grammatical marking than "non-prototypical", less affected objects.

Other researchers have also appealed to affectedness as a factor in analyses of DOM: for example, Çetinoğlu and Butt (2008) discuss the role of affectedness in object casemarking in Turkish. However, the relevance of affectedness for DOM has been questioned by de Hoop (2008), who shows that in many cases object marking is present in sentences in which the object participant is not affected by the verbal event. For instance, in Mandarin Chinese the object marker *ba*, often treated as an instance of DOM, is required on objects of the verbs 'forget' and 'lose', although the forgotten or lost thing is not usually affected by the forgetting or losing event. Næss (2004) claims that definite objects are more affected than indefinite ones because the event affects the whole rather than a part (cf. *I drank the milk* and *I drank some milk*). However, in many cases it is difficult to argue that definite or animate objects are more affected than indefinite or inanimate ones, if affectedness is understood in terms of a change of state. De Hoop cites the following Hindi (Indo-Aryan) examples from Mohanan (1994), involving the object marker *ko*:

(6) a. Ilaa-ne haar uṭhaayaa
Ila-Erg necklace lifted.Past.MascSg
'Ila lifted a necklace.'
b. Ilaa-ne haar-ko uṭhaayaa
Ila-Erg necklace-Obj lifted.Past.MascSg
'Ila lifted the necklace.' (de Hoop 2008, citing Mohanan 1994:80)

According to de Hoop, there is no reason to think that the necklace that is picked up in (6b) is more affected than the necklace that is picked up in (6a), even though the former is definite and the latter is indefinite.

In fact, de Hoop and Narasimhan (2005), Næss (2007), and Malchukov (2008) note that in the case of DOM, disambiguating and indexing approaches lead to roughly the same result (though they make different predictions with respect to differential subject marking). Affectedness normally presupposes high individuation of the referent, while individuation in its turn is associated with definiteness. Animacy may also be relevant for affectedness because the effect of an action on an animate entity is more salient for human cognition than the effect on an inanimate entity and is more likely to arouse empathy. Thus, affectedness is ultimately "operationalised" in terms of the same features of prominence as are relevant on the disambiguating/discriminatory marking perspective: when a language decides what kinds of objects are affected enough to be marked, it can choose on the basis of more easily measurable properties such as animacy and definiteness.

De Swart (2006, 2007) proposes an analysis which, in a sense, combines the discriminatory and coding approaches. His model is based on the idea that the speaker takes the perspective of the addressee in order to ensure **recoverability** of the intended interpretation. In some instances this implies that the speaker chooses to mark an object, rather than leaving it unmarked, when he/she wishes to emphasise a certain feature of the object: for instance, definiteness in Hindi. If the speaker intends to highlight definiteness in order to ensure that the addressee will interpret the object as definite, accusative *ko* appears. If the speaker does not want to force a definite interpretation of the object, casemarking is omitted. Thus, marking on the object is the result of a principled decision on the part of the speaker and has a coding function.

Recoverability presupposes "semantic distinctness" between two arguments (cf. Næss 2004). This explains why casemarking on objects can be influenced by the semantic properties of the subject and vice versa. However, de Swart does not account for these patterns in terms of transitivity and, unlike Aissen, does not appeal to prototypical features of subjects and objects. He illus-

trates his analysis with data from languages which seem to best support the disambiguating/discriminatory view of marking. In these languages, DOM is primarily determined by the need to differentiate the subject from the object. De Swart argues that in such languages, sentences with no semantic contrast between agent and patient must show a morphological contrast between them, in order to avoid ambiguity. The relevant semantic dimensions involve familiar prominence features, but are largely language-specific. In Malayalam (Dravidian), for example, object marking is mostly found on animate objects. However, in sentences which can in principle be interpreted in two different ways, it is also found on inanimate objects; the reason seems to be that without overt casemarking, the sentence would be ambiguous.

(7) a. kappal tiramaalakaḷ-e bheediccu
ship.Nom waves-Acc split.Past
'The ship broke through the waves.'
b. tiramaalakaḷ kappal-ine bheediccu
waves.Nom ship-Acc split.Past
'The waves split the ship.'
(de Swart 2007, citing Asher and Kumari 1997)

Such systems are called "global" because marking depends on properties of the subject, properties of the object, and the relation between them, along the lines of the discriminating/disambiguating view of marking. In contrast, "local" systems are those in which the presence of object marking is only dependent on the features of the object itself, along the lines of the coding/indexing approaches. As de Swart notes, global systems present a problem for Aissen's model, since they depend on the simultaneous consideration of properties of the subject and object rather than properties of the object alone, but can be accounted for within the framework of Bidirectional Optimality Theory.

