

Full vs. clitic vs. bound determiners

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1 Introduction: a tripartite contrast

This chapter explores the tripartite distinction full–clitic–bound, well known from the theory of pronouns, with regard to determiners. To introduce the contrast, let us consider a bound determiner in Swedish (1), a clitic determiner in English (2) and Bulgarian, (3)–(4), and a full determiner again in Swedish, (5)–(6). For now we focus only on the morphophonological properties of the determiners involved.¹

- (1) häst-**en**
horse-COM.SG
'the horse' [SWEDISH]
- (2) **the** dog

While in English *the* procliticizes to the first predicate in the noun phrase, in Bulgarian the determiner of interest is the first predicate's enclitic.

- (3) momce-**to**
boy-DEF.M.SG
'the boy' [BULGARIAN], Dobrovie-Sorin and Giurgea (2006:93)
- (4) goljamo-**to** momce
big-DEF.M.SG boy
'the big boy' [BULGARIAN], Dobrovie-Sorin and Giurgea (2006:93)

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¹The glosses are as follows: ABL = ablative, ACC = accusative, AOR = aorist, CAUS = causative, COM = common gender, DAT = dative, DEF = definite, F = feminine, GEN = genitive, IMP = imperative, IMPF = imperfective, LIN = linker, M = masculine, NEG = negation, N = neuter, NOM = nominative, PL = plural, PASS = passive, PST = past, PF = perfective, POT = potentialis, PRS = present, Q = quantifier, SG = singular, TOP = topic, w = weak (for North Germanic languages adjectival forms used in plural and definite contexts), 3SGO = 3rd person singular object agreement, 3SGS = 3rd person singular subject agreement. Unless otherwise indicated, grammaticality judgements come from my fieldwork. Examples from Germanic languages are given simplified glosses (literal English translation).

- (5) **den** (helt) vita häst-en
 DEF.COM.SG (fully) white horse-DEF.COM.SG
 ‘the (fully) white horse’ [SWEDISH]

(6) **den** häst-en
 DEF.COM.SG horse-DEF.COM.SG
 ‘that horse’ [SWEDISH]

1.1 Separability

The affixal determiner in (1) cannot be separated from the nominal stem by any material containing lexical roots. Consider severely ungrammatical (7) with an adverb and an adjective between the nominal stem and the affixal determiner.

Only functional morphemes, such as the plural suffix, can intervene, as in (8).

- (8) häst-ar-na
horse-PL-DEF.COM.PL
'the horses' [SWEDISH]

In contrast, clitic and full determiners can be separated from the nominal stem by adjectival phrases or quantifiers, as in (4), (5), (9) and (10).

1.2 Scoping over coordination

Bound determiners cannot scope over a constituent larger than a stem (with or without a plural suffix).² In (11), each of the nominal stems, *häst* ‘horse’ and *ko* ‘cow’, has to carry a separate affixal determiner.

- (11) häst*(-en) och ko*(-n)
 horse-DEF.COM.SG and cow-DEF.COM.SG
 'the horse and the cow' [SWEDISH]

Ctic and full determiners can scope over coordinated nominals, as (12)–(13) and (14)–(15) illustrate, respectively.

- (12) the useful dog and faithful friend
 (13) nova-ta i interesna kniga
 new-DEF.F.SG and interesting book
 'the new and interesting book'

²Scoping over a coordination is a classification criterion for the affix-clitic distinction in Miller (1992) and Spencer and Luis (2012), among others.

- (14) **den** användbara hund-en och trofasta vän-en
 DEF.COM.SG useful dog-DEF.COM.SG and faithful friend-DEF.COM.SG
 'the useful dog and faithful friend' [SWEDISH]

(15) **den** hund-en och vän-en
 DEF.COM.SG dog-DEF.COM.SG and friend-DEF.COM.SG
 'that dog and friend' [SWEDISH]

1.3 Stressability

Neither the clitic nor the bound determiners can be stressed. In contrast, the full determiners in (6) and (15) can carry stress.³ The main question to be addressed in this chapter is whether these morphophonological properties have any robust syntactico-semantic correlates for the class of determiners I will loosely call definite for now (but will suggest a more fine-grained classification eventually).⁴

1.4 Overview

A substantial literature has been dedicated to the syntactic underpinnings of various morphophonological properties of pronominal morphemes (e.g. Zwicky and Pullum 1983, Progovac 1996, Roberts 2010, Anderson 2011, to name just a few). In particular, Cardinaletti and Starke (1999) developed a general mapping between morphophonological and syntactico-semantic properties of pronominals. For the determiner morphemes this issue has not been addressed from a general perspective, although the structural status of clitic determiners in various languages has been discussed (e.g. Giusti (1994) for a comparison between Germanic and Romance (Romanian) clitic determiners).⁵

On the semantic side, Schwarz (2009) proposed for German an analysis of the contrast between the so called weak and strong determiners, the former being characterised by unseparability from a preposition whenever there is one and unstressability and the latter by separability and stressability. The semantico-syntactic pivot of the contrast, according to Schwarz (2009), is the presence/absence of a silent pronominal element in the projection of a determiner. In this chapter, I build on this insight and propose that the presence/absence of a silent pronominal element together with a relative clause component is what underlies the full-clitic part of the tripartite distinction.

The clitic-bound determiner distinction from the morphosyntactic angle has received a lot of attention in relation to the Mainland North Germanic languages (Taraldsen 1990, Santelmann 1993, Hankamer and Mikkelsen 2002, Julien 2005, Kester 1993, Anderssen

³Instances of stressed prenominal determiners in Swedish and Norwegian are sometimes labelled as (distal) demonstratives (e.g. Faarlund 2009:630). As will be discussed in detail below, there are reasons to adopt a more parsimonious analysis assigning the same (full) structure to all cases of prenominal determiners with the stress parameter following from whether one of the arguments in this structure is realized as a free silent pronominal or a reduced relative clause.

⁴The class under consideration can be identified with what Farkas and Brașoveanu (2013:360) call ‘anti-variation’ determiners, which “impose a constraint that leads to relative stability of reference” as opposed to ‘pro-variation’ determiners, which “impose a constraint that leads to relative variability of reference”.

⁵Lyons (1999) distinguishes between free-standing, phrasal, and bound definite articles. He notes that free-standing articles can be considered to be Zwicky's "simple clitics" in many instances, that is, unstressed, leaning onto a host, but occupying the same syntactic position as its full counterpart (Lyons 1999:65). Determiners that I classify here as "full" forms are treated under the label demonstratives in Lyons (1999). Concerning the class of phrasal clitics, Lyons (1999:72) notes that "[i]t is not certain whether they are a distinct phenomenon from the clitics already discussed".

2005, Lohrmann 2008, Katzir 2011, among others). The semantic side of the contrast is less studied. It got into the spotlight with the seminal study of Turkish differential object markers by Enç (1991) (and further explored in Kelepir (2001), Von Heusinger and Kornfilt 2005, Kornfilt and von Heusinger 2009 among others) but, to the best of my knowledge, there has been no comparative study focusing on the semantic properties specific to bound determiners. Based on the patterns from the literature as well as on the original data from several Finno-Ugric and a Mongolian language, I will propose a parameterization of the semantic space covered by bound determiners.

The chapter is structured as follows. In the next section I discuss syntactico-semantic correlates of the full–clitic distinction on the Germanic material. This discussion also serves to introduce some technical assumptions which I will then use throughout the chapter. Section 3 is concerned with a typological split between bound determiners which trigger a maximal interpretation and those which do not. In section 4 I propose a semantic typology of the non-maximality-based bound determiners. Section 5 gives a summary of the discussion.

2 Full and clitic determiners

Leaving the affixal or bound determiners aside for a while I first focus on the full–clitic contrast. As discussed in Chapter ADD of this volume, a number of German dialects feature two morphophonologically distinct paradigms of definite determiners: *strong* and *weak* (see references for works on different dialects in Schwarz (2009:11–12)), which in terms of the tripartite distinction discussed here corresponds to the full–clitic contrast. The Austro-Bavarian paradigm in Table 1 illustrates the contrast.⁶ Unlike in Standard German where the morphophonological contrast shows up in writing clearly only in prepositional phrases, Austro-Bavarian maintains the distinction in all syntactic contexts.

Table 1: Austro-Bavarian full (strong)/clitic (weak) definite articles

	M.SG	F.SG	N.SG	M.PL	F.PL	N.PL
NOM	dea/da	die/d	des/(i)s	die/d	die/d	die/d
ACC	den/(i)n	die/d	des/(i)s	die/d	die/d	die/d
DAT	dem/(i)m	dea/da	dem/(i)m	dea/da	dea/da	dea/da

To illustrate the distinction further, the full/clitic pairs for Dutch, English, and French are (the paradigms of) *die/de*, *the/that*, and *ce/le*, respectively.

