Case competition in headless relatives

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List of abbreviations

1	first person
3	third person
ABS	absolutive
ACC	accusative
AN	animate
AUX	auxiliary
COMP	complementizer
DAT	dative
DEF	definite
ERG	ergative
EXT	external case
F	feminine
GEN	genitive
INAN	inanimate
INT	internal case
M	masculine
MG	Modern German
N	neuter
NOM	nominative
OBJ	object

OHG	Old High German
PL	plural
PRES	present tense
PROG	progressive
REL	relative
SG	singular
SUBJ	subject

Chapter 1

Introduction

This dissertation is about case competition, a situation in which two cases are assigned but only one of them surfaces. One of the constructions in which case competition appears is relative clauses that lack a head, i.e. headless relatives.

I show that one aspect about case competition in headless relatives holds for all languages (under discussion here at least). That is, there is a fixed order which decides which case wins the competition. I let this follow from what we observe in morphology. Another aspect of case competition in headless relatives differs per language. That is, whether the competition takes place to begin with. I connect this variable to the morphology of the language in question.

Case competition in headless relatives has been described as some special property of a few special languages. Therefore, language-specific rules have been postulated to account for the data. My goal is to show that this phenomenon can be captured with 'normal' syntactic processes, like ellipsis, c-command. The account makes predictions about how a language behaves based on the shape of its relative pronouns. And we see that case competition in headless relatives is actually more wide-spread than what has been assumed.

In this introduction I first introduce what I mean exactly with case competition in headless relatives. Then I introduce the topics I discuss in this dissertation.

1.1 Introducing the title

Languages can use case to mark the grammatical role of a noun phrase in a clause (cf. Moravcsik, 2009). Consider the two Modern German sentences in (1). The what can descriptively be called subject of the predicate *mag* 'likes' is marked as nominative. The what can be described as object of *mag* 'likes' is marked as accusative. The case marking of the noun phrases is reflected on the determiner in the noun phrase. In (1a), *der* in *der Lehrer* 'the teacher' appears in nominative case, because it is the descriptive subject in the clause. *Den* in *den Schüler* 'the pupil' appears in accusative case, because it is a descriptive object of *mag* 'likes'. In (1b), the grammatical roles are reversed: *der* in *der Schüler* 'the pupil' appears in nominative case, because it is the descriptive subject in the clause. *Den* in *den Lehrer* 'the teacher' appears in accusative case, because it is the descriptive object of *mag* 'likes'.

(1) a. Der Lehrer mag den Schüler.
the.NOM teacher likes the.ACC student
'The teacher likes the pupil.'

b. Der Schüler mag den Lehrer.
the.NOM student likes the.ACC teacher
'The pupil likes the teacher.'

Not only full noun phrases, but also other elements can be marked for case, such as relative pronouns. Modern German marks relative pronouns, just like full noun phrases, for the grammatical role they have in the clause. Consider the two sentences in (2). These two sentences both contain a main clause that is modified by a relative clause. In (2a), the relative clause *der nach draußen guckt* 'that looks outside' modifies *den Schüler* 'the pupil'. *Schüler* 'pupil' is called the head (noun) or the antecedent of the relative clause. *Den* in *den Schüler* 'the pupil' appears in accusative case, because it is the descriptive object of *mag* 'likes' in the main clause. The relative pronoun *der* 'REL.NOM.SG.M' appears in nominative case, because it is the descriptive subject of in the relative clause.

In (2b), the relative clause *den er beim Versteckspiel sucht* 'that he is searching for playing hide-and-seek' modifies *den Schüler* 'the pupil'. *Den* in *den Schüler* 'the pupil' appears again in accusative, because it is the descriptive object of *mag* 'likes'

in the main clause. The relative pronoun *den* 'REL.ACC.SG.M' appears in accusative case, because it is the descriptive object of *sucht* 'searches' in the relative clause.

(2) a. Der Lehrer mag den Schüler, der nach draußen
the.NOM teacher likes the.ACC student REL.NOM.SG.M to outside
guckt.
looks
'The teacher likes the pupil that is looking outside.'

b. Der Lehrer mag den Schüler, den er beim
the.NOM teacher likes the.ACC student REL.ACC.SG.M he at the
Versteckspiel sucht.
hide-and-seek game searches
'The teacher likes the pupil that he is searching for playing hide-and-seek.'

Compare the two sentences in (2). In both sentences the head is marked as accusative because it is the descriptive object in the main clause. The case of the relative pronoun in (2b) is also accusative, because it is the descriptive object in the relative clause. The case of the relative pronoun in (2a) is nominative, because it is the descriptive subject in the relative clause. So, the case of the relative pronoun in (2a) differs from the case of the head.

The focus of this dissertation lies on headless relatives. As the name suggests, this type of relative clause lacks a head.[1] Even though Modern German also has case competition in headless relatives, I turn to Gothic now. The first part of the dissertation can be illustrated best with Gothic, and not with the Modern German, in which the pattern differs slightly.

I give an example of a headless relative in Gothic in (3). There is no head that this relative clause modifies, because it is a headless relative. This is different from the examples from German I gave above, which each had a head. The predicate *arma*

[1]This 'missing noun' has been interpreted in two different ways. Some researchers argue that the noun is truly missing, it is absent, cf. Citko 2005; Van Riemsdijk 2006. Others claim that there is actually a head, but it is phonologically zero, Bresnan and Grimshaw 1978; Groos and van Riemsdijk 1981; Grosu 2003. At this point in the discussion this distinction is not relevant. I return to the issue in Chapter 5.

'pity' takes accusative objects, as indicated by the subscript on the gloss of the verb. The predicate *gaarma* 'pity' also takes accusative objects, indicated again by the subscript. The relative pronoun *þan(a)* 'REL.ACC.M' appears in accusative case.[2]

(3) gaarma þan -ei arma
pity$_{[ACC]}$ REL.ACC.SG.M -COMP pity$_{[ACC]}$
'I will pity (him) whom I pity'
(Gothic, Rom. 9:15, adapted from Harbert 1978: 339)

Where does this accusative case come from? Logically speaking, there are two possible sources: the predicate in the main clause *gaarma* 'pity', the predicate in the relative clause *arma* 'pity' or both predicates. From now on, I use the terms internal and external case to refer to these two possible case sources.

Internal case refers to the case associated with the relative pronoun internal to the relative clause. More precisely, it is the case, which is associated with the grammatical role that the relative pronoun has internal to the relative clause. In (3), the relative pronoun is the descriptive object of *arma* 'pity'. The predicate *arma* 'pity' takes accusative objects. So, the internal case is accusative.

External case refers to the case associated with the missing head in the main clause, which is external to the relative clause. Concretely, it is the case which is associated with the grammatical role that the missing head has external to the relative clause. In (3), the missing head is the descriptive object of *gaarma* 'pity'. The predicate *gaarma* 'pity' takes accusative objects. In (3), the external case is accusative.

Now I return to the question where *þan(a)* in (3) got its case from. In the remainder of this section I show evidence for the claim that the relative pronoun is sensitive to both the internal and the external case. This is easy to imagine for the internal case: the internal case reflects the grammatical role of the relative clause. It is a bit more complicated for the external case. The external case is associated with the grammatical role of the missing head in the main clause. The idea is going to be that the external case cannot be reflected on a non-existing head. Indirectly,

[2]The relative pronoun without the complementizer *-ei* is *þana*. Therefore, I refer to the relative pronoun as *þan(a)*.

it appears on the relative pronoun.[3] This means that the internal and external case come together on the relative pronoun. In other words, there is case competition going on in headless relatives. (3) is indeed the first example I gave of case competition in a headless relative. It is an uninteresting one, because the two competing cases are identical.

Consider the example in (4), in which the internal case is dative and the external case is accusative. The internal case is dative. The preposition *ana* 'on' takes dative objects, as indicated by the subscript on the preposition. The external case is accusative. The predicate *ushafjands* 'picking up' takes accusative objects, indicated by the subscript on the predicate. The relative pronoun *þamm(a)* 'REL.DAT.SG.N' appears in dative. This dative can only come from the preposition *ana* 'on', which is the internal case here. The relative pronoun is marked in bold, just as the relative clause, showing that the relative pronoun patterns with the relative clause.

(4) ushafjands **ana þamm -ei lag**
picking up$_{[ACC]}$ on$_{[DAT]}$ REL.DAT.SG.N -COMP lay
'picking up (that) on which he lay'
(Gothic, Luke 5:25, adapted from Harbert 1978: 343)

The conclusion that follows is that the relative pronoun can take the internal case. At this point it remains unclear what happened to the external accusative case.

Now consider the example in (5), in which the internal case is accusative and the external case is dative. The internal case is accusative. The predicate *qiþiþ* 'say' takes accusative objects, as indicated by the subscript on the predicate. The external case is dative. The predicate *taujau* 'do' takes dative indirect objects, as indicated by the subscript on the predicate. The relative pronoun *þamm(a)* 'REL.DAT.SG.M' appears in the dative case. This dative can only come from the predicate *taujau* 'do', which is the external case here. The relative pronoun is marked in bold, just as the relative clause, showing that the relative pronoun patterns with the relative clause.

(5) hva nu wileiþ ei taujau þamm **-ei qiþiþ þiudan Iudaie**?
what now want that do$_{[DAT]}$ REL.DAT.SG.M -COMP say$_{[ACC]}$ king of Jews
'what now do you wish that I do to (him) whom you call King of the Jews?'

[3] Later on I will argue that this indirect process is ellipsis.

(Gothic, Mark 15:12, adapted from Harbert 1978: 339)

The conclusion that follows is that the relative pronoun can take the external case. At this point it remains unclear what happened to the internal accusative case.

The examples in (4) and (5) have shown that the relative pronoun in headless relatives can take either the internal or the external case. In the examples, the predicates (or preposition) take accusative and dative, and in both cases, the relative pronoun appeared in dative case. In other words, there was a competition between accusative and dative, and dative won.