1.2.3 DOM in transformational syntax

Many analyses of phrasal syntax within the transformational paradigm assume two distinct positions for objects, VP-internal and VP-external, and postulate a correlation between object position and object marking (Diesing 1992, Dobrovie-Sorin 1994, van Geenhoven 1998, Torrego 1998, Ritter and Rosen 2001, Woolford 1999, 2000, 2001, de Hoop 1992, among others). The distinction is generally analysed as semantically driven, dependent on a specific vs. a nonspecific interpretation of the object, and it is generally assumed that VP-internal indefinite/nonspecific objects are syntactically less "visible" than VP-external definite/specific ones.

De Hoop (1992) observes that a morphological difference in case in languages with DOM is linked to a semantic difference in the interpretation of indefinites. Her analysis has clear similarities to work by Diesing (1992) on the interpretation of indefinite objects: Diesing suggests that arguments universally excluded from VP-internal positions are specific (or, more precisely, presuppositional), while VP-internal arguments are interpreted as nonspecific. This is formally modelled by assuming that strong NPs must move out of the VP, and that existential closure applies at the VP level to weak, nonspecific indefinite NPs. De Hoop (1992) assumes two categories of NPs, strong (presuppositional) and weak. Strong NPs are "anchors in conversation"; they are semantically characterised as generalised quantifiers and include referential, partitive, and generic expressions. Weak NPs are analysed as existentially quantified. Additionally, there are two kinds of object case: Weak Case, assigned VP-internally at D-structure, and Strong Case, assigned at S-structure to [Spec,AgrO]. A strong NP moves out of the VP to get Strong Case, while Weak Case requires syntactic adjacency to the verb. Overt accusative marking on VP-external objects is analysed as the morphological realisation of abstract Strong Case. This is exemplified, for instance, in Turkish, as shown in (1), where the marked and unmarked object receive specific and nonspecific interpretations, respectively.

These works deal only with casemarking, but since case and verbal agreement are treated as two aspects of the same phenomenon in this framework, roughly similar analyses have been proposed for differential object agreement. Both case assignment/checking (depending on one's syntactic assumptions) and agreement are treated in terms of movement of the object to the specifier position of the relevant agreement head. In object-agreement languages, agreement serves as a specificity licenser, as argued by Mahajan (1992), among others.

Subsequent work has made it clear that specificity is not the only feature responsible for DOM. Adopting the premise that VP-internal and VP-external object positions may be associated with different semantic properties, Woolford (1999, 2000, 2001) aims to explain which objects occupy which of these positions and why, taking into account more complex patterns where there is no single semantic feature that triggers movement out of the VP and agreement. Instead, a VP-external object may have any of several distinct clusters of features.

The basic premise of Woolford's proposal is that economy keeps objects in their base VP-internal positions unless that would incur a violation of the Exclusion Principles. Exclusion Principles are modified versions of Diesing's mapping principles, which exclude NPs bearing certain features from the VP-

internal object position. Woolford assumes a family of Exclusion Principles based on different semantic features including specificity, humanness, animacy, and number; on her view, these are separate principles and cannot be reduced to one more general principle. Each Exclusion Principle can be independently active in a language. The economy principle Avoid Movement, which prohibits moving objects out of their base position (Chomsky 1995), ensures that objects remain within the VP unless this violates one or more Exclusion Principles. Cross-linguistic differences in restrictions on agreement are dealt with in terms of different rankings of various Exclusion Principles and the economy principle Avoid Movement.

In some languages DOM seems to depend on aspectual features of the verb. The idea that object marking correlates with aspect has been explored by Ramchand (1997), Meinunger (1998), Woolford (2000) and others. Woolford (2000) claims that aspect in Palauan determines the ranking of Exclusion Principles which govern object casemarking. Ritter and Rosen (2001) provide a more sophisticated analysis, arguing that in languages with DOM the split in object marking is determined by the presence or absence of the feature [QUANT(ISATION)]. Quantised objects (their Class I objects) must check their QUANT feature, forcing such objects to move out of the VP and triggering agreement or casemarking, while nonagreeing or noncasemarked objects (their Class II objects) are not quantised and remain within the VP. The specific semantic contribution of the feature differs from language to language. When [QUANT] is an inherent feature of the verb, it has aspectual meaning: it encodes delimitedness or boundedness of the event. According to Ritter and Rosen (2001), this situation is exemplified in Finnish (Uralic), where objects of bounded events stand in the accusative case and objects of unbounded events take the partitive case; in Palauan, where object agreement correlates with boundedness of the event (as expressed through perfectivity); and in Mandarin Chinese, where the *ba*-construction is only possible with delimited events. On the other hand, when [QUANT] is a feature of the functional head Agr, it is uninterpretable and lacks inherent semantic content. In this case DOM is not sensitive to event type; instead, [QUANT] enters into a checking relation with definite/specific/animate objects, as in Turkish, Hebrew or Bantu. Ritter and Rosen (2001) do not explain why different semantic types are involved in object split in these languages, but emphasise the importance of treating [QUANT] as a feature which bears on the interpretation of verbs as well as objects, and which can be realised either as object case or object agreement.