2.1 Contextual antecedents

In addition to the morphophonological distinction, the two classes of determiners in German differ in their distribution. In a nutshell, clitic determiners are used in contexts which entail the existence of a unique individual with the nominal property in the relevant situation; the full (or strong) determiners appear in the context of anaphoric antecedents or relative clauses. Putting relative clauses aside for a moment, Schwarz (2009) captures the distributional contrast by proposing that the extended projection of strong determiners involves an additional argument (together with the NP which is also present in the

⁶The table is based on the data presented in Wiltschko (2012:6).

weak determiner's projection), namely, a silent individual pronoun. This is schematised in (16-a)–(16-b) where i is the index of a silent individual pronoun.⁷

- (16) a. DP with a clitic determiner: $DP[D \ NP]$
- b. DP with a full determiner: $DP[i \ [D \ NP]]$

The structure of a DP with a full determiner is thus more complex by virtue of involving more elements, and the lexical entries denoted by D in the two cases differ correspondingly: the semantic object denoted by the full determiner takes an additional individual-type argument.⁸ Schwarz (2009) adapts for German strong determiners an analysis of English demonstratives of Elbourne (2008), who, in turn, builds on the proposal of Nunberg (1993).

- (17) a. $\llbracket D_{clitic/weak} \rrbracket = \lambda P_{\langle e,t \rangle} : \exists!x[P(x)] . \iota x[P(x)]$
- b. $\llbracket D_{full/strong} \rrbracket = \lambda P_{\langle e,t \rangle} . \lambda y : \exists!x[P(x) \ \& \ x = y] . \iota x[P(x) \ \& \ x = y] (= y)$

Assuming the presence of a pronominal element models two most prominent semantic properties of full determiners, that is, their need to have an antecedent and their direct referentiality or scopelessness, to use the term of Heim (2004). Namely, the former property is captured on the assumption that in order to be interpreted, pronominal elements have to have suitable salient individuals as possible values. Or, in model-theoretic terms, for the interpretation to proceed, an assignment function interpreting a pronominal element has to have a suitable individual in its range.

The second property, scopelessness or the insensitivity of DPs with full determiners to intensional quantifiers (e.g. quantifiers over situations), is illustrated in (18), which contrasts with (19) involving a clitic determiner in that the denotation of the object DP does not co-vary with the universally quantified summer situation.

(Previous discourse: Every year one house on the seaside remains unrented.)

- (18) Jedn Somma mietet si da Otto **des** Haus.
every summer rents himself det_{weak} Otto det_{strong} house
'Every summer Otto rents that house.' (The same house every year.) [AUSTRO-BAVARIAN], Simonenko (2014a:65)

(Previous discourse: Every year one house on the seaside remains unrented.)

- (19) Jedn Somma mietet si da Otto **s'** Haus.
every summer rents himself det_{weak} Otto det_{weak} house
'Every summer Otto rents the house.' (Can be a different house every year.) [AUSTRO-BAVARIAN], Simonenko (2014a:65)

The scopelessness of the full determiners follows from the interaction between the proposed denotation of full determiners and a pronominal element. Specifically, presuppositional contents aside, the function they denote, on Elbourne/Schwarz' treatment, returns the individual denoted by the pronoun.

⁷In order to simplify the presentation, I leave aside here the important aspect of domain restriction. In Elbourne (2008) and Schwarz (2009) it is realized in the Kratzerian situation semantics framework. Accordingly, lexical entries are intensionalized by a situation argument. Here I take an extensional version while asking the reader to keep in mind that all claims about quantification are supposed to be relativized to a situation.

⁸Similarly, Beck (2007) suggests that there is a relation between requiring an anaphoric antecedent and relative structural complexity.

2.2 Relative clauses

The original analysis in Elbourne (2008) assumes a slightly more complex lexical entry than (17-b) in that the relation between the semantics of the pronominal element and the eventual denotation (the unique individual with relevant properties) is mediated by a variable over relations R. R takes different values depending on the context, such as the relation of identity, the relation of being an instance of and others. The semantic role of R is then to turn the referent of the pronoun i into a property of being identical (or related in some other way) to that referent. Set to the identity relation, R lexicalizes the *ident* operation of Partee (1987). An extensional version of Elbourne's denotation for R looks as in (20).

$$(20) \quad \llbracket R \rrbracket = \lambda y_e . \lambda x_e . x = y \quad (\text{adapted from Elbourne (2008:423)})$$

Simonenko (2014a), building on Elbourne/Schwarz' insight, proposes a DP architecture which differs minimally for clitic and full determiners in that only the latter involve a projection headed by a relational predicate R. This move makes it possible to maintain the same lexical entry for D for all DP types, thus establishing a one-to-one mapping between lexical entries and functional heads. On this account, R comes out as a semantic and syntactic mediator between the nominal predicate and an individual pronoun (indexed with i in (21)). I assume that the denotation of the individual pronoun undergoes Partee's *ident* type shifting in order to combine with the denotation of R: $\text{ident}(g(i)) = \lambda x . x = g(1)$, where g is an assignment function mapping pronominal indices to individuals.

$$(21) \quad DP[D [i_{RP}[R NP]]]$$

$$(22) \quad \llbracket R \rrbracket = \lambda P_{\langle e,t \rangle} . \lambda Q_{\langle e,t \rangle} . \lambda x_e . P(x) \& Q(x)$$

The full and clitic determiners can then be seen as spellout variants of D in a structure with and without R, respectively.⁹

Notice that the semantics of R in (22), together with an *ident*-shifted denotation of an individual pronoun, achieves the same effect as the Variable Insertion rule proposed in Fox (2002) for relative clauses: it corresponds to a complex property consisting of a property to be identical to some individual (referent of the pronoun) and another property (nominal).¹⁰ This is a welcome parallel because of a special role overt relative clauses play in the distribution of full determiners.

Recall that in Austro-Bavarian (as well as in Standard German), relative clauses form the second major type of environment, in addition to the antecedent providing ones, where free determiners can be used. This is illustrated in (23) where RRC stands for a restrictive relative clause.

$$(23) \quad \begin{array}{lllllll} \text{Dea} & \text{Briaftroga} & [\text{dea} & \text{wos} & \text{bei} & \text{uns} & \text{austrogn} & \text{hot}]_{RRC} \end{array} \quad \begin{array}{lllllll} \text{is} & \text{jetz} & \text{in} \\ \text{DEF.NOM.M.SG} & \text{mailman} & \text{DEF.NOM.M.SG} & \text{COMP} & \text{at} & \text{us} & \text{delivered} & \text{has} & \text{is now in} \end{array}$$

⁹ Alternatively, the full determiner can be analysed as spanning a sequence of functional heads, D and R, in nonsyntaxtic terms, or else as a spellout of a complex head D-R on a head-movement analysis.

¹⁰Fox (2002:67) formulates Trace Conversion as a two-step procedure for interpreting relativized noun phrases which involves a) inserting an identity predicate next to the lower copy of the nominal predicate (Variable Insertion) and b) inserting a definite determiner in front of the resulting complex predicate (Determiner Replacement):

- a. Variable Insertion: (Det) Pred → (Det) [Pred $\lambda y(y = x)$]
- b. Determiner Replacement: (Det) [Pred $\lambda y(y = x)$] → the [Pred $\lambda y(y = x)$].

Pension.

retirement

'The mailman who delivered mail in our neighborhood is now retired.' [AUSTRO-BAVARIAN],
Wiltzschko (2012:2)

The same holds for the Mainland North Germanic free determiners, which in the presence of a relative clause can appear without an antecedent, as in (24) from Swedish.

- (24) Jag skulle vilja ta hem den hund-en [som jag såg igår]_{RRC}
I should want take home DEF.COM.SG dog-DEF.COM.SG which I saw yesterday
'I would like to take home the dog that I saw yesterday.' [SWEDISH]

The same is also true of English *that*, which can normally be used as an anaphoric demonstrative requiring an antecedent. Unlike in (25-a), the use of *that* in (25-b) is felicitous out of the blue and does not necessitate an antecedent.

- (25) a. I've just bought that bike. (Infelicitous without an antecedent.)
b. I've just bought that bike [that I saw yesterday in the bike shop near our place]_{RRC}.
(Felicitous without an antecedent.)