In the next section, I discuss the content of this dissertation. Before that, I comment on two notational conventions I use throughout this dissertation. First, I place subscripts on the glosses of the predicates. They indicate what the internal or external case is. The subscript on the predicate in the relative clause indicates the internal case. The subscript on the predicate in the main clause indicates the external case. This subscript can mean different things. For *ushafjands* 'picking up' (3) the subscript indicates which case the complement of the verb appears in. The subscript on *taujau* 'do' (5) in refers to the case of the indirect object of the predicate. Another possibility is that the subscript is placed on a preposition and refers to the case the preposition combines with, as for *ana* 'on' in (4). A last possibility is that the subscript is [NOM] and refers to the case the descriptive subject appears in, of which examples will emerge in the next chapter. In other words, the subscript can refer several elements: a subject, object or indirect object of a predicate. There is no overarching theoretical notion that the subscript makes reference to. The subscript simply indicates which case is required within the (main or relative) clause.

Second, I write the relative clause in bold. When the relative pronoun takes the internal case, I mark it in bold as well, as shown in (4). When the relative pronoun takes the external case, I leave it black, indicating it patterns with the main clause. An example of that is (5).

1.2 The content of this dissertation

In the previous section I introduced the notion of case competition, and I illustrated how it appears in headless relatives. This dissertation discusses two question re-

garding this phenomenon. The first one is which case is going to win the case competition, i.e. which case surfaces. I discuss this in Part I. The second question is whether both competitors are able to compete in the competition, i.e. whether one of the cases is surfacing or both are ungrammatical. I discuss this in Part II. For both I will show that morphology is leading. What we observe in syntax is a reflex of the morphology.

In Part I I discuss the pattern observed in headless relatives in Gothic. This pattern has also been described for German, Greek, etc. etc. references references. The pattern that arises in headless relatives is not restricted to headless relatives. It can also be observed in another syntactic phenomenon: the accessiblity hierarchy. This is.. Lastly: the pattern we observe in these two syntactic phenomena is what we know from morphology. I discuss patterns in morphology: formal containment, syncretism patterns, suppletion patterns.

In Part I I discuss an aspect of headless relatives that differs per language. That is, not all languages act like Gothic.

(6) Modern German

a. accusative dative

‘’

b. dative accusative

‘’

(7) Old High German

a. accusative dative

‘’

b. dative accusative

‘’

(8) Italian

a. accusative dative

‘’

b. dative accusative

‘’

So far people said.. I connect this crosslinguistic variation to morphology.. so i reduce it to differences in the lexicon

In Part III I show how all of this can be derived in derivations.

Part I

The constant winner

Chapter 2

A recurring pattern

This chapter introduces the pattern that forms the focus of the first part of the dissertation. In Section 2.1 I show that case competition in headless relatives adheres to the case scale in (1).

(1) NOM < ACC < DAT

Then I show that this pattern is not unique to headless relatives. It appears in more syntactic and morphological phenomena. Section 2.2 discusses two implicational hierarchies that show the same case ordering. The hierarchies concern agreement and relativization across languages. Section 2.3 shows that the case scale also shows up in morphological patterns. It can be observed in patterns of syncretism and in morphological containment.

2.1 In headless relatives

As the name suggests, headless relatives are relative clauses that lack an (overt) head. The internal case, the case from the relative clause, and the external case, the case from the main clause, compete to surface on the relative pronoun. It has been argued in the literature that the two competing cases always adhere a to particular case scale (cf. Harbert, 1978; Pittner, 1995; Vogel, 2001; Grosu, 2003; Bergsma, 2019; Caha, 2019). This is the scale I gave in the introduction, repeated here in (2).

Elements more to the right on this scale win over elements more to the left on this scale.[1]

(2) NOM < ACC < DAT

This can be reformulated as follows. In a competition, dative wins over accusative, and dative wins over nominative. Additionally, accusative wins over nominative. In this section I illustrate this scale with examples. When two cases compete, the relative pronoun always appears in the case more to the right on the case scale. It does not matter whether it is the internal or the external case. I illustrate this with examples from headless relatives in Gothic (Harbert, 1978).

I start with the competition between dative and accusative. Following the case scale in (2), the relative pronoun appears in dative case and never in accusative.

Consider the example in (3), repeated from the introduction. In this example, the internal case is dative and the external case is accusative. The internal case is dative. The preposition *ana* 'on' takes dative complements. The external case is accusative. The predicate *ushafjands* 'picking up' takes accusative objects. The relative pronoun *þamm(a)* 'REL.DAT.SG.N' appears in the internal case: the dative. The relative pronoun is marked in bold, just like as the relative clause, showing that the relative pronoun patterns with the relative clause. Examples, in which the relative pronoun appears in accusative case, the internal case is dative and the external case is accusative, are unattested.

(3) ushafjands **ana þamm -ei lag**
picking up$_{[ACC]}$ on$_{[DAT]}$ REL.DAT.SG.N COMP lay
'picking up (that) on which he lay'
(Gothic, Luke 5:25, adapted from Harbert 1978: 343)

Consider the example in (4), repeated from the introduction. In this example, the internal case is accusative and the external case is dative. The internal case is ac-

[1] In the literature about headless relatives, the genitive is often discussed together with the nominative, accusative and dative (cf. Harbert, 1978; Pittner, 1995). In this dissertation I do not discuss the genitive. The reason is that I restrict myself to cases that appear in all possible case competition combinations. As the genitive does not fulfill that requirement, it is therefore excluded. In Chapter 7 I briefly return to the issue.

cusative. The predicate *qiþiþ* 'say' takes accusative objects. The external case is dative. The predicate *taujau* 'do' takes dative indirect objects. The relative pronoun *þamm(a)* 'REL.DAT.SG.M' appears in the external case: the dative. The relative pronoun is not marked in bold, just like as the main clause, showing that the relative pronoun patterns with the main clause. Examples, in which the relative pronoun appears in accusative case, the internal case is accusative and the external case is dative, are unattested.

(4) hva nu wileiþ ei taujau þamm **-ei qiþiþ þiudan Iudaie**?
what now want that do$_{[DAT]}$ REL.DAT.SG.M -COMP say$_{[ACC]}$ king of Jews
'what now do you wish that I do to (him) whom you call King of the Jews?'
(Gothic, Mark 15:12, adapted from Harbert 1978: 339)

I continue with the competition between dative and nominative. Following the case scale in (2), the relative pronoun appears in dative case and never in nominative.

Consider the example in (5), in which the internal case is dative and the external case is nominative. The internal case is dative. The predicate *fraletada* 'is forgiven' takes dative objects. The external case is nominative. The predicate *frijod* 'loves' takes nominative subjects. The relative pronoun *þamm(a)* 'REL.DAT.SG.M' appears in the internal case: the dative. The relative pronoun is marked in bold, just as the relative clause, showing that the relative pronoun patterns with the relative clause. Examples, in which the relative pronoun appears in nominative case, the internal case is dative and the external case is nominative, are unattested.

(5) iþ **þamm -ei leitil fraletada** leitil frijod
but REL.DAT.SG.M -COMP little is forgiven$_{[DAT]}$ little loves$_{[NOM]}$
'but the one whom little is forgiven loves little'
(Gothic, Luke 7:47, adapted from Harbert 1978: 342)

Consider the example in (6), in which the internal case is nominative and the external case is dative. The internal case is nominative. The predicate *sind fraþjaiþ* 'are above' takes a nominative subject. The external case is dative. The predicate *fraþjaiþ* 'think on' takes dative indirect objects. The relative pronoun *þaim* 'REL.DAT.PL.N' appears in the external case: the dative. The relative pronoun is not marked in bold,

just like as the main clause, showing that the relative pronoun patterns with the main clause. Examples, in which the relative pronoun appears in nominative case, the internal case is nominative and the external case is dative, are unattested.

(6) þaim **-ei** **iupa** **sind** fraþjaiþ
REL.DAT.PL.N -COMP above are$_{[NOM]}$ think on$_{[DAT]}$
'set your mind on those which are above'
(Gothic, Col. 3:2, adapted from Harbert 1978: 339)

I finish with the competition between accusative and nominative. Following the case scale in (2), the relative pronoun appears in accusative case and never in nominative.

Consider the example in (7), in which the internal case is accusative and the external case is nominative. The internal case is accusative. The predicate *frijos* 'love' takes accusative objects. The external case is nominative. The predicate *siuks ist* 'is sick' takes nominative subjects. The relative pronoun *þan(a)* 'REL.ACC.SG.M' appears in the internal case: the accusative. The relative pronoun is marked in bold, just like as the relative clause, showing that the relative pronoun patterns with the relative clause. Examples, in which the relative pronoun appears in nominative case, the internal case is accusative and the external case is nominative, are unattested.

(7) **þan** **-ei** **frijos** siuks ist
REL.ACC.SG.M -COMP love$_{[ACC]}$ sick is$_{[NOM]}$
'the one whom you love is sick'
(Gothic, John 11:3, adapted from Harbert 1978: 342)

Consider the example in (8), in which the internal case is nominative and the external case is accusative. The internal case is nominative. The predicate *ist us Laudeikaion* 'is from Laodicea' takes nominative subjects. The external case is accusative. The predicate *ussiggwaid* 'read' takes accusative objects. The relative pronoun *þo* 'REL.ACC.SG.N' appears in the external case: the accusative. The relative pronoun is not marked in bold, just like as the main clause, showing that the relative pronoun patterns with the main clause. Examples, in which the relative pronoun appears in nominative case, the internal case is nominative and the external case is

accusative, are unattested.

