CASE COMPETITION IN HEADLESS RELATIVES

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List of abbreviations

ABS	absolutive
ACC	accusative
AN	animate
AOR	aorist
AUX	auxiliary
CL	clitic
CMPR	comparative
COMP	complementizer
CONN	connective
DAT	dative
DEF	definite
DEM	demonstrative
DET	determiner
DUR	durative
ERG	ergative
EXT	external case
F	feminine
GEN	genitive
INF	infinitive
INT	internal case

MOD	modal marker
M	masculine
NF	non-future
NMLZ	nominalization
NOM	nominative
N	neuter
OBJ	object
OPT	optative
PASS	passive
PL	plural
POSS	possessive
PRED	predicative
PRES	present tense
PRET	preterite
PROG	progressive
PST	past tense
PTCP	participle
REL	relative
SBJV	subjunctive mood
SG	singular
SS	same subject
SUBJ	subject
TOP	topic
TR	transitional sound

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.

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 Decomposing 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). What can descriptively be called the subject of the predicate *mögen* 'to like' is marked as nominative. What can be described as the object of *mögen* 'to like' 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 *mögen* 'to like'. 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 *mögen* 'to like'.

(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 *mögen* 'to like' in the main clause. The relative pronoun *der* 'REL.SG.M.NOM' appears in nominative case, because it is the descriptive subject of *mögen* 'to like' 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 *mögen* 'to like' in the main clause. The relative pronoun *den* 'REL.SG.M.ACC' appears in accusative case, because it is the descriptive object of *suchen* 'to search' in the relative clause.

(2) a. Der Lehrer mag den Schüler, der nach draußen
the.NOM teacher likes the.ACC student REL.SG.M.NOM 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.SG.M.ACC 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 patterns among the two languages differ slightly, and the first part of the dissertation can be illustrated best with Gothic.

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

(3) gaarma þan -ei arma
pity.PRES.1SG$_{[ACC]}$ REL.SG.M.ACC -COMP pity.PRES.1SG$_{[ACC]}$
'I pity him whom I pity'

[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.

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

(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 *gaarman* 'to pity', the predicate in the relative clause *arman* 'to pity'. From now on, I use the terms internal and external case to refer to these two possible case sources. Now there are three logical possibilities for the source of the accusative case on *þan(a)* 'REL.SG.M.ACC' in (3): the internal case, the external case, or both.

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 *arman* 'to pity'. The predicate *arman* 'to 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 *gaarman* 'to pity'. The predicate *gaarman* 'to pity' takes accusative objects. In (3), the external case is accusative.

Now I return to the question where *þan(a)* 'REL.SG.M.ACC' 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, 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.

[3]Later on I will argue that this indirect process is actually a deletion operation.

Consider the example in (4), in which the internal case is accusative and the external case is nominative. The internal case is accusative. The predicate *frijon* 'to love' takes accusative objects, as indicated by the subscript on the predicate. The external case is accusative. The predicate *wisan* 'to be' takes nominative subjects, indicated by the subscript on the predicate. The relative pronoun *þan(a)* 'REL.SG.M.ACC' appears in accusative. This accusative can only come from the predicate *frijon* 'to love', 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) **þan** **-ei** **frijos** siuks ist
REL.SG.M.ACC -COMP love.PRES.2SG.$_{[ACC]}$ sick be.PRES.3SG$_{[NOM]}$
'the one whom you love is sick'
(Gothic, John 11:3, adapted from Harbert 1978: 342)

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 nominative case.

Now consider the example in (5), in which the internal case is nominative and the external case is accusative. The internal case is nominative. The predicate *wisan* 'to be' takes nominative subjects, as indicated by the subscript on the predicate. The external case is accusative. The predicate *ussiggwan* 'to read' takes accusative objects, as indicated by the subscript on the predicate. The relative pronoun *þo* 'REL.SG.N.ACC' appears in the accusative case. This accusative can only come from the predicate *ussiggwan* 'to read', which is the external case here. The relative pronoun is not marked in bold, just like as the main clause, showing that the relative pronoun patterns with the main clause.

(5) jah þo **-ei** **ist** **us** **Laudeikaion** jus
and REL.SG.N.ACC -COMP be.PRES.3SG$_{[NOM]}$ from Laodicea 2PL.NOM
ussiggwaid
read.$_{[ACC]}$
'and you read the one which is from Laodicea'
(Gothic, Col. 4:16, adapted from Harbert 1978: 357)

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 nominative 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 take nominative and accusative, and in both cases, the relative pronoun appeared in accusative case. In other words, there was a competition between nominative and accusative, and accusative 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 *frijon* 'to love' in (4) the subscript indicates which case the complement of the verb appears in. The subscript on *wisan* 'to be' in (4) refers to the case the descriptive subject appears in. A subscript can also refer to the case of the indirect object of a predicate, a possibility that arises in the next chapter. In other words, the subscript can refer several elements: a subject, direct 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 regarding 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.

1.3 The scope of this dissertation

1.3.1 Case attraction

Case attraction in headed relatives seems related, but I will not account for it.

(6) unde ne wolden níet besên den mort den dô was geschên
and not wanted not see the murder.ACC that.ACC there had 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)

(7) Den schilt den er vür bôt der wart schiere
the.ACC shield.ACC which.ACC he held$_{\text{ACC}}$, that.NOM was quickly
zeslagen
shattered$_{\text{NOM}}$
'The shield he held was quickly shattered' Iwein 6722f., Lenerz 1984: 116)

OHG has case attraction in headed relatives, Gothic does not, but both show case competition in headless relatives. So, there does not seem to be a one-to-one connection there. I leave it for further research.