Descriptively, it looks like a relative clause can substitute for an antecedent. This pattern is found again and again in different languages. (26)–(29) illustrate this for Dutch, French, Ukrainian, and Persian. In all cases the object DP does not require an antecedent, in contrast to a corresponding DP without a relative clause.

- (26) Maar natuurlijk sturen ze **die** persoon [die er net werkt en van niets weet]_{RRC}.
but naturally send they that person who there just works and of nothing knows
'And naturally they send that person who just started working there and knows nothing about it.'
- [DUTCH]¹¹
- (27) J' ai achéé **cet** écharpe [que j' ai vu hier]_{RRC}.
I have bought that scarf that I have seen yesterday
'I have bought that scarf which I saw yesterday.'
- [FRENCH]
- (28) Ja bač-iv **togo** čolovik-a, [jakyj prisla-v nam podarunok]_{RRC}.
I.NOM see-PST.F that.ACC person-ACC who.nom send-PST.M us gift.ACC
'I saw that person who sent us a gift.'
- [UKRAINIAN]
- (29) mæn **an** rusæri ra [ke diruz did-æm]_{RRC} xærid-æm
I that scarf spec that yesterday see-PST.1SG buy-PST.1SG
'I bought that scarf that I saw yesterday.'
- [PERSIAN]

Assuming the representation in (21), I suggest that free determiners and overt relative clauses share a core component which creates a property out of a property to be identical to some individual (represented by an individual variable) and the property denoted by the nominal predicate. I will call it a *primitive relative clause* component. In DPs with free determiners without an overt relative clause the individual variable corresponding to the identity target stays free and gets its value from the context, as in Figure 1, while in DPs with free determiners and overt relative clauses there is a further operation of binding the individual variable in question, as in Figure 2, where a relative operator binds the individual pronoun with the index i, while the relational head with the nominal predicate as its complement moves (or gets copied) to a

¹¹The example is taken from <https://context.reverso.net>.

position adjoined to the relative CP.¹²

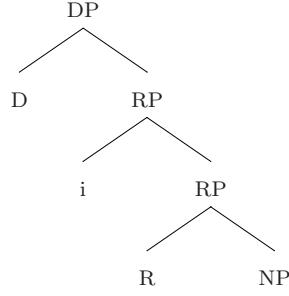


Figure 1: Full determiner structure with an unbound pronoun

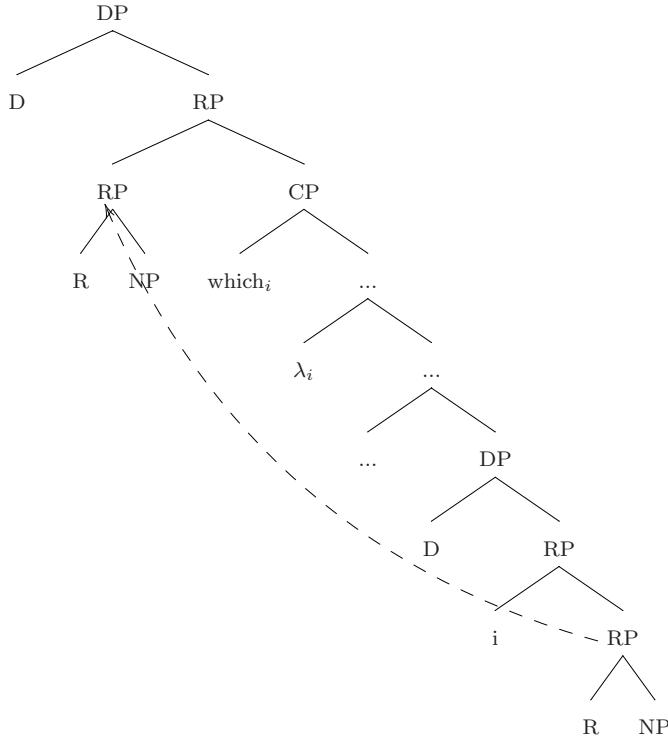


Figure 2: Full determiner structure with a bound pronoun

This analysis captures the empirical fact that overt relative clauses remove the scopelessness of full determiners, that is, make them sensitive to the presence of intensional operators.¹³ Consider the following pair of examples where only in the presence of a relative clauses can the meaning of *that house* covary with the temporal variable bound by the universal quantifier.

- (30) a. Every year John rents **that** house. (Can only be interpreted as the same house every year)

¹²For space reasons I do not provide a step by step composition here, but the reader is invited to verify that Figure 2 results in the same interpretation as trace conversion in Fox (2002), making a parallel assumption that both higher and lower copies of RP get interpreted.

¹³The problem of free demonstratives manifesting both directly referential or scopeless and quantificational behaviour is addressed in King (2001), Dever (2001), Powell (2001), Simonenko (2015).

- b. Every year John rents **that** house [which he sees in the newest TV ad]_{RRC}. (Can be a different house every year)

A full determiner then corresponds to a *structurally more complex* lexical entry, which involves D and R functional heads, as well as a pronominal element, whereas a clitic corresponds to a simple D head.¹⁴ The R head in the representation of the full determiners can be considered as a structural analogue of Fox' syncategorematic Variable Insertion rule (see footnote 10).¹⁵ This conclusion has been reached based on the facts about the semantic distribution of full determiners, that is, that they require either an antecedent or a relative clause and the two contexts are in complementary distribution. Assuming that weakly inflected adjectives in North Germanic correspond to reduced relative clauses, as in Leu (2008) and Cinque (2010:141-142), this analysis captures the use of full determiners in cases like (5), repeated in (31).

(31)	den	(helt) vit-a häst-en	
		DEF.COM.SG (fully) white-W horse-DEF.COM.SG	
		'the (fully) white horse'	[SWEDISH]

We can now address the question about whether the morphophonological contrast between full and clitic determiners can be mapped onto the syntactico-semantic contrast in a non-stipulative fashion. The two prominent morphophonological facts about clitic (weak) determiners in German is that they are never stressed and that they enclitise onto prepositions if the relevant NP is embedded within a PP and proclitise onto the NP if it is not. Consider (32) where the article *s* clitisizes onto an adjectival modifier in an NP with an elided noun.

(32)	I nimm s'	gleiche.	
	I take	DEF.N.SG.ACC same	
		'I will take the same.'	AUSTRO-BAVARIAN

Simpleton functional morphemes are widely assumed not to be able to form stress domains by themselves, but, instead, become part of another prosodic projection (e.g. Selkirk 1996). It is then expected that D, spelled out on its own, leans either onto a preposition or on an NP. In contrast, a full determiner in a DP without an overt relative clause corresponds the spellout of D plus another projection, RP, involving a pronominal element, and therefore, I suggest, forms its own stress domain. Notably, full determiners do not receive stress in the presence of relative clauses, which is accounted for by structure in Figure 2 where the higher copy of RP does not have a pronominal element. The same analysis accounts for the absence of stress in Swedish (5), if Swedish weakly inflected adjectives are analyzed as reduced relative clauses.

Taking stock of the discussion so far, I propose the following mapping between the morphophonological, on the one hand, and syntactico-semantic, on the other, properties:

D (<i>t</i> operator)	R (\approx Variable Insertion)	individual pronoun
full stressed	✓	✓
full unstressed	✓	✓
clitic	✓	

Table 2: Morphophonological and semantico-syntactic alignment

¹⁴Here I am assuming a nanosyntactic model of morphology whereby a syntactic (sub)structure can be stored in the lexicon and correspond to what looks like a morphological unit (Ramchand (2008), Starke (2009), Caha (2013), Baunaz and Lander (2018) and references therein).

¹⁵Poole (2018:231) makes a similar observation. On his analysis in some cases insertion of a strong determiner replaces the Variable Insertion rule.

The three relevant components are thus an iota operator, a relational predicate R, and a variable over individuals. I have proposed that their various combinations result in different types of determiners, namely, in what is descriptively known as full and clitic determiners. In particular, I have suggested that the stressability is a phonological manifestation of the presence of an unbound pronominal element in the structure of a determiner.

I have assumed that the main role of the relational predicate is to introduce an identity relation (with the referent of the individual pronoun) (cf. (22)). It appears, however, that cross-linguistically we may want to let R encode other types of relations, as suggested in Elbourne (2008). Consider three different uses of the Japanese determiner *so*, where in (33) the relevant relation appears to be identity, in (34) member-of, and in (35) a possessive relation (broadly construed).

(Context: John, Bill, and Mike are very good students.)

- (33) Sensei-wa **so**-no san nin-no danshigakusei-o hometa.
teacher-TOP so-LIN three CL-LIN male.student-ACC praise.PST
'The teacher praised these three male students.'