(8) jah þo **-ei ist us Laudeikaion** jus ussiggwaid
and REL.ACC.SG.N -COMP is$_{[NOM]}$ from Laodicea you read$_{[ACC]}$
'and read that which is from Laodicea'
(Gothic, Col. 4:16, adapted from Harbert 1978: 357)

A summary of the Gothic data as a whole is given in Table 2.1. The left column shows the internal case between square brackets. The upper row shows the external case between square brackets. The other cells indicate the case of the relative pronoun. The diagonal is left blank, because these are instances in which the internal and external case match. The remaining six cells show instances where the internal and external case differ. Within the cells, two cases are given. The case in the lower left corner stands for the relative pronoun in the internal case. The case in the upper right corner stands for the relative pronoun in the external case. The grammatical examples are marked in gray. The unattested examples are marked with an asterix and are unmarked.[2]

Table 2.1: Case competition in Gothic headless relatives

EXT / INT	[NOM]	[ACC]	[DAT]
[NOM]		ACC *NOM	DAT *NOM
[ACC]	*NOM ACC		DAT *ACC
[DAT]	*NOM DAT	*ACC DAT	

[2]Throughout this dissertation * stands for 'not found in natural language'. For extinct languages this means that there are no attested examples. For modern languages it means that the examples are ungrammatical.

The three instances in the lower left corner correspond to the examples (7), (5) and (4). In the attested examples, the relative pronoun appears in the internal case. The three instances in the upper right corner correspond to the examples in (8), (6) and (3). In the attested examples, the relative pronoun appears in the external case.

Table 2.2: Summary of Gothic matching headless relative data

	[NOM]	[ACC]	[DAT]
[NOM]		ACC	DAT
[ACC]	ACC		DAT
[DAT]	DAT	DAT	

To sum up, case competition in headless relative is subject to the case scale, repeated in (9).

(9) NOM < ACC < DAT

If two cases compete, dative wins over accusative and nominative, and accusative wins over nominative. In this section I gave examples from Gothic that illustrate this. As I mentioned in the introduction of this section, this case scale is not specific for Gothic, but it holds across languages (cf. see Pittner 1995 for Modern, Middle High and Old High German, Grosu 2003 for Ancient Greek and Daskalaki 2011 for Modern Greek).[3]

In the remainder of this chapter I show that headless relatives are not the only place where the case scale shows up. Instead, it appears with more syntactic phenomena. Moreover, exactly this scale is also reflected in morphology.

[3]These languages differ from Gothic in that they are subject to an additional constraint. That is, they only allow either the internal or the external case to win case competitions. If the other case is more to the right on the case scale (9), the result is ungrammatical. Old High German is an example of a language that only allows the external case to win the case competition. If the internal case is more to the right on the case scale, the headless relative is ungrammatical. Modern German is an example of a language that only allows the internal case to win the case competition. If the external case is more to the right on the case scale, the headless relative is ungrammatical. This topic is the main focus of Part I of this dissertation.

2.2 In syntax

In this section I discuss two additional syntactic phenomena that reflect the NOM < ACC < DAT scale. The first one is an implicational hierarchy that concerns agreement. The second one is an implicational hierarchy about relativization.

2.2.1 Agreement

Agreement can be seen as "a systematic covariance between a semantic or formal property of one element and a formal property of another" (Steel, 1978). Put differently, the shape of one element changes according to some properties of an element it relates to. In this section I discuss the agreement between a predicate and its arguments.

It differs per language with how many of its arguments a predicate agrees. However, it is not random with which agreement takes place. Instead, there is an implicational hierarchy that is identical to the one observed for headless relatives: NOM < ACC < DAT.

Moravcsik (1978) formulated the implicational hierarchy in terms of grammatical functions subject, direct object and indirect object.[4] The hierarchy is schematically represented in Figure 2.1. It should be read as follows: if a language allows the predicate to agree with the argument in a particular circle, it also allows the predicate to agree with the argument in the circle around it.

Then, there are four types of languages possible: first, a language that does not show any agreement; second, a language that shows agreement only with the subject and not with the direct and indirect object; third, a language that shows agreement with the subject and direct object but not with the indirect object; and fourth, a language that shows agreement with the subject, the direct object and the indirect object.

The implicational hierarchy holds for languages, not for sentences. That is, it is not the case that in a language of a particular type all instances of the grammatical function show agreement. To be more precise, in a language of the second type,

[4] Moravcsik (1978) also included adverbs on the lowest end of the hierarchy. I leave them out here, because they are not relevant for the discussion.

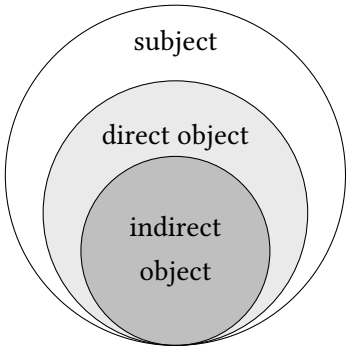


Figure 2.1: Moravcsik's 1978 schema

that only shows agreement with the subject, not all subjects have to show agreement. Particular types of subject, such as experiencer subjects often do not show any agreement.

Japanese is an example of a language that does not show any agreement on the predicate. An example is given in (10). The predicate *okutta* 'sent' does not agree with the subject *Tarooga* 'Taro', with the direct object *nimotuo* 'package' or with the indirect object *Hanakoni* 'Hanako'.

(10) Taroo-ga Hanako-ni nimotu-o okutta.
Taro-NOM Hanako-DAT package-ACC sent
'Taro sent Hanako a package.' (Japanese, Miyagawa and Tsujioka 2004: 5)

German is an example of a language that shows agreement with the subject of the clause. An example is given in (11). The predicate *gibst* 'give' contains the morpheme *-st*, marked in bold. This morpheme is the agreement morpheme for second person singular subjects (in the present tense). The predicate *gibst* 'give' agrees in person and number with the subject *du* 'you'. There is no agreement with the direct object *das Buch* 'the book' or the indirect object *mir* 'me'.

(11) Du gib **-st** mir das Buch.
you give -2SG.PRES me the book
'You give me the book.' (German)

Hungarian is an example of a language that shows agreement with the subject and the direct object of a clause. An example is given in (12). The predicate *adom* 'give' contains the morpheme *-om*, marked in bold. This is a portmonteau morpheme for a first person singular subject and a third person object agreement. The predicate *adom* 'give' agrees with the subject *én* 'I' and the direct object *a könyvet* 'the book'. There is no agreement with the indirect object *neked* 'you'. Agreement with the the first person singular subject *én* 'I' and second person singular indirect object *neked* 'you.DAT.SG' is ungrammatical, as indicated by the ungrammaticality of *-lak*.

(12) (Én) neked ad **-om**/ *-lak a könyv -et
I you.DAT.SG give -1SG.SUBJ>3.OBJ -1SG.SUBJ>2.OBJ the book -ACC
'I give you the book.' (Hungarian, András Bárány p.c.)

Basque is an example of a language that shows agreement with the subject, the direct object and the indirect object. Basque is an ergative-absolutive language, so in transitive clauses subjects are marked as ergative and objects are marked as absolutive. An example from the Bizkaian dialect is given in (13). The stem of the auxiliary *aus* combines with the morphemes *d-*, *-ta* and *-zu*, marked in bold. The morpheme *d-* is the agreement morpheme for third person singular as direct objects, which is here *liburua* 'the book'. The morpheme *-ta* is the agreement morpheme for first person singular indirect objects, which is here *niri* 'me'. The morpheme *-zu* is the agreement morpheme for second person singular ergative subjects, which is here *zuk* 'you'.

(13) Zu-k ni-ri liburu-a emon **d** -aus **-ta** **-zu**.
you-ERG me-DAT book-DEF.ABS given ABS.3SG -AUX -DAT.1SG -ERG.2SG
'You gave me the book.'
(Bizkaian Basque, adapted from Arregi and Molina-Azaola 2004: 45)

Putting the languages in Moravcsik's (1978) figure gives the following result.

Gilligan (1987) performed a typological study among 100 genetically and areally diverse languages, which confirms the picture. The results are shown in Table 2.3. There are 23 languages that do not show any agreement, like Japanese. There are 31 languages that show agreement only with the subject and not with the direct

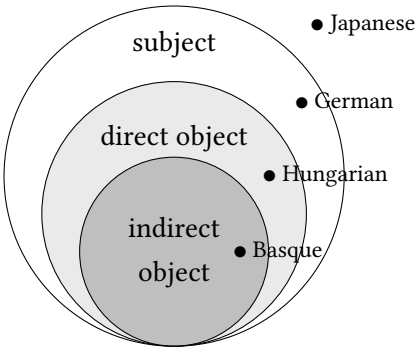


Figure 2.2: Moravcsik's 1978 schema with languages

and indirect object, like German. There are 25 languages that show agreement with the subject and direct object but not with the indirect object, like Hungarian. There are 23 languages that show agreement with the subject, the direct object and the indirect object, like Basque.

Table 2.3: Agreement accessibility

agreement with				
subject	direct object	indirect object	number of languages	example
*	*	*	23	Japanese
✓	*	*	31	German
✓	✓	*	25	Hungarian
✓	✓	✓	23	Basque
✓	*	✓	(1)	-
*	✓	✓	0	-
*	x	*	0	-
*	*	✓	0	-

It is often the case that subjects appear in nominative case, and that direct objects appear in accusative. However, this is not always the case. Subjects can be non-nominative and direct objects can be non-accusative. Bobaljik (2006) argues that the implicational hierarchy is more accurate if it is stated in terms of case rather than grammatical function. He argues for the picture shown in (13).[5]

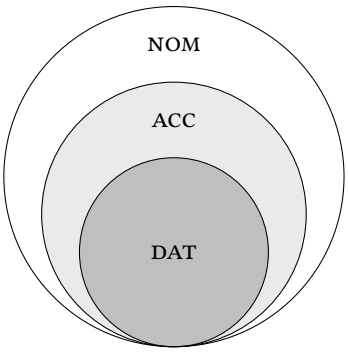


Figure 2.4: Bobaljik's 2006 simplified schema

Bobaljik gives examples of situations in which grammatical function and mor-

[5]Actually, Bobaljik (2006) also includes ergative-absolutive languages, and argues for the picture in Figure 2.3. Default case can be nominative or absolutive case (in transitive clauses), and dependent case can be accusative and ergative case.

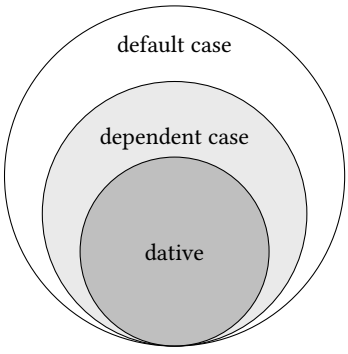


Figure 2.3: Bobaljik's 2006 actual schema

In the languages I discuss in this dissertation, I focus on languages that have nominative as default case and accusative as dependent case, so Figure (13) suffices.

phological case do not match. In these situations, case seem to capture the facts for the implicational hierarchy, and grammatical function does not. I give two examples from Icelandic that illustrate this point.

Icelandic is a language that has dative subjects. If agreement takes place with the grammatical subject, it is expected that the dative subject agrees with the predicate. This is not what happens, as illustrated in (14). The dative subject *morgum studentum* 'many students' is plural. The sentence is ungrammatical with the predicate *líka* 'like' inflecting for plural as well. So, the dative subject does not agree in number with the predicate. In other words, it is not the grammatical subject that shows agreement.

(14) *Morgum studentum líka verkið.
many students.DAT like.PL job.NOM
'Many students like the job.' (Harley 1995: 208)

Instead, it is the nominative object that agrees with the verb. This is illustrated in (15). The dative subject *konunginum* 'the king' is singular. The nominative object *ambáttir* 'slaves' is plural. The predicate *voru* 'were' is inflected for plural, agreeing with the nominative object. This is expected if morphological case determines agreement: it is the nominative that shows agreement. The grammatical role, the fact that this nominative is an object, does not influence agreement.

(15) Um veturinn voru konunginum gefnar ambáttir
In the.winter were.PL the.king.DAT given slaves.NOM
'In the winter, the king was given (female) slaves.'
(Zaenen, Maling, and Thráinsson 1985: 112)

In conclusion, agreement follows the same implicational hierarchy as the case scale in headless relatives: NOM < ACC < DAT.

2.2.2 Relativization

Relativization refers to the process in which a relative clause is derived from a non-relative clause. An example of the non-relative clause is given in (16a). The relative clause derived from that is shown in (16b). The head of the relative clause is *woman*

and precedes the clause. The relative pronoun follows the head. The head of the head does not appear in the relative clause anymore.

(16) a. You like the woman.
b. **the woman**, who you like

In (16b), it is the object of the clause that is relativized. It differs per language which elements can be relativized with a particular strategy. Just like the distribution was not random for agreement, it is not random which elements can be relativized. Instead, there is an implicational hierarchy that is identical to the one observed for the case scale: NOM < ACC < DAT.

Keenan and Comrie (1977) formulated the implicational hierarchy in terms of the grammatical functions subject, direct object and indirect object.[6] The implicational hierarchy is schematically represented in Figure 2.5. It should be read as follows: if a language allows a particular relativization strategy of the grammatical function in a particular circle, it also allows this relativization strategy of the grammatical function of the circle around it. The languages in the figure give examples of the circles they are in.

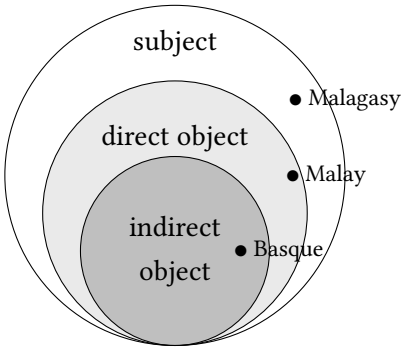


Figure 2.5: Schema for relativization

There are four types of languages possible: first, a language that allows only the subject to be relativized with a particular strategy and not the direct and indirect

[6]Keenan and Comrie (1977) also included obliques, possessives and objects of comparison on the lowest end of the hierarchy. I leave them out here, because they are not relevant for the discussion.

object; second, a language that allows the subject and direct object to be relativized with a particular strategy but not the indirect object; and third, a language that allows the subject, the direct object and the indirect object to be relativized with a particular strategy.

Malagasy is an example of a language that allows subjects to be relativized using a particular strategy, but not direct and indirect objects. (17) is an example of a declarative sentence in Malagasy. It is a transitive sentence that contains the subject *ny mpianatra* 'the student' and the direct object *ny vehivavy* 'the woman'.

(17) Nahita ny vehivavy ny mpianatra.
saw the woman the student
'The student saw the woman.' (Malagasy, Keenan and Comrie 1977: 70)

In (18), the subject from the declarative sentence, marked in bold, is relativized. The subject *ny mpianatra* 'the student' appears in the first position of the clause. It is followed by the invariable relativizer *izay* 'that'. After that, the rest of the relative clause follows, in this case *nahita ny vehivavy* 'saw the woman'.

(18) **ny mpianatra** izay nahita ny vehivavy
the student that saw the woman
'the student that saw the woman'
(Malagasy, Keenan and Comrie 1977: 70, my boldfacing)

The object of (17) cannot be relativized in the same way, as shown in (19). Here the object *ny vehivavy* 'the woman', marked in bold, appears in the first position of the clause. It is again followed by the relativizer *izay* 'that' and the rest of the relative clause, which is here *nahita ny mpianatra* 'saw the student'. This example is ungrammatical.

(19) *__ny vehivavy__ izay nahita ny mpianatra
the woman that saw the student
'the woman that the student saw'
(Malagasy, Keenan and Comrie 1977: 70, my boldfacing)

Later in this section I draw the parallel between subject and nominative, direct ob-

ject and accusative and indirect object and dative (after Caha, 2009). As Malagasy does not have any overt morphological system, it does not hold that the subject corresponds to the nominative in this case. German is another example of a language that allows subjects to be relativized using a particular strategy, but not direct and indirect object. This strategy is the participle construction (Keenan and Comrie, 1977). This strategy is a secondary strategy that exist besides the main strategy that can be used to relativize direct and indirect objects. (20) is an example of a declarative sentence in German. It is a transitive sentence that contains the subject *die Frau* 'the woman' and the object *der Mann* 'the man'.

(20) Die Frau küsst den Mann.
the woman kisses the man
'The woman is kissing the man.' (German)

The subject from the declarative in (20), sentence *die Frau* 'the woman', is relativized in (21). The predicate from the declarative clause *küsst* 'kisses' is turned in into the participle *küssende* 'kissing'. The participle appears at the end of the reduced relative clause *den Mann küssende* 'the man kissing'. The reduced relative clause directly precedes the noun of the subject, creating distance between the determiner *die* 'the' and *Frau* 'woman', which are both marked in bold.

(21) **die** den Mann küssende **Frau**
the the man kissing woman
'the woman who is kissing the man' (German)

The object from the declarative sentence in (20), *den Mann* 'the man', cannot be relativized like the subject, as shown in (22). Again, the predicate from the declarative clause *küsst* 'kisses' is turned in into the participle *küssende* 'kissing'. The participle appears at the end of the relative clause *die Frau küssende* 'the woman kissing'. The reduced relative clause directly precedes the noun of the object, creating distance between the determiner *der* 'the' and *Mann* 'man', which are both marked in bold. This example is ungrammatical.

(22) ***den** die Frau küssende **Mann**
the the woman kissing man
intended: 'the man that the woman is kissing' (German)

Malay is an example of a language that has a relativization strategy for subjects and direct objects, but not for indirect objects. (23) shows an example in which the object is relativized. The object here is *ayam* 'chicken', marked in bold. It is followed by the relativizer *yang* 'that'. After that, the rest of the relative clause *Aminah sedang memakan* 'Aminah is eating' follows. The same strategy works to relativize subjects, which is not illustrated with an example.

(23) Ali bunoh **ayam** yang Aminah sedang memakan.
Ali kill chicken that Aminah PROG eat
'Ali killed the chicken that Aminah is eating.'
(Malay, Keenan and Comrie 1977: 71, my boldfacing)

Indirect objects cannot be relativized using the same strategy. (24) is an example of a ditransitive sentence in Malay. The indirect object *kapada perempuan itu* 'to the woman' cannot be relativized using *yang*.

(24) Ali beri ubi kentang itu kapada perempuan itu.
Ali give potato the to woman the
'Ali gave the potato to the woman.' (Malay, Keenan and Comrie 1977: 71)

This is illustrated by the examples in (25). In (25a), the direct object *perempuan kapada* 'to the woman', marked in bold, appears in the first position of the clause. It is followed by the relativizer *yang* 'that' and the rest of the relative clause *Ali beri ubi kentang itu kapada* 'Ali gave the potato to'. This example in ungrammatical. The example in (25b) differs from (25a) in that the preposition *kapada* 'to' has been moved such that it precedes the relativizer *yang* 'that'. This example is ungrammatical as well, indicating this was not the reason for the ungrammaticality.

(25) a. ***perempuan** yang Ali beri ubi kentang itu kapada
woman that Ali give potato the to

b. ***perempuan kapada** yang Ali beri ubi kentang itu
woman to who Ali give potato that
(Malay, Keenan and Comrie 1977: 71, my boldfacing)

Basque is an example of a language that has a particular relativization strategy for subjects, direct objects and indirect objects. (26) is an example of a declarative ditransitive sentence in Basque. The sentence contains the subject *gizonak* 'the man', the direct object *liburua* 'the book' and the indirect object *emakumeari* 'the woman'.