Takamine (2014:37)

- (34) Mongoru-no rikishi-wa totomo tsuyoi. Taro-wa **so**-no mongoru-no
Mongol-LIN sumo.wrestler-TOP very strong Taro-TOP so-LIN Mongol-LIN
rikishi to taisen suru.
sumo.wrestler with match do
'Mongolian sumo-wrestlers are very tough. Taro will be matched against a Mongolian
sumo-wrestler.'

Takamine (2014:38)

- (35) Dono zyooshi-mo **so**-no buka-o shikatta.
every boss-Q so-LIN subordinate-ACC criticized
'Every boss criticized his subordinate.'

Takamine (2014:39)

In general, Diessel (1999:24) notes that it is typologically not rare for demonstratives to encode a possessive relation with the referent of an antecedent expression. I will return to the topic of typological variation in the range of relations associated with R in the discussion of bound determiners in section 4.

At the outset of the chapter a tripartite contrast between full, clitic, and bound or affixal determiners was introduced. I have used German data as a case study to analyze semantico-syntactic underpinnings of the full–clitic distinction. In the next section I consider bound determiners from the perspective of a typological split between absence/presence of a maximal interpretation.

3 Bound determiners I: maximality quantifiers

In section 1 bound determiners were illustrated by the Swedish case. Morphophonologically, they were defined as unseparable from their host (a noun or a preposition), not able to scope over a coordination, and unstressable. Similar determiners, picking out a unique or maximal individual with the nominal property, are found in the rest of North Germanic languages, as well as in Abkhaz, Albanian, Amharic, Arabic, Hebrew, Macedonian, and Romanian, among others.¹⁶ Examples (36) and (37) show bound definite determiners in Danish and Amharic, illustrations for other languages coming later in the discussion.

- (36) pige-n
girl-DEF.COM.SG

¹⁶Doron and Meir (2015) report that in colloquial Hebrew the definite determiner *ha* is becoming a (phrasal) clitic clining onto the top-most phrase in a DP rather than a bound affix.

'the girl'

[DANISH]

- (37) lijj-očč-**u**
child-PL-DEF.M
'the children'
[AMHARIC], Workneh (2011:24)¹⁷

Lyons (1999:73) classifies Amharic and Romanian determiners as clitics, on a par with the Bulgarian case. However, the former two pattern differently in that they cannot scope over coordination, unlike the definite determiner in Bulgarian. Compare (38) and (39) with (13) above.

- (38) t'ik'ur-**u** inna sämayawi-w kwas
black-DEF and blue-DEF ball
'the black and/or blue ball'
[AMHARIC], Kramer (2010:209)
- (39) frumos-**ul** şı mare*(-le) oraş
beautiful-DEF and big-def city
'the beautiful and big city'
[ROMANIAN], Dobrovie-Sorin and Giurgea (2006:82)

To this group can be added two other families of affixes which have been reported to determine the reference of a noun phrase in one way or another. First, there is a family of bound specific determiners which do not necessarily pick out a unique individual with the nominal property. Such determiners are found in (Moksha) Mordvin, (40), Persian, (41), and Turkish, (42), among others.

- (40) Ole rama-s' kolmə kniga-t. Fke kniga-**t'** son kaz-əz'ə
Ol'a buy-PST.3SG three book-PL one book-DEF.SG.GEN she give-PST.3SGO.3SGS
Kost'-ən'd'i.
Kost'a-DAT
'Ol'a bought three books. She gave one book to Kost'a.'
[MOKSHA MORDVIN]
- (41) Dirooz panj ta sag did-əem. Emrooz yeki-shoon-**o** did-əem.
yesterday five unit dog see-PST.1SG today one-of-them-DET see-PST.1SG
'Yesterday I saw five dogs. Today I saw one of them.'
[PERSIAN]
- (42) Meyva-lar-dan üç elma-**yı** ye-di-m.
fruit-PL-ABL three apple-ACC eat-PST-1SG
'I ate three apples of the (set of) fruits.'
[TURKISH], Kornfilt and von Heusinger (2009:21)

The distribution of bound specific determiners may be subject to syntactic restrictions, a phenomenon known as differential argument marking. For instance, in Persian they occur only in direct object positions.

Second, there are so called possessive affixes which can also be used on interpretations that do not involve a relation with an explicit or implicit possessor. Such determiners are found in (Western) Armenian, (43), Chaha, (44), (Barguzin) Buryat,(45), Indonesian, (46), and (Meadow) Mari, (47), among other languages.

- (43) oto-ner-e-**n** yerek had-ə kɔv-c-ve-c-an
car-PL-ABL-DET three cl-3SG steal-CAUS-PASS-AOR-3P
'Three of the cars were stolen.'
[WESTERN ARMENIAN], Sigler (1997:114)

¹⁷Amharic definite suffixes are homophonous with 3rd person possessive suffixes (see Rubin (2010) for a discussion).

- (44) Muk^yər bää-x^wet enät yëšägi. At-äta yää-däng^ya muk^yər, at-äta yää-gämya
 bonfire in-two kinds one.divides one-3SG.N of-children bonfire one-3SG.N of-adults
 muk^yər.
 bonfire
 ‘The bonfire is divided into two kinds. The one is the children’s bonfire; the other is
 the adults’ bonfire.’ [CHAHĀ] Rubin (2010:110)
- (45) Bi gurban ajaga aba-a-b. Näge ajagy-en’ egeš-edə belegle-xe-b.
 I three cup buy-PST-1SG one cup-3SG sister-DAT give-POT-1SG
 ‘I bought three cups. One cup I will give to my sister.’ [BARGUZIN BURYAT]
- (46) Saya mau ke kantor pos tapi tidak tahu jalan-nya.
 I want to office post but not know way-3SG
 ‘I want to go to the post office, but I don’t know the way.’ [INDONESIAN] Rubin (2010:107)
- (47) Məj tengeče kum kniga-m nal-ən-am. Ik kniga-ž-əm Kost'a-lan
 I yesterday three book-ACC buy-PST-1SG. one book-3SG-ACC Kost'a-DAT
 pölekl-em.
 give-PRS.1SG
 ‘Yesterday I bought three books. I will give one of them to Kost'a.’ [MEADOW MARI]

I thus distinguish three types of bound determiners: bound definite, bound specific, and bound possessive determiners. Despite the seeming diversity, there emerges a robust generalization which potentially sheds light onto the semantic correlates of the bound determiner status. Namely, there appears to be an alignment between the availability of maximal quantification as part of the meaning of a bound determiner and a requirement that there be a determiner at the edge of a DP. This connection is explored in the next section.

3.1 Maximal vs. non-maximal distinction

Bound determiners can be divided into two large classes on semantic grounds, namely, whether or not they trigger maximal quantification of the kind associated with Germanic full and clitic determiners in the Fregian tradition as adapted by Sharvy (1980) and Link (1983) for both singular and plural noun phrases. On this tradition, noun phrases with definite determiners denote a maximal individual having a nominal property. In addition, they denote conditionally in that they have a denotation only in case the context (as shared knowledge) meets certain requirements, namely, if there exists a maximal individual having the nominal property.¹⁸ The latter condition, or presupposition, is often implemented as a definedness condition on the function denoted by the definite determiner, as in (17-a). If this condition is met, a definite NP contributes to the truth-conditions of a sentence a clause that the property predicated of the relevant noun phrase (i.e. the property which obtains if the relevant DP is replaced by an individual variable) holds of the maximal member of the nominal denotation. This means the clausal predicate should hold of a unique atomic individual with the nominal property in case of singular NPs and of all atomic individuals with the nominal property in case of plural NPs.

As in many other languages with determiners encoding maximality, in Swedish a bound singular determiner cannot be used in a context where there is more than one individual with

¹⁸ Assuming, with Sauerland (2003), that a singular NPs denotes a set of atomic individuals and a plural one – a set of both atomic and sum individuals, there is a maximal individual in the denotation of a NP if it contains only one atomic individual; there is a maximal individual in the denotation of a plural NP if there exists a largest sum individual in it. As most cases of quantification of natural language, maximality has to be relativized to a particular domain, Heim (2011). For an overview of approaches modeling domain restriction see Schwarz (2009:73-125). For a discussion (and a solution) of the problem of the possibility of a non-maximal interpretation of definite plurals see Križ and Spector (2021).

the relevant nominal property, as (48) illustrates. This is expected if we assume that *hunden* has a denotation only if there exists a unique atomic dog in the extension of the NP in the situation under discussion. The context, however, entails that there are multiple dogs in that situation, and so the condition on the use of *-en* is not met.

- (48) Jag såg fem hund-ar igår. #Idag träffa-de jag hund-en.
 I see.PST five dog-PL yesterday today meet-PST I dog-COM.SG.DEF
 Intended: ‘I saw five dogs yesterday. Today I met one (of the dog).’ [SWEDISH]

The same holds in Abkhaz, (50), Albanian, (51), Amharic, (49), Hebrew, (52), and Romanian, (53).

- (49) tinantinna ammist wissa-wotʃʃ ayyä-hu. #zare indägäna wissa-w-in ayyä-hu
 yesterday 5 dog-PL see.PF-1SG today again dog-DEF-ACC see.PF-1SG
 ‘Yesterday, I saw five dogs. Today I saw the dog again.’ [AMHARIC]
- (50) Adgur x-ts’lak eit^heix^hait. #A-ts’lak iaarlasny iqeit.
 Adgur three-tree planted DEF-tree quickly dried
 Intended: ‘Adgur planted three trees. One (of the trees) quickly dried out.’ [ABKHAZ]
- (51) Dje pashë pesë mace. #Sot takova mace-n përsëri.
 yesterday saw five cats. Today met cat-DEF again
 Intended: ‘Yesterday I saw five cats. Today I met one of the cat again.’ [ALBANIAN]
- (52) Aron ra’a shlosha klavim etmol. #Hayom hu ra’a et ha-kelev shuv.
 Aron saw three dogs yesterday today he saw ACC DEF-dog again
 Intended: ‘Aron saw three dogs yesterday. Today he saw one of the dogs again.’ [HEBREW]
- (53) Ieri am väz-ut cinci câin-i. #Azi am intâln-it câin-ele.
 yesterday have.1SG see-PTCP five dog-PL today have.1SG meet-PTCP dog-DEF.M.SG
 Intended: ‘Yesterday I saw five dogs. Today I met one of the dogs the dog.’ [ROMANIAN]

In contrast, bound determiners in Buryat, Mari, Mordvin, Persian, and Turkish do not trigger maximal quantification and are compatible with contexts where the denotation of the relevant DP picks out a non-maximal individual, as examples (45), (47), (40), (41), and (42) show, respectively.

3.2 Edge requirement

As already mentioned, a maximal interpretation appears to have a robust morphosyntactic correlate. Namely, in languages where bound determiners trigger a maximal interpretation, DPs with modifiers have a determiner at the edge of the DP: either as the top-most head or suffixed onto the top-most predicate. In contrast, in languages where bound determiners do not trigger a maximal interpretation, configurations with modifiers do not differ from those without in terms of their morphosyntax (modulo the presence of the modifier itself). I consider the first family below and the second in section 4.

Among systems where the presence of a modifier triggers appearance of a determiner at the DP edge, there are several strategies, which can be schematically represented as follows.¹⁹

- (54) a. NOUN-DET → ADJECTIVE-DET NOUN (e.g. Amharic, (55), Romanian, (56))

¹⁹-W stands for a “weak” ending, a traditional term used to describe adjectival inflection in the context of definite or plural noun phrases in Germanic languages. It is likely a descendant of a contrastively used pronominal element (Skrzypek 2012:59).

- b. NOUN-DET → ADJECTIVE-DET NOUN-DET (e.g. Abkhaz, (57), Hebrew, (58))²⁰
 - c. NOUN-DET → DET ADJECTIVE-W NOUN (e.g. Danish, (59))
 - d. NOUN-DET → DET ADJECTIVE-W NOUN-DET (e.g. Albanian, (60), Swedish, (61))
- (55) təlləq-**u** ləğ
tall-DEF boy
'the big boy'
[AMHARIC], Huehnergard and Pat-El (2012:26)
- (56) fost.**a** scoală
former.DEF.F.SG school
'the former school'
[ROMANIAN], Dobrovie-Sorin and Giurgea (2006:76)²¹
- (57) á-pš'bat^oej á-mš
DEF-fourth day
'the fourth day'
[ABKHAZ], Chirikba (2003:24)
- (58) ha-dira **ha**-ktana me?od
DEF-apartment DEF-small very
'the very small apartment'
[HEBREW], McNabb (2013:358)
- (59) **de** snill-e pige-r
DEF.PL kind-W girl-PL
'the kind girls'
[DANISH]
- (60) libr-i **i** ri
book-DEF.M.SG DEF.M.SG new.M.SG.
'the new book'
[ALBANIAN], Campos (2009:1010)
- (61) **de** vackr-a hund-ar-na
DEF.C.PL beautiful-W dog-PL-DEF.C.PL
'the beautiful dogs'
[SWEDISH]

Despite the observed morphosyntactic variation, as already mentioned, these systems have a common semantic denominator viz. a maximal interpretation associated with the bound determiner. The common morphosyntactic pattern, namely, the appearance of a determiner in the top layer of the DP can then be accounted for on the assumption that a semantic component responsible for maximal quantification should take scope over the whole DP.

This assumption can be further broken down into first principles of the type-driven compositional semantics since merging a property-denoting adjectival predicate with a term-denoting noun would result in a truth-value as the denotation of a DP, a type not-suitable for further composition. I speculate that an appropriate type-shifting is unavailable in this case either because language bans vacuous modification, as proposed in Schlenker (2005), which would obtain if the property denoted by an adjectival predicate combined with a singleton property denoted

²⁰Icelandic presents an interesting complication, featuring patterns noun-det, adjective-w noun-det (with restrictive adjectives), and det adjective-w noun (with certain evaluative adjectives, see Ingason (2016)). Ingason (2016) argues that the bound determiner in Icelandic alternates between a uniqueness-based and an anaphoric-based semantics. There are also reasons to think that the weak adjectival inflection in Icelandic makes a semantic contribution independent of the semantics of the nominal determiner, unlike in other North Germanic languages (see the discussion of its distribution in Skrzypek (2012:60)). I therefore exclude this case from consideration. Although I will not defend it here, it can be argued that the adjectival suffix in Icelandic still contributes an existential presupposition, and should be analysed as a definite determiner, rather than an adjectival inflection.

²¹Default position of restrictive modifiers in Romanian is postnominal, and prenominal placement is reserved to the cases “affective, non-restrictive” modification and to certain non-restrictive modifiers, Dobrovie-Sorin and Giurgea (2006:76).

by N+determiner as a result of type-shifting (i.e. Partee's *ident*); or else because there is no intensional type-shifting to lift type e to $\langle e \langle st \rangle \rangle$ in cases where this would re-introduce arguments saturated by free pronominal expressions (in case of definite descriptions these are intensional arguments). The rationale for the latter can be the avoidance of erasing relevant contextual information provided by pronouns.

Patterns (54-c) and (54-d) still pose a challenge for compositionality since the lower determiner cooccurs with the higher one. This issue is resolved in some works by assuming that the lower determiner is semantically vacuous (e.g. for Norwegian and Swedish this view is taken in Giusti (1994), Embick and Noyer (2001), Faarlund (2009), Coppock and Engdahl (2016)).

At the same time, these patterns seem to lend themselves naturally to an analysis akin to that laid out in Bumford (2017) who proposes that definiteness is bipartite, involving a lower component introducing a variable and a set of possible assignments mapping that variable to a salient individual and a higher one, which checks that the set of relevant assignments is a singleton. Bumford (2017) shows that certain phenomena, such as Haddock descriptions (e.g. *the rabbit in the hat* uttered in a situation when there are two rabbits and two hats but only one rabbit in a hat and only one hat with a rabbit in it), are amenable to an analysis in terms of traditional Fregean definiteness (recast in dynamic semantics terms) on the assumption that the semantic contribution of the two determiners can be “interleaved” or, schematizing the order of operations: *set of assignments (possible mappings to a salient hat)*₁ → *set of assignments (possible mappings to a salient rabbit)*₂ → *singleton condition*₁ → *singleton condition*₂.

On Bumford's account, it has to be assumed that English *the* spells out both the lower and the higher components (or that the lower component is silent). For the cases of Norwegian and Swedish presumably the assumption would be that the bound determiner spells out both components in the absence of modifiers, whereas once there is a modifier (i.e. a reduced or full relative clause, see section 2.2), the bound determiner spells out the lower component, while the maximality component is part of the full determiner structure. Alternatively, it can be assumed that bound determiners never spell out the maximality component, but that there is instead a covert maximality operator at work, along the lines of Coppock and Beaver (2015).²²

Implementing the bipartite intuition in terms of a classic, non-dynamic semantics, I suggest that the lower component introduces an existential presupposition, and the higher one – maximal quantification. Swedish offers a particularly nice illustration of the suggested difference in the semantic import of the two determiners. According to Delsing (1993), the presence or absence of a bound determiner in DPs with restrictive relative clauses correlates with the presence or absence of a “specific” reading, respectively. Consider the following pair of examples. The presence of a bound determiner gives rise to an inference that there exists an individual with the relevant characteristics. This is at odds, however, with the intensional character of the rest of the clause. In (62) it involves a deontic and in (63) an epistemic claim (which, moreover, negates the existence of an individual satisfying the description).