(26) Gizon-a-k emakume-a-ri liburu-a eman dio.
man-DEF-ERG woman-DEF-DAT book-DEF.ABS give has
'The man has given the book to the woman.'
(Basque, Keenan and Comrie 1977: 72)

A relative clause in Basque appears in the prenominal position and it is marked by the invariable marker *-n*.[7] (27a) shows the three relativizations that are derived from (26). In (27a), the ergative subject *gizonak* 'the man' from (26) is relativized. The head *gizona* 'the man', marked in bold, has lost its ergative marker *-k*, and follows the relative clause *makumeari liburua eman dio* 'who has given the book to the woman'. The suffix *-n* is attached to the relative clause. In (27b), the absolutive direct object *liburua* 'the book' from (26) is relativized. The head *liburua* 'the book', marked in bold, follows the relative clause *gizonak emakumeari eman dion* 'that the man has given to the woman'.[8] The suffix *-n* is attached to the relative clause. In (27c), the dative indirect object *emakumeari* 'the woman' from (26) is relativized. The head *emakumea* 'the man', marked in bold, has lost its dative marker *-ri*, and follows the relative clause *gizonak liburua eman dion* 'that the man has given the book to'. The suffix *-n* is attached to the relative clause.

(27) a. emakume-a-ri liburu-a eman dio-n **gizon-a**
woman-DEF-DAT book-DEF.ABS give has-REL man-DEF
'the man who has given the book to the woman'

[7] Additionally, the relativized positions do not appear in verbal agreement anymore, but this not visible in the example, because they are all phonologically zero.

[8] The absolutive direct object *liburua* 'the book' does not have an additional overt absolutive marker, so this difference cannot be observed when it is relativized.

b. gizon-a-k emakume-a-ri eman dio-n **liburu-a**
man-DEF-ERG woman-DEF-DAT give has-REL book-DEF
'the book that the man has given to the woman'

c. gizon-a-k liburu-a eman dio-n **emakume-a**
man-DEF-ERG book-DEF.ABS give has-REL woman-DEF
'the woman that the man has given the book to'

(Basque, Keenan and Comrie 1977: 72, my boldfacing)

Caha (2009) restates the implicational hierarchy in terms of case. Subject corresponds to nominative, direct object corresponds to accusative, and indirect object corresponds to dative. Again, the case scale NOM < ACC < DAT can be observed.

2.3 In morphology

In the two previous sections I showed that the case scale NOM < ACC < DAT can be observed in three syntactic phenomena. First, it shows up in case competition in headless relatives. Second, the case scale forms the basis for the implicational hierarchy observed in agreement across languages. Third, the identical implicational holds for relativization strategies cross-linguistically.

In this section, I show that this same case scale also shows up in morphology. First, syncretism only targets continuous regions on the case scale. Second, several languages show formal containment that mirrors the case scale.

2.3.1 Syncretism

Syncretism refers to the phenomenon whereby two or more different functions are fulfilled by a single form (cf. Baerman, Brown, and Corbett, 2002). In this section I discuss literature that shows that syncretism patterns among nominative, accusative and dative are not random. Instead, they pattern along the case scale NOM < ACC < DAT.

It has widely been observed that syncretism is restricted by the linear sequence NOM — ACC — DAT (Baerman, Brown, and Corbett, 2005; Caha, 2009; Zompì, 2017) (and see McFadden 2018; Smith et al. 2019 for similar claims concerning root suppletion). That is, if one orders cases in this linear sequence, only contiguous regions

in the sequence turn out to be syncretic. Following that, four possible patterns are attested crosslinguistically. First, all three cases are syncretic. Second, nominative and accusative are syncretic and the dative is not. Third, the accusative and the dative are syncretic and the nominative is not. Fourth, all cases are non-syncretic.

There is one pattern that is not attested crosslinguistically. This pattern does not target continuous regions, but non-contiguous ones: nominative and dative are syncretic and accusative is not. In other words, there is no ABA pattern (in which a form B intervenes between the two identically formed As) (Bobaljik, 2012).

Table 2.4 shows examples for each of these possible patterns. I give an example from a syncretism between nominative, accusative and dative from Dutch. The second person plural pronoun is *jullie* 'you.PL' is syncretic between nominative, accusative and dative. I give an example from a syncretism between nominative and accusative but not dative from German. The third person singular feminine *sie* 'she/her' is syncretic between nominative and accusative. The dative has a separate form: *ihr* 'her'. I give an example from a syncretism between accusative and dative but not nominative from Icelandic. The first person singular plural is *okkur* 'us' is syncretic between accusative and dative. The nominative has a separate form: *við* 'we' (Einarsson 1949: 68). I give an example from three distinct forms from Faroese. The second person singular is *tú* 'you' for nominative, *teg* 'you' for accusative and *tær* 'you' for dative (Lockwood 1977: 70). Crucially, to the best of my knowledge, there is no language in which the nominative and the dative are syncretic but the accusative is not.

Table 2.4:

pattern			NOM	ACC	DAT	translation	language
A	A	A	jullie	jullie	jullie	2PL	Dutch
A	A	B	sie	sie	ihr	3SG.F	German
A	B	B	við	okkur	okkur	1PL	Icelandic
A	B	C	tú	teg	tær	2SG	Faroese
A	B	A					not attested

In sum, case syncretism follows the ordering of the case scale in headless relatives: NOM < ACC < DAT.

2.3.2 Formal containment

This section shows a second way in which NOM < ACC < DAT is reflected in morphology: formal containment (cf. Caha, 2010; Zompì, 2017; Smith et al., 2019). In some languages, the form that is used for the accusative literally contains the form that is used for the nominative. In turn, the forms for the dative contains the form for the accusative. I illustrate this phenomenon with examples from Khanty.

Khanty (or Ostyak) shows formal containment in some of its pronouns (Nikolaeva 1999: 16 after Smith et al. 2019). Three examples are given in Table 2.5.

The nominative form for the first person singular is *ma* 'I.NOM'. The form for the accusative is *ma:ne:m* 'me'. This is the form for the nominative *ma* plus the accusative marker *-ne:m*. The form for the dative is *ma:ne:mna* 'me'. This is the form for the accusative *ma:ne:m* plus the dative marker *-na*. So, dative formally contains the accusative, and the accusative formally contains the nominative.

The third person singular and first person plural show the same pattern. The accusative forms *luwe:l* 'him/her' and *muŋe:w* 'us' contain the nominative forms *luw* and the *muŋ* plus the accusative marker *-e:l* or *-e:w*. The dative forms *luwe:lna* 'him/her' and *muŋe:wna* 'us' contain the accusative forms *luwe:l* and *muŋe:w* plus the dative marker *-na*. Again, the dative formally contains the accusative, which in turn contains the nominative.

Table 2.5: Case containment in Khanty

	1SG	3SG	1PL
NOM	ma	luw	muŋ
ACC	ma:-**ne:m**	luw-**e:l**	muŋ-**e:w**
DAT	ma:-**ne:m**-na	luw-**e:l**-na	muŋ-**e:w**-na

Other languages that show this phenomenon are West Tocharian (Gippert, 1987) and Vlakh and Kalderaš Romani (respectively Friedman 1991 and Boretzky 1994).

In sum, some languages morphologically look like NOM-ACC-DAT. This exactly reflects the case scale NOM < ACC < DAT.

2.4 Summary

Case competition in headless relatives adheres to the case scale in (28). If the internal and external case differ, cases more on the right of the scale win over cases more to the left on the case.

(28) NOM < ACC < DAT

This case scale is not only found in case competition in headless relatives. Implicational hierarchies regarding two syntactic phenomena appear across languages. The first one concerns agreement. If a language shows agreement with datives, it also shows agreement with accusatives and nominatives. If a language shows agreement with accusatives, it also shows agreement with nominatives. The second implicational hierarchy concerns relativization. If a dative in a language can be relativized with a particular strategy, an accusative and a nominative can be too using the same strategy. If an accusative can be relativized with a particular strategy, so can a nominative with this strategy.

The case scale also shows up in morphological patterns. First, if the cases are ordered according to the case scale, syncretism only target continuous forms, no ABA pattern appears. Second, some languages show how the dative formally contains accusative, and how the accusative formally contains the nominative.

These phenomena show that the pattern observed in headless relatives is not something that stands on itself. The scale is a pattern that recurs across languages and across different phenomena. Therefore, it should not be treated as an special process with its own stipulated rule. Instead, it is something general that should also follow from general processes in languages.

The next chapter shows how features of the nominative, accusative and dative are organized. All facts presented in this chapter can be derived from the organization of these features.

Chapter 3

Case decomposition meets ellipsis

At the beginning of the previous chapter I discussed the case scale active in headless relatives: NOM < ACC < DAT. In most accounts for headless relatives (cf. Harbert 1978; Pittner 1995; Vogel 2001; Grosu 2003, an exception to this is Himmelreich 2017) the case scale is stipulated. Headless relatives simply obey to that hierarchy.

"One of the reviewers notes that an explanation in terms of a Case hierarchy is rather stipulative. However, as far as I know, nobody has suggested a nonstipulative explanation for these facts." (Pittner 1995: 201) (footnote 4)

What I showed as well in the previous chapter is the pattern NOM < ACC < DAT is reccurring. It can be observed in at least two more syntactic phenomena: agreement en relativization.[1] We also see it in morphology with syncretism patterns and formal containment. Morphology was also mentioned by Pittner.

"Furthermore, the Case hierarchies receive some independent support by morphology as shown by the various inflectional paradigms." (Pittner 1995: 201) (footnote 4)

Do we have an abstract hierarchy that we make reference to time and time again? In an ideal analysis, the hierarchy exists once and all the other occurrences

[1] In this dissertation I do not work out an account for these two syntactic phenomena. They merely serve as an illustration that the pattern is reflected in different syntactic phenomena.

are reflexes of the first one. That also means we want morphology and syntax be connected.