- (62) Den spelare(?-n) som får högst-a siffra-n börjar.
 DEF.C.PL player-DEF.C.SG that gets highest-W number-DEF.C.SG begins
 “The player who gets the highest figure begins.” citet from Julien (2005:82) [SWEDISH]
- (63) Den sju-årig-e pojke(?-n) som klarar detta finns inte.
 DEF.C.PL seven-year.old-W boy-DEF.C.SG that manages this exists not
 “A seven year old boy who can do this does not exist.” citet from Julien (2005:82) [SWEDISH]

The infelicity of a bound determiner in (62) and (63) is expected on the hypothesis that this morpheme triggers an existential presupposition. As is well known, English *the* is likewise

²²In nanonsyntactic terms we can talk of a bound determiner spelling out either a full set of definiteness components (features) or a subset thereof (see Baunaz and Lander 2018 for a systematic exposition of the framework).

infelicitous in the context of denied existence, which is again expected if it is assumed to spell out both components of a bipartite definite semantics. Leaving specific implementations for further work, the bipartite definiteness approach seems very promising in dealing with cases of apparent multiple marking of definiteness.

4 Bound determiners II: relational morphemes

In languages where bound determiners do not trigger a maximal interpretation, there is no requirement that there be a determiner at the edge of a definite DP with a modifier. Uses of such determiners typically imply presence of some kind of antecedent in the previous context and can be classified according to the type of the required antecedent. As a descriptive tool, let us use a notation from Enç (1991), initially proposed to capture the semantics of Turkish differential object markers. The original formulation is given in (64) where i and j are indices pointing to the referent of the NP in question and some other referent to which the former stands in a subset relation, respectively.

- (64) Every $[NP \alpha]_{<ij>}$ is interpreted as $\alpha(x_i)$ and
- a. $x_i \subseteq x_j$ if $NP_{<ij>}$ is plural,
 - b. $\{x_i\} \subseteq x_j$ if $NP_{<ij>}$ is singular.

Enç (1991:7)

Let us consider Turkish cases in (65)–(69), where the direct object has a suffix traditionally labelled accusative which appears in contexts providing a group antecedent, a direct antecedent or an indirect antecedent in the preceding discourse or in the discourse situation.

In (65-a) a group antecedent for the direct object in (65-b) appears in the form of the DP *birkaç çocuk* “several children”.

- (65) a. Oda-m-a birkaç çocuk gir-di.
 room-1SG-DAT several child enter-PST.3SG
 ‘Several children entered my room.’
- b. Iki kız-ı tanı-yor-du-m.
 two girl-ACC know-IMPF-PST-1SG
 ‘I knew two (of the) girls.’

[TURKISH], Enç (1991:6)

(66-a) provides an antecedent expression with whose referent the intended referent of the direct object DP in (66-b) can be identified.

- (66) a. Oda-m-a bir kız gir-di.
 room-1SG-DAT a girl enter-pst.3sg
 ‘A girl entered my room.’
- b. Kız-*(i) tanı-di-m.
 girl-ACC recognize-PST-1SG
 ‘I recognized the girl.’

[TURKISH]

In (67) a suitable referent is provided by a local, (67), and a global discourse situation, (68), to use the terms of Hawkins (1991).

- (67) Kapi-*(yi) kapat!
 door-ACC close.IMP.2SG
 ‘Close the door!’
- (68) Güneş-*(i) gör-dü-m.
 sun-ACC see-PST-3SG
 ‘I saw the sun.’

[TURKISH]

The presence of a modifier does not change the morphosyntactic pattern, as (69) illustrates

where the suffixal determiner still attaches to the noun.

- (69) Iki kısa kız-ı tanı-yor-du-m.
 two short girl-ACC know-IMPF-PST-1SG
 'I knew the two short girls.' [TURKISH]

Turkish also has a series of possessive suffixal determiners, which can only express properly possessive relations and in the object position combine with the accusative suffix, as in (70).

- (70) Deniz ev-in-i sat-acak.
 Deniz house-3SG-ACC sell-FUT.3SG
 'Deniz will sell his house.' [TURKISH]

A strikingly similar pattern is found in Komi (Finno-Ugric). As most other Finno-Ugric languages, Komi features a paradigm of so called possessive affixes. In general terms, such affixes attach to a nominal or nominalized stem and encode person and number features of an explicit or implicit nominal expression standing in some sort of a contextually recoverable relation to the denotation of the NP in question. In (71) from Komi Zyryan the suffix has the same features, 3rd person singular, as the genitive possessor in the same DP.

- (71) Petra-lyn ponm-ys
 Peter-GEN dog-3SG
 'Peter's dog' [KOMI]²³

In a number of Finno-Ugric languages, including Komi, the distribution of the possessive suffixes, especially the 3rd person singular ones, extends beyond contexts involving an entity-to-another-entity relation (i.e. genitival relation in the large sense). A 3rd person singular person appears in contexts parallel to the Turkish case with a superset antecedent in (65) and illustrated for Komi in (72).

- (72) Lavka təryt va-i-sny kuim pyzan. Ton mi yti pyzan-??(se)
 store yesterday bring-PST-3PL three table today we one table-3SG.ACC)
 n'eb-i-m.
 buy-PST-1PL
 "Yesterday they brought three tables to (the/a) store. Today we bought one of the
 tables." [KOMI]

In (74), the first sentence provides an antecedent expression whose referent is identified with the intended referent of the subject DP in the second sentence, parallel to the Turkish example in (66).

- (73) Me mun-i ul'iča kuz'a i ad'd'-il-i pon. Ponm-***(ys)** kuč'-i-s uut-ny.
 I walk-PST street along and see-ITER-PST dog dog-(3SG) start-PST-3 bark-INF
 'I was walking down the street and saw a dog. The dog started barking.' [KOMI], Kashkin (2008)

As in Turkish, in Komi a bound determiner is used in those cases where a suitable referent is provided by the discourse situation, either locally, as in (74), or globally, as in (75).

- (74) əbes-***(se)** s'ipt-i!
 door-(3SG.ACC) close-IMP
 'Close the door!' [KOMI], Kashkin (2008)

²³Komi data are from a Komi Izhem dialect spoken in Muzhi, Shurishkary district, Yamalo-Nenets region, Russian Federation.

- (75) Šond-**ys** dep-š'-i-s.
 Sun-(3SG) dep-DETR-PST-3SG
 'The sun has set.'

[KOMI]

Although Turkish and Komi bound determiners demonstrate a remarkable parallelism of distribution, languages in general differ with respect to what kind of contexts license the use of bound determiners. Below I focus on the variation within the Finno-Ugric group to which I add data from Buryat, a Mongolian language, which together seem to exploit nearly all possible patterns. I then propose a general explanatory typology of the semantic properties of bound determiners.

(76) is an example of a “canonical” possessive use of a bound determiner in Buryat. The non-possessive uses of the bound determiner cover superset and identical antecedent contexts.

- (76) gər-**en'** exε
 house-3SG big
 'His house is big.' [BURYAT]²⁴

Without an immediately preceding context providing an antecedent, the default interpretation is that of a possessive relation. Namely, the hearer will assume that there is an individual who possesses a house.

Examples (77) and (78) illustrate uses with a direct and a superset antecedents respectively.

- (77) manaj tosxondo žənə ger bar-jaa. gər-**en'** exε.
 we village new house build-PST.3SG house-3SG big
 'In our village a new house was built-pst. That house is big.'
- (78) manaj tosxondo gurban ger bar'aa. nege gər-**en'** exε, xoer gər-**en'**
 we village three house build-PST.3SG. one house-3SG big two house-3SG
 baga.
 small
 'In our village three houses were built. One of them is big and two of them are small.' [BURYAT]

In contexts where the relevant referent is not introduced linguistically but is provided only in the extra-linguistic situation, the use of a bound determiner is infelicitous in Buryat, as (79) shows.

- (79) xaxad hyni hara(#-**n'**) gar-aa
 middle night moon(-3SG) come-PST.3SG
 'The moon came out in the middle of the night.' [BURYAT]

In Meadow Mari we find yet another pattern in terms of the range of contexts in which a bound determiner can be used. In addition to properly possessive uses, (80), the only other type of context licensing the use of bound determiners are those with a superset antecedent, as in (81).