That's exactly what I'm going to propose. (this intuition has been worked out in a different way in Himmelreich's dissertation.)

First I show where the case hierarchy is, which is in morphology, with actual structural containment: [[[NOM]ACC]DAT]. What we see in syntax is a by-product of the morphology, it's a consequence, it's an indirect relation. cause and effect

3.1 Case decomposition

The intuition: case is complex

containment:

(1) luw -e:l -na
3SG.NOM -ACC -DAT

(Kalderaš Romani, Boretzky 1994: 31-46)

syncretism:

contigent zones, no ABA. spellout is not only exact match, but also a subset of the features can be a match

I show how this can be derived exactly, within Nanosyntax, the framework which this proposal works in.

3.1.1 The basic idea

The claim: case should be decomposed

(Caha 2009, 2013 and later cf. Starke 2009; Bobaljik 2012; McFadden 2018; Van Baal and Don 2018; Smith et al. 2019)

With that in place, case containment and syncretism does not longer come as a surprise.

Table 3.1: Decomposed cases

case	features
NOM	F1
ACC	F1, F2
DAT	F1, F2, F3

3.1.2 Deriving case containment

(2) luw -e:l -na
3SG.NOM -ACC -DAT

(Kalderaš Romani, Boretzky 1994: 31-46)

in general the organization of nano

insert figure with syntax, lexicon, pf and cf

only syntax can make complex syntactic structures

The specific implications of this claim are strengthened by the way Nanosyntax treats complex feature structures. In particular, the core assumption is that the only way how a complex feature structure can arise is for it to be assembled by Merge. Complex feature structures are never the input to syntax, they are always its product. Syntactic trees are therefore not assembled from some preexisting 'feature bundles' or any similar complex building blocks (lexical items). The idea is that syntax starts from single, atomic, indivisible grammatical features, ideally the same for all languages (cf. Cinque & Rizzi 2008).

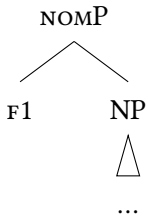
what's in the lexion?

Following Starke (2014), I understand lexical entries as nothing else but links between well-formed syntactic representations, well formed phonological representations, and/or conceptual representations. One of the motivations for adopting this view is to have a 'principled' theory of the lexicon. What 'principled' means is not that lexical items are no longer arbitrary associations between syntax, phonology and/or conceptual meaning; they still are. Rather, 'principled' is used in the sense that the format of the lexical item is restricted. Since wellformed syntactic structures are constrained by principles, and lexical items link such representations

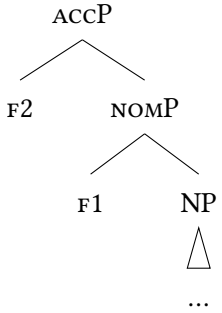
to their pronunciation (a phonological representation), it follows that the representations in a lexical entry are constrained by universal principles (the same ones that regulate what syntactic trees look like).

case trees

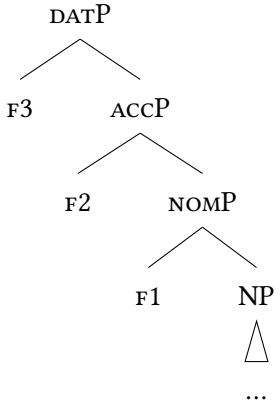
(3) a.



b.



c.



now let's look at the case decomposition example again

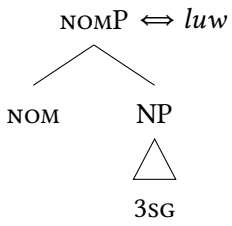
first the nominative [2]

[2] I address the issue of phrasal spellout in the next section.

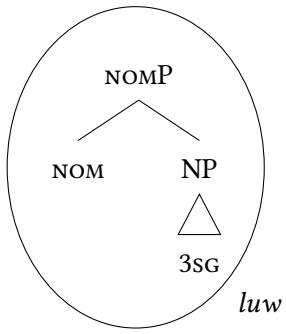
Table 3.2: Containment pattern

	1SG	3SG	1PL
NOM	ma	luw	muŋ
ACC	ma:**-ne:m**	luw**-e:l**	muŋ**-e:w**
DAT	ma:**-ne:m**-na	luw**-e:l**-na	muŋ**-e:w**-na

(4)

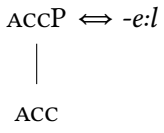


(5)



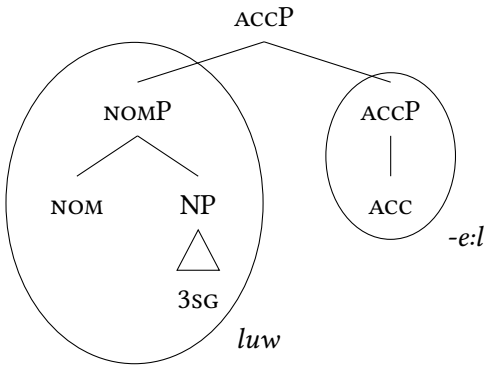
then the accusative [3]

(6)



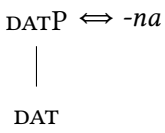
[3] I will come back to the movement later.

(7)

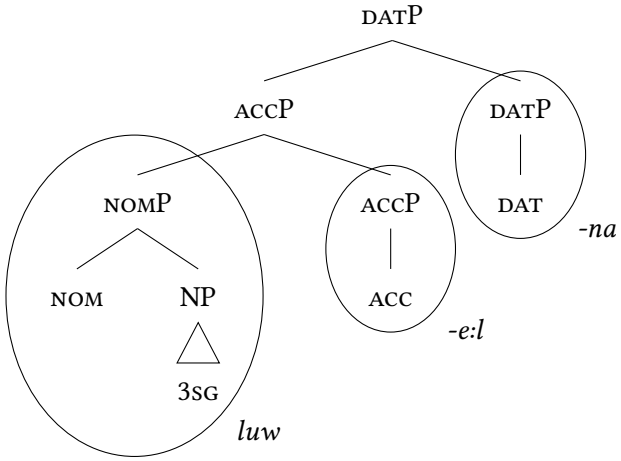


then dative

(8)



(9)



3.1.3 Deriving syncretism

basic background on matching in nano

phrasal spellout multiple features with a single element

faroese all different

(10) **The Superset Principle** Starke (2009):
A lexically stored tree matches a syntactic node iff the lexically stored tree

contains the syntactic node.

What the Superset Principle states is that matching between a lexical tree and a syntactic tree does not require full identity, but 'only' containment.

Table 3.3: Syncretism pattern

pattern			NOM	ACC	DAT	translation	language
A	A	A	jullie	jullie	jullie	2PL	Dutch
A	A	B	sie	sie	ihr	3SG.F	German
A	B	B	við	okkur	okkur	1PL	Icelandic
A	B	C	tú	teg	tær	2SG	Faroese
A	B	A					not attested

jullie: a single lexical entry for all

(11) **The Elsewhere Condition** (Kiparsky 1973, formulated as in Caha 2019): When two entries can spell out a given node, the more specific entry wins. Under the Superset Principle governed insertion, the more specific entry is the one which has fewer unused features.

sie for acc ihr for dat

okkur for dat vidxd for nom

3.2 Ellipsis

Ellipsis targets phrases

it does not delete elements one by one

(1) Sluicing Someone stayed out until 7am, but I have no idea who stayed out until 7 am.

(2) VP ellipsis Elin stayed out until 7am, and Fraser did stay out until 7 am too.

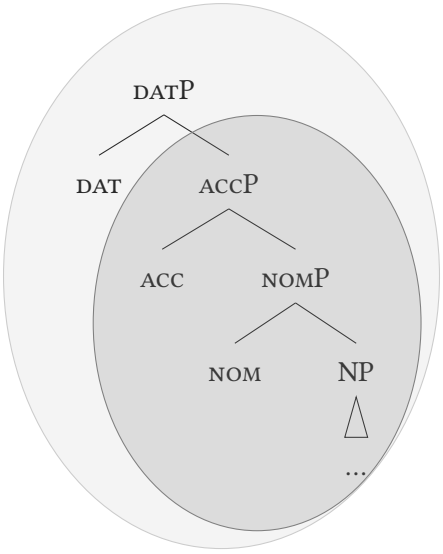
(3) Fragment answers Q: Who stayed out until 7am? A: Elin stayed out until 7am

(Õ) VP Ellipsis: a. Betsy was hassled by the police and Peter was [VP hassled by the police] too. b. John put his beer on the floor, so Mary did [VP put her beer on the floor]

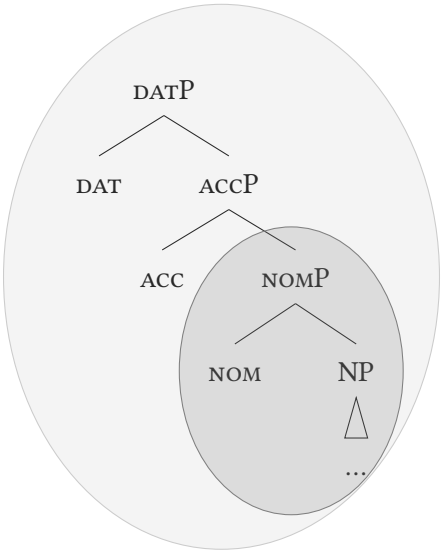
3.3 Reflex of morphology in syntax

3.3.1 Morphology

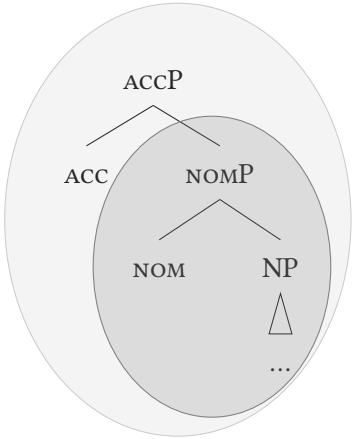
(12)



(13)



(14)



3.3.2 Syntax

Table 3.4: DATP deletes ACCP

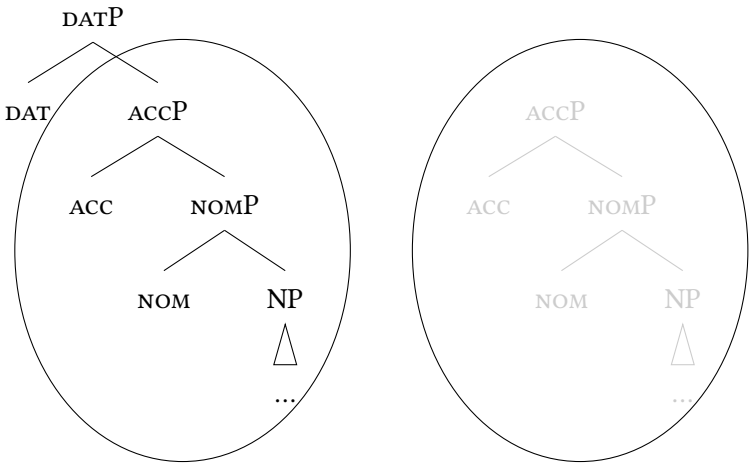


Table 3.5: DATP deletes NOMP

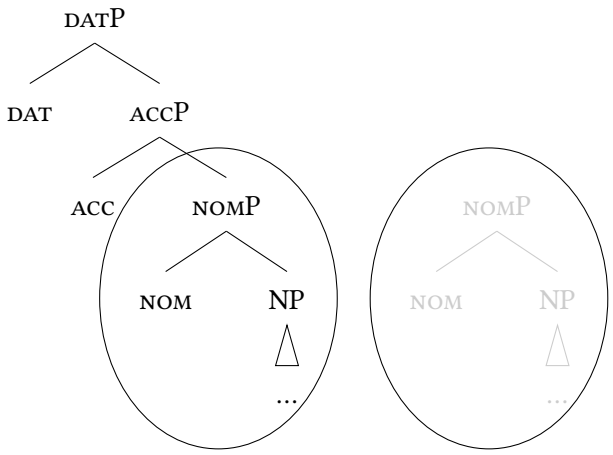
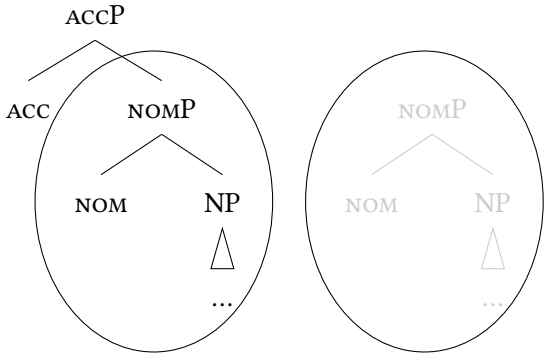


Table 3.6: ACCP deletes NOMP



3.4 Similar analyses

Himmelreich

Part II

The varying participants

Chapter 4

The variation

4.1 The different patterns

In Gothic, the more complex case wins. In OHG, the more complex case wins, only if it is external. In MG, the more complex case wins, only if it is internal. In Italian, case mismatch is not allowed.

Table 4.1: Variation

	INT>EXT	EXT>INT
MG	✓	*
OHG	*	✓
Gothic	✓	✓
Italian	*	*

4.1.1 Both: Gothic

EXT / INT	[NOM]	[ACC]	[DAT]
[NOM]		ACC *NOM	DAT *NOM
[ACC]	*NOM ACC		DAT *ACC
[DAT]	*NOM DAT	*ACC DAT	

4.1.2 Only from external: Old High German

(1) INT:NOM, EXT:ACC

a. NOM not attested

b. ih bibringu fona Juda [dhen mina berga chisetzit]
I educate$_{[ACC]}$ about Juda who.ACC my mountains through pull$_{[NOM]}$
'I educate the one who wanders through my mountains about Judas'
(OHG, Isid. 34:3, Behaghel 1923-1932: 761)

(2) INT:NOM, EXT:DAT

a. NOM not attested

b. aer antuurta [demo zaimo sprah]
he replied$_{[DAT]}$ who.DAT to him spoke$_{[NOM]}$
'he replied to the one who spoke to him'
(OHG, Mons. 7:24, Behaghel 1923-1932: 761, after Pittner 1995: 199)

(3) INT:ACC, EXT:NOM

a. ACC not attested

b. NOM not attested

(4) INT:ACC, EXT:DAT

a. ACC not attested

b. istû furira Abrâhame, ouh [thên man hiar nû
are you superior$_{[\text{DAT}]}$ to Abraham also who.DAT one here now
zalta]?
named$_{[\text{ACC}]}$
'are you superior to Abraham to those which they just mentioned?'
(OHG, Otfrid III 18:33, Behaghel 1923-1932: 761)

(5) INT:DAT, EXT:NOM

a. DAT not attested
b. NOM not attested

(6) INT:DAT, EXT:ACC

a. DAT not attested
b. ACC not attested

Don't know:

(7) OHG

a. gaat uz diu halt za dem iz forchaufent

'' (OHG, Monsee Fragments 20,14, Behaghel 1923-1932, p. 761)

b. thia laz ih themo iz lisit thar

'' (OHG, Otfrid I,19,25, Behaghel 1923-1932, p. 761)

So, to sum up:

Table 4.2: Case attraction in headless relatives in OHG

EXT / INT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC *NOM	DAT *NOM
[ACC]	*NOM *ACC	ACC	DAT *ACC
[DAT]	*NOM *DAT	*ACC *DAT	DAT

4.1.3 Only from internal: Modern German

(8) INT:NOM, EXT:ACC

a. *Ich lade ein, [wer mir sympathisch ist].
I invite$_{[ACC]}$ who.NOM me nice is$_{[NOM]}$
'I invite who I like.' (Vogel 2001: 344)

b. *Ich lade ein, [wen mir sympathisch ist].
I invite$_{[ACC]}$ who.ACC me nice is$_{[NOM]}$
'I invite who I like.' (Vogel 2001: 344)

(9) INT:NOM, EXT:DAT

a. *Ich vertraue, [wer Hitchcock mag].
I trust$_{[DAT]}$ who.NOM Hitchcock likes$_{[NOM]}$
'I trust who likes Hitchcock.' (Vogel 2001: 345)

b. *Ich vertraue, [wem Hitchcock mag].
I trust$_{[DAT]}$ who.DAT Hitchcock likes$_{[NOM]}$
'I trust who likes Hitchcock.' (Vogel 2001: 345)

(10) INT:ACC, EXT:NOM

a. Uns besucht [wen Maria mag].
Us visits$_{[NOM]}$ who.ACC Maria.NOM likes$_{[ACC]}$
'Who visits us likes Maria likes.' (Vogel 2001: 343)

b. *Uns besucht [wer Maria mag].
Us visits$_{[NOM]}$ who.NOM Maria.NOM likes$_{[ACC]}$
'Who visits us likes Maria likes.' (Vogel 2001: 343)

(11) INT:ACC, EXT:DAT

a. *Ich vertraue [wem auch Maria mag].
I trust$_{[DAT]}$ who.DAT also Maria likes$_{[ACC]}$.
'I trust whoever Maria also likes.' (Vogel 2001: 345)

b. *Ich vertraue [wen auch Maria mag].
I trust$_{[DAT]}$ who.ACC also Maria likes$_{[ACC]}$.
'I trust whoever Maria also likes.' (Vogel 2001: 345)

(12) INT:DAT, EXT:NOM

a. Uns besucht [wem Maria vertraut].
us visits$_{[NOM]}$ who.DAT Maria trusts$_{[DAT]}$
'Who visits us, Maria trusts.' (Vogel 2001: 343)

b. *Uns besucht [wer Maria vertraut].
us visits$_{[NOM]}$ who.NOM Maria trusts$_{[DAT]}$
'Who visits us, Maria trusts.' (Vogel 2001: 343)

(13) INT:DAT, EXT:ACC

a. Ich lade ein [wem auch Maria vertraut].
I invite$_{[ACC]}$ who.DAT also Maria trusts$_{[DAT]}$.
'I invite whoever Maria also trusts.' (Vogel 2001: 344)

b. *Ich lade ein [wen auch Maria vertraut].
I invite$_{[ACC]}$ who.ACC also Maria trusts$_{[DAT]}$.
'I invite whoever Maria also trusts.' (Vogel 2001: 344)

Table 4.3: Case attraction in headless relatives in MG

EXT / INT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	*ACC *NOM	*DAT *NOM
[ACC]	*NOM ACC	ACC	*DAT *ACC
[DAT]	*NOM DAT	*ACC DAT	DAT

4.1.4 None: Italian

4.2 Shape of relative pronoun

Table 4.4: Shape of relative pronoun per language

	rel pron in headless rel	rel prons in light-headed rel
Gothic	A +C	A + A + C
OHG	A	A + A
MG	B	A + A
Italian	B	A + B

4.2.1 Gothic

4.2.1.1 Headless relatives

D + COMP

Table 4.5: Relative pronouns in headless relatives in Gothic

	N.SG	M.SG	F.SG
NOM	þ-at-ei	s-a-ei	s-ō-ei
ACC	þ-at-ei	þ-an-ei	þ-ō-ei
DAT	þ-amm-ei	þ-amm-ei	þ-izái-ei
	N.PL	M.PL	F.PL
NOM	þ-ō-ei	þ-ái-ei	þ-ōz-ei
ACC	þ-ō-ei	þ-anz-ei	þ-ōz-ei
DAT	þ-áim-ei	þ-áim-ei	þ-áim-ei

4.2.1.2 Light-headed relatives

D, D + COMP

4.2.2 Old High German

4.2.2.1 Headless relatives

D

Table 4.6: Relative pronouns in headless relatives in OHG

	N.SG	M.SG	F.SG
NOM	d-az̨	d-ër	d-iu
ACC	d-az̨	d-ën	d-ea/-ia/(-ie)
DAT	d-ëmu/-ëmo	d-ëmu/-ëmo	d-ëru/-ëro
	N.PL	M.PL	F.PL
NOM	d-iu/-ei	d-ē/-ea/-ia/-ie	d-eo/-io
ACC	d-iu/-ei	d-ē/-ea/-ia/-ie	d-eo/-io
DAT	d-ēm/-ēn	d-ēm/-ēn	d-ēm/-ēn

4.2.2.2 Light-headed relatives

D, D

Wouldn't we now not expect that Modern German patterns with Old High German wrt attraction in headed constructions. Yes, we would. And yes, this is exactly what we see. Paper by Bader on case attraction.