- (80) üdər-žö tud-əm sərəkt-ən.
 daughter-3SG he-ACC make.angry-PST
 'His daughter made him angry.' [MARI]²⁵
- (81) məj teŋgeče kum kniga-m nal-ən-am. ik kniga-ž-əm Kost'a-lan
 I yesterday three book-ACC buy-PST-1SG one book-3SG-ACC Kost'a-DAT

²⁴Buryat data come Barguzin dialect of Buryat spoken in Baraghan, Buryat Republic, Russian Federation.

²⁵The Mari data are from a dialect of Meadow Mari spoken in Staryj Torjal, Republic Mari El, Russian Federation.

pölekl-em.

give-PRS.1SG

‘Yesterday I bought three books. I will give one of them to Kost’ā.’

[MARI]

Contexts with anaphoric or situational identity are excluded in Mari. I skip illustrations of the negative examples in the interest of space.²⁶

Finally, an interesting split is found in Moksha Mordvin. There possessive determiners cover only individual-to-other-individual relations, (82), whereas a suffix from another paradigm, not marking person features, appears in all the context where Turkish uses an accusative suffix and Komi a 3rd person singular possessive. Example in (83) illustrates the superset antecedent case.²⁷

- (82) Maša n’ej-əz’ə son’ c’or-ənc.
 Masha meet-PST.3SGO.3SGS his son-3SG.GEN
 ‘Masha met his son.’ [MOKSHA MORDVIN]²⁸
- (83) Ole rama-s’ kolmə kniga-t. fke kniga-t’ son kaz-əz’ə
 Ol’a buy-PST.3SG three book-PL one book-DEF.SG.GEN she give-PST.3SGO.3SGS
 Kost’-ən’d’i.
 Kost’ā-DAT
 ‘Ol’a bought three books. She gave one book to Kost’ā.’ MORD

Based on this language sample, in table 3 I sketch the space of variation in the use of bound determiners with a non-maximal interpretation.

Pattern	KOMI	BURYAT	MARI	MORDVIN & TURKISH	MORDVIN & TURKISH POSS
A. x_i IS OWNED BY x_j	✓	✓	✓	✗	✓
B-i. $x_i \subset x_j$ IF x_i IS PL	✓	✓	✓	✓	✗
B-ii. $\{x_i\} \subset x_j$ IF x_i IS SG	✓	✓	✓	✓	✗
C. $x_i = x_{j_{context}}$	✓	✓	✗	✓	✗
D. $x_i = x_{j_{disc.sit.}}$	✓	✗	✗	✓	✗

Table 3: Distribution of bound determiners

A generalization which emerges from this description is that languages which have a paradigm of “specialized” possessive suffixes – in our sample Mordvin and Turkish – do not allow other paradigms of bound determiners to be used in properly possessive contexts and do not use possessive suffixes (on their own) in non-possessive contexts.

Another contrast is whether a bound determiner can be used in contexts where the referent of the DP in question is identical to the referent of the antecedent or an extralinguistically accessible referent.

To capture these patterns, I suggest that the semantics of all bound determiners involves a relational variable R and that the variation in their distribution comes from the differences in the range of relations R can encode.

- (84) $\llbracket \text{det} \rrbracket = \lambda P_{\langle e, t \rangle} . \lambda y_e . \lambda x_e . P(x) \& R(x)(y)$
 where $R \in \{\text{possession}\}$ MORDVIN POSS, TURKISH POSS
 where $R \in \{\text{inclusion, identity}\}$ MORDVIN, TURKISH
 where $R \in \{\text{possession, inclusion}\}$ MARI

²⁶An interested reader can find relevant examples in Simonenko (2014b).

²⁷See Toldova (2017) for a detailed study of the distribution of Moksha Mordvin definite determiners.

²⁸Mordvin data are from a Moksha Mordvin dialect of Lesnoe Tsibaevo, Temnikovo region, Mordvin Republic, Russian Federation.

where $R \in \{\text{possession}, \text{inclusion}, \text{identity}_{\text{context}}\}$
 where $R \in \{\text{possession}, \text{inclusion}, \text{identity}_{\text{context, discourse}}\}$

BURYAT
KOMI

Example (85) illustrates how the meaning of a Mari expression *pij-že*, ambiguous between “his dog” and “one of the dogs”, is derived, assuming that the first (relatum) argument is filled by a silent pronoun (with an index i) present in the structure of these morphemes.

- (85) $\llbracket \text{det} \rrbracket^{g,c}(\llbracket \text{dog} \rrbracket^{g,c})(\llbracket i \rrbracket^{g,c}) = \lambda x . x \text{ is a dog and } x \text{ is related to } g(i) \text{ by } R \text{ (possession or inclusion)}$

It turns out there is an additional dimension of variation, namely, the interpretation of DPs with bound determiner with respect to negation. In Mari and Mordvin possessive suffixes can take narrow scope with respect to negation, as examples (86)–(88) illustrate where the existence of an individual from the denotation of the pivot DP is negated.

- (86) Ben-im kiz kardes-**im** yok.
 I-GEN.1SG sister-1SG not.exist-3SG
 ‘I don’t have a sister.’ [TURKISH]
- (87) myj-yn aka-**m** uke.
 I-GEN sister-1SG be.NEG
 ‘I don’t have a sister.’ [MARI]
- (88) mon’ aš sazər-əz’ə
 I NEG sister-1SG
 ‘I don’t have a sister.’ [MOKSHA MORDVIN]

This contrasts with the properties of Mordvin and Turkish non-possessive paradigms and with Buryat and Komi possessive (and only) one, which are only compatible with a wide scope interpretation. While in the absence of a bound determiner the existence of an element from the DP denotation can be negated, as in (89), if a determiner is present, the interpretation is only compatible with a context where the local head exists but is temporarily absent from a particular location, (90).

- (89) men’ vele-sə-nək aš sel’skoi predsedat’el’.
 we.GEN village-INESS-1PL NEG local head
 ‘There is no local head in our village.’ [MOKSHA MORDVIN]
- (90) men’ vele-sə-nək aš sel’skoi predsedat’el’-s.
 we.GEN village-INESS-1PL NEG local head-DEF
 ‘The local head is not in our village.’ [MOKSHA MORDVIN]

The same effect is found in Buryat, (91)–(92), and Komi, (93)–(94),

- (91) minii exə noxoj ugy.
 I.GEN big dog NEG
 ‘I don’t have a big dog.’ [BURYAT]
- (92) minii exə noxoj-**mni** ugy.
 I.GEN big dog-1SG NEG
 ‘My big dog is not here.’ [BURYAT]
- (93) menam abu pon.
 I.GEN NEG dog
 ‘I don’t have a dog.’ [KOMI]

- (94) menam abu pon-**me**.
 I.GEN NEG dog
 ‘I don’t have my dog (with me).’ [KOMI]

In table 4 I add the scope dimension to the typology in table 3.

Pattern	KOMI	BURYAT	MARI	MORDVIN & TURKISH	MORDVIN & TURKISH POSS
A. x_i IS OWNED BY x_j	✓	✓	✓	✗	✓
B-i. $x_i \subset x_j$ IF x_i IS PL	✓	✓	✓	✓	✗
B-ii. $\{x_i\} \subset x_j$ IF x_i IS SG	✓	✓	✓	✓	✗
C. $x_i = x_{j_{context}}$	✓	✓	✗	✓	✗
D. $x_i = x_{j_{disc.sit.}}$	✓	✗	✗	✓	✗
E. NARROW SCOPE POSSIBLE	✗	✗	✓	✗	✓

Table 4: Distribution of bound determiners

In table 4 we observe a perfect correlation between an obligatory wide scope reading (crosses in line E) and an identity relation being in the semantic range of a determiner. This dependency follows if we assume that in case R can take on an identity relation value, there is a restriction on the domain of the second argument that there be an element with the nominal property in relation R to the antecedent (cf. Elbourne (2008)’s treatment of demonstratives), as in (95).

- (95) $\llbracket \text{det} \rrbracket = \lambda P_{<e,t>} . \lambda y_e . \lambda x_e : \exists x [P(x) \& R(x)(y)] . P(x) \& R(x)(y)$
 where $R \in \{\dots \text{identity} \dots\}$

In contexts where there is an antecedent and R is an identity relation, this condition is equivalent to the requirement that the antecedent have the nominal property (i.e. $P(y)$). I speculate that this presupposition accompanies identity relations to ensure the well-formedness of anaphoric chains. For instance, this requirement captures the infelicity of the following chain in English (and in any other language I am familiar with): *#a pig ... that dog*. That is, a referent having the property denoted by *pig* cannot be a relatum for (be identified with) the second individual of the function denoted by a demonstrative. This is ensured by the condition $\exists x [P(x) \& R(x)(y)]$ where R is an identity relation.