4.2.3 Modern German

4.2.3.1 Headless relatives

WH

Table 4.7: Relative pronouns in headless relatives in MG

	INAN	AN
NOM	w-as	w-er
ACC	w-as	w-en
DAT	-	w-em

4.2.3.2 Light-headed relatives

Pattern in light-headed relatives: D, D

4.2.4 Italian

4.2.4.1 Headless relatives

WH: *che*

4.2.4.2 Light-headed relatives

D, WH: *quello*, *che*

4.3 Bringing this together

Table 4.8: Variation and relative pronoun shape

	rel pron in headless rel	rel prons in light-headed rel	INT>EXT	EXT>INT
Gothic	A +C	A + A + C	✓	✓
OHG	A	A + A	*	✓
MG	B	A + A	✓	*
Italian	B	A + B	*	*

And how can we now derive this?

4.3.1 All allow for matching ones

First, I discuss the matching headless relatives, in which the internal and external case match.

Consider the example in (14), repeated from the introduction. In this example, the internal case and the external case are accusative. The relative clause, including

the relative pronoun, is marked in gray. The internal case is accusative. The predicate *arma* 'pity' takes accusative objects. The external case is accusative as well. Here the predicate *gaarma* 'pity' takes accusative objects. The relative pronoun *þan(a)* 'who.ACC' appears in the accusative.

(14) gaarma þan -ei arma
pity$_{[ACC]}$ who.ACC -COMP pity$_{[ACC]}$
'I will pity (him) whom I pity' (Gothic, Rom. 9:15, after Harbert 1978: 339)

Consider the example in (15), in which the internal case and the external case are nominative. The relative clause, including the relative pronoun, is marked in gray. The internal case is nominative. The predicate *matjai* 'eats' takes nominative subjects. The external case is nominative as well. Here the predicate *gadauþnai* 'die' takes nominative subjects. The relative pronoun *sa* 'who.NOM' appears in the nominative.

(15) ei sa -ei þis matjai, ni gadauþnai
that who.NOM -COMP of this eats$_{[NOM]}$ not die$_{[NOM]}$
'that (he) who eats of this may not die'
(Gothic, John 6:50, after Harbert 1978: 337)

Consider the examples in (16), in which the internal case and the external case are dative. The relative clauses, including the relative pronoun, is marked in gray. The internal case is dative. The predicates *gabaur* 'tribute', *mota* 'custom', *agis* 'fear' and *sweriþa* 'honour' takes dative objects. The external case is dative as well. The same predicates as in the relative clause take dative objects. The relative pronouns *þamm(a)* 'who.DAT' appear in the dative.

(16) a. þamm -ei gabaur gabaur
who.DAT -COMP tribute$_{[DAT]}$ tribute$_{[DAT]}$
'tribute to (him) whom tribute is due'
b. þamm -ei mota mota
who.DAT -COMP custom$_{[DAT]}$ custom$_{[DAT]}$
'custom to (him) whom custom is due'

c. þamm -ei agis agis
who.DAT -COMP fear$_{[DAT]}$ fear$_{[DAT]}$
'fear (him) whom fear is due'

d. þamm -ei sweriþa sweriþa
who.DAT -COMP honour$_{[DAT]}$ honour$_{[DAT]}$
'honour (him) whom honour is due'

(Gothic, Rom. 13:7, after Harbert 1978: 339)

So far only the diagonal line is filled. These are the matching examples, the examples in which the internal case matches the external case. The relative pronoun appears in the case which is the internal and external case. The nominative is given in (15), the accusative in (14), and the dative in (16).

Table 4.9: Summary of Gothic matching headless relative data

EXT / INT	[NOM]	[ACC]	[DAT]
[NOM]	NOM		
[ACC]		ACC	
[DAT]			DAT

Chapter 5

Connecting morphology and syntax

5.1 Background: relative clause theory

Standard raising, probably Cinque's double-headed structures

5.2 Analysis

5.2.1 Old High German

In OHG, proper attraction in headless relatives can be derived from headed relatives. The relative pronoun is the determiner from the main clause. Under a double-headed Cinque-analysis, it is the internal DP that is deleted.

(1) DAT instead of ?

a. was allon them ando, them thar quamun at erist tuo
what all d.DAT do to d.DAT there x as first do?
''

than is im so them salte them (the M) man bi seuues Stade oido teuuirpit, 1370.
Hon them erlscipie them thar inne uuas, 2768.
allon them ando them thar quamun at erist tuo, 3435.

fon them herrosten them thes hnses giuueld, 3344 C.
sagda them alat them (the M) thar all giscaop, 4636. —

(2) ACC instead of NOM

a. unde ne wolden níet besên den mort den dô was
and not wanted not see the murder.ACC that.ACC there had
geschên
happened
'and they didn't want to see the murder that had happened.'
(MHG, Nib. 1391,14, Behaghel 1923-1932: 756, after Pittner 1995: 198)

5.2.2 Modern German

In German, inverse attraction in headed relatives can be shown to be very different from inverse attraction in headless relatives. I am not set on an analysis yet. Under a double-headed Cinque-analysis, it is the external DP that is deleted. Grafting is also still an option.

5.2.3 Gothic

In Gothic, ?

Part III

Details

Chapter 6

Technical implementation

6.1 Background

(1) **Spellout Algorithm:**
Merge F and

a. Spell out FP.
b. If (a) fails, attempt movement of the spec of the complement of F, and retry (a).
c. If (b) fails, move the complement of F, and retry (a).

When a new match is found, it overrides previous spellouts.

(2) **Cyclic Override** (Starke, 2018):
Lexicalisation at a node XP overrides any previous match at a phrase contained in XP.

If the spellout procedure in (1) fails, backtracking takes place.

(3) **Backtracking** (Starke, 2018):
When spellout fails, go back to the previous cycle, and try the next option for that cycle.

If backtracking also does not help, a specifier is constructed.

(4) **Spec Formation** (Starke, 2018):
If Merge F has failed to spell out (even after backtracking), try to spawn a new derivation providing the feature F and merge that with the current derivation, projecting the feature F at the top node.

6.2 Derivations

Chapter 7

Conclusion

7.1 Coming back to the genitive

In Gothic headless relatives, there is data available of the genitive in case competition with the accusative. The genitive wins in this competition. I give an example in which the internal case is accusative and the external case is genitive in (1). The relative clause is marked in bold, the relative pronoun is not. The internal case is accusative. The predicate *gasehvun* 'saw' takes accusative objects. The external case is genitive. The noun *waiht* 'thing' combines with a genitive. The relative pronoun *þiz(e)* 'what.GEN' appears in the external case: the genitive.

(1) ni waiht þiz **-ei gasehvun**
not thing$_{[GEN]}$ what.GEN -COMP saw$_{[ACC]}$
'not any of (that) which they saw'
(Gothic, Luke 9:36, adapted from Harbert 1978: 340)

If the internal case is genitive and the external case is accusative, the genitive wins as well. Crucially, there are no attested examples in Gothic of genitives in case competition with nominatives or datives.

The same holds for the two other main languages discussed in this thesis: Modern German and Old High German. In Modern German, case competitions have been reported between all possible case combinations, so also between genitives and nominatives, between genitives and accusatives, and between genitives and

datives (cf. Vogel, 2001). The genitive wins over the nominative and the accusative. In a competition between the genitive and the dative neither of them gives a grammatical result. Old High German might show some examples of case competition between genitives and accusatives and genitives and nominative. In these cases, the genitive always wins. No examples of datives against genitives are attested (Behaghel, 1923-1932). In sum, the genitive does not appear in all possible case competition combinations in all three languages, and is therefore excluded.

What do I predict for the genitive? Starke: S-acc — S-dat — gen — B-acc — B-dat

hierarchies for each language individually. Gothic syncretisms: acc-dat, acc-nom, nom-gen(!). Modern German: nom-acc-dat-gen? Old High German: ?

then the predictions would be..

The genitive differs from the other cases in a particular way. That is, nominative, accusative and dative are dependents of the verb (or prepositions). Genitives can be dependents of verbs, or they can be dependents of nouns, as possessors or partitives. Consider the example in (1). The genitive relative pronoun *þiz(e)* 'what.GEN' is a dependent of the noun *waiht* 'thing'. Most of the examples in headless relatives contain genitives that depend on nouns and not those that depend on verbs. The (genitive) possessor is also placed far away from the other three cases in Keenan and Comrie's (1977) relativization hiearchy.

I leave it for future research..

Primary texts

Col.	Colossians, New Testament
Isid.	Der althochdeutsche Isidor
John	John, New Testament
Luke	Luke, New Testament
Mark	Mark, New Testament
Mons.	The Monsee fragments
Nib.	Das Nibelungenlied
Otfrid	Otfrid's Evangelienbuch
Rom.	Romans, New Testament

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