A determiner triggering an existential presupposition is predicted to give rise to a wide scope reading with respect to a negation operator since a context which satisfies the presupposition is logically incompatible with negating the existence of individuals with the nominal property standing in relation R to the antecedent.

This presupposition can also be argued to be responsible for blocking Mordvin and Turkish possessive suffixes from the non-possessive contexts. For instance, the existence of a superset antecedent (pattern B) entails the existence of its subparts, which, assuming the Maximize Presupposition principle (Heim 1991, Chemla 2008, Singh 2009), gives rise to a grammatical pressure to use a determiner which triggers existence presupposition, that is, the non-possessive bound determiners in Mordvin and Turkish.

The availability of an identity relation as a value for R comes out as a major parameter in the typology of non-maximal bound determiners since it is associated with an existential presupposition, which, in turn, is responsible for wide scope readings and also controls paradigm competition in contexts where it is satisfied.

The class of bound determiners considered in this section can be called relational, as their semantics seems to be based on a relation with a particular referent, introduced linguistically or extralinguistically.

5 Conclusions

This chapter examined the distinction between full, clitic, and bound determiners in a sample of languages in an attempt to define these morphophonological classes from a semantico-syntactic perspective, as has been done already for pronominal elements. Based on the distributional requirements and semantic effects associated with full vs. clitic determiners, I endorsed a version of Elbourne/Schwarz' approach to the distinction whereby full determiners correspond to a more complex syntactico-semantic representations which, in addition to a maximality operator D, involve a relational predicate R and a pronominal element. I drew a parallel between the R component and Fox' trace conversion operation, an analogy which accounts for the robust semantic interaction between relative clauses and full determiners, overt relative clauses essentially being an extension of the relational component which is an intrinsic part of the full determiner's structure.

I grouped bound determiners into two classes, those which give rise to a maximal interpretation and those that do not. Based on a typological sample, the former property was shown to come with a morphosyntactic edge effect, which in some languages leads to the appearance of another determiner in the presence of a modifier. I suggested that this effect arises from the requirement that the maximality component take scope over the whole DP, a principle which can arguably be grounded in independent semantic principles. A bound determiner attached to a nominal predicate does not scope over an augmented DP if we assume that it forms a complex head with the noun, as in Figure 3 where x stands for a projection that does not involve a maximality component. I proposed that such configurations are cases of Bumford's bipartite definiteness, where the lower component (x in Figure 3) only triggers an existential presupposition.²⁹

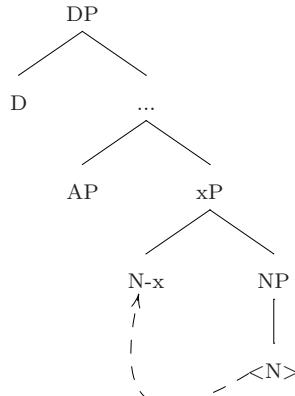


Figure 3: Bound determiner resulting from head movement

A series of open questions remains as to what triggers suffixation and why some languages as it were retain the bound determiner when a higher determiner appears at the left edge (e.g. Swedish) and some do not (e.g. Danish). Perhaps looking at languages such as Romanian, which shows both strategies, can help solve the puzzle.

The class of bound determiners not associated with a maximal interpretation was characterized in terms of relations obtaining between the denotation of the noun phrase and some referent in linguistic or extralinguistic context. I proposed to capture the variation within this class in terms of possible ranges of relations available for a determiner in a given language.

²⁹The class of bound determiners giving rise to a maximal interpretation on this analysis can be seen as not inherently maximality-based, but rather as triggering a covert operation of maximal quantification in the absence of other determiners.

Having a relational component and a relatum as part of their meaning makes non-maximal bound determiner similar to full determiners. They can be seen as the lower part of the full determiner structure, namely, the [i [R NP]] component. The following semantico-syntactic subset relation then emerges as a correlate of the full-bound distinction, where xP is a bound determiner structure in languages with a maximality effect, RP is a bound determiner structure in other cases, and the full structure corresponds to full determiners.³⁰ Clitic determiners come out as a structure with the RP component “cut out”.

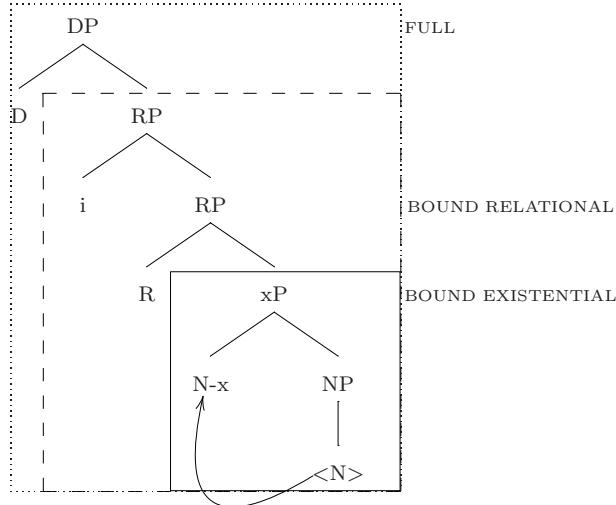


Figure 4: Full–clitic–bound subset relation

Unlike maximality-based bound determiners, relational determiners do not have to scope over the whole DP. Diachronically, it is well established that today’s maximality-based determiners in European languages sprung from older demonstratives (see, e.g., De Mulder and Carlier 2011 for historical French, Crisma 2011 & Keenan 2011 for historical English, Roca 2009 for historical Spanish, Egedi 2014 for historical Hungarian, Skrzypek (2009) for historical Swedish, historical Romanian Hill 2015 and Ledgeway 2017). We then expect for those languages which developed suffixal determiners, such as North Germanic languages and Romanian, to find a stage where they did not trigger the edge effect in virtue of being relational rather than maximality-based. This expectation is robustly confirmed in historical data.

For instance, this stage is attested in Romanian which, together with most other Romance languages, developed its bound determiner from a Late Latin anaphoric demonstrative *ille*. According to Nicolae (2015:33), in Old Romanian the bound determiner stayed on the lower predicate even in the presence of a higher adjectival modifier, as illustrated by (96).

- (96) că văzuiu luminată fat-a
that see.PST.1SG bright face-DET
'that I saw your bright face'

[OLD ROMANIAN], Nicolae (2015:33)

A parallel case is found in the history of North Germanic determiners. According to Skrzypek (2009) (and earlier works cited therein), bound determiners emerged from Old Nordic distal demonstratives *hinn* and in Old Swedish were often absent from the contexts requiring their use in Modern Swedish, as can be seen from (97-d) which is given here together with its preceding context.

³⁰On this view, the maximality effect associated with bound determiners can be argued to result from the application of a covert maximality operator.

- (97) a. iohannes fik biskop-e suen-en ii hand.
 Johannes get.PST bishop-DAT boy-DET in hand
 ‘Johannes gave a/the bishop charge of the boy.’(..)
 b. Johannes kom atar tel staþ-en ok storþe at suen-en-om.
 Johannes come.PST back to town-DET and asked about boy-DET-DAT
 ‘Johannes returned to the town and asked about the boy.’
 c. **biscop-en** sag-be hanom vm suen-en som sant var.
 bishop-DET say-PST he.DAT about boy-DET which true was
 ‘The bishop told him as true was.’
 d. Johannes gaf **biskop-e** skuld for vangømo.
 Johannes give.PST bishop-DAT guilt for negligence
 ‘Johannes blamed the bishop for negligence’ [OLD SWEDISH], [Skrzypek \(2012:93-94\)](#)

In the last stages of Old Swedish (ca. 1450–1526), the suffixal determiner is used in nearly all contexts with direct or indirect antecedents, according to [Skrzypek \(2012\)](#). As expected, in the presence of a modifier no double definiteness is observed in Old Swedish, (98).

- (98) Konæ firigiæ-r manni fællir hana [luct hæræznæmpð-in].
 woman kill-PRS man charge her close.NOM.F jury-DET
 ‘If a woman kills a man, she shall be charged by a closed jury.’ [OLD SWEDISH], [Skrzypek \(2012:60\)](#)

Many questions involving how the changes from relational to maximality-based determiners proceeded, what triggered them, and which factors influence the development of a particular type of a determiner, clitic or bound, from the same etymon, remain to be investigated.

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