1.3.2 Syncretism

For a long time it has been noted that syncretism seems to resolve case conflicts. –references–

A language like Polish, that normally doesn't allow for any case mismatches, even allows for it. In this dissertation I do not offer a detailed account for what a derivation looks like.

(8) Jan unika kogokolwiek wczoraj obraził.
Jan avoid.3SG$_{[\text{GEN}]}$ REL.SG.M.ACC/GEN yesterday offend.3SG.PST$_{[\text{ACC}]}$.
'Jan avoided whoever he offended yesterday.'

I won't talk about the details.

1.3.3 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 (9). 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.

(9) 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 (9). 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.

more: in middle high german only the genitive shows case attraction in headed relatives. again, it is different from the others.

I leave it for future research..

Part I

The case

competes ains]

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 in different languages. Section 2.3 shows that the case scale also appears in morphology. 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. In this section I first discuss examples in which the internal case and the external case match, and then examples in which they differ.

If the internal case and the external case are one and the same case, the relative pronoun simply surfaces in that case. I illustrate this with examples from headless

relatives in Gothic. The cases I discuss are nominative, accusative and dative.

The description of Gothic is mostly based on (Harbert, 1978). The spelling of the examples follows the Wulfila Project website.[1] The glossing comes from the detailed tagging on that same website. The translations are my own.

Consider the example in (2), in which the internal nominative case competes against the external nominative case. The internal case is nominative, as the predicate *matjan* 'to eat' takes nominative subjects. The external case is nominative as well, as the predicate *ga-dauþnan* 'to die' also takes nominative subjects. The relative pronoun *sa* 'REL.SG.M.NOM' appears in the internal and external case: the nominative.

(2) ei sa -ei þis matjai, ni
COMP REL.SG.M.NOM -COMP DEM.SG.M.GEN eat.OPT.3SG$_{[NOM]}$ not
gadauþnai
die.OPT.3SG$_{[NOM]}$
'that the one, who eats of this may not die'
(Gothic, John 6:50, after Harbert 1978: 337)

Consider the example in (3), repeated from the introduction. In this example, the internal accusative case competes against the external accusative case.

The internal case is accusative, as the predicate *arman* 'to pity' takes accusative objects. The external case is accusative as well, as the predicate *ga-arman* 'to pity' also takes accusative objects. The relative pronoun *þan(a)* 'REL.SG.M.ACC' appears in the internal and external case: the accusative.

(3) gaarma þan -ei arma
pity.1SG$_{[ACC]}$ REL.SG.M.ACC -COMP pity.1SG$_{[ACC]}$
'I pity him, whom I pity' (Gothic, Rom. 9:15, after Harbert 1978: 339)

Consider the example in (4), in which the internal dative case competes against the external dative case. The internal case is dative, as the predicate *manwjan* 'to prepare' takes dative indirect objects. The external case is dative as well, as the

[1] <http://www.wulfila.be>

predicate *giban* 'to give' also takes dative indirect objects. The relative pronoun *þaim)* 'REL.SG.M.DAT' appears in the internal and external case: the dative.

(4) nist mein du giban, alja þaim -ei
is not 1SG.POSS.NOM to give.INF$_{[DAT]}$ except for REL.SG.M.DAT -COMP
manwiþ was
prepare.PTCP be.PRET.3SG$_{[DAT]}$
'it is not mine to give except for to the one, for whom it was prepared'
(Gothic, Mark 10:49, after Harbert 1978: 339)

These findings can be summarized as in Table 2.1. The left column shows the internal case (INT) between square brackets. The upper row shows the external case (EXT) between square brackets. The other cells indicate the case of the relative pronoun. The top-left to bottom-right diagonal corresponds to the examples I have given so far in which the internal and external case match. The nominative marked in light gray corresponds to (2), in which the internal nominative case competes ains] the external nominative case, and the relative pronoun surfaces in the nominative case. The accusative marked in dark gray corresponds to (3), in which the internal accusative case competes against the external accusative case, and the relative pronoun surfaces in the accusative case. The unmarked dative corresponds to (4), in which the internal dative case competes against the external dative case, and the relative pronoun surfaces in the dative case.

Table 2.1: Gothic headless relatives (matching)

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM		
[ACC]		ACC	
[DAT]			DAT

In Table 2.1, six cells remain empty. These are the cases in which the internal and the external case differ. It has been argued in the literature that the two com-

peting 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 of this chapter, repeated here in (5). Elements more to the right on this scale win over elements more to the left on this scale.[2]

(5) NOM < ACC < DAT

This can be reformulated as follows. In a competition, accusative wins over nominative, dative wins over nominative, and dative wins over accusative. In this section I illustrate this scale with examples. When two differing 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 start with the competition between the accusative and the nominative. Following the case scale in (5), the relative pronoun appears in the accusative case and never in the nominative.

Consider the example in (6), repeated from the introduction. In this example, the internal accusative case competes against the external nominative case. The internal case is accusative, as the predicate *frijon* 'to love' takes accusative objects. The external case is nominative, as the predicate *wisan* 'to be' takes nominative subjects. The relative pronoun *þan(a)* 'REL.SG.M.ACC' 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 internal case is accusative, the external case is nominative and the relative pronoun appears in the nominative case are unattested.

(6) **þan** **-ei** **frijos** siuks ist
REL.SG.M.ACC -COMP love.PRES.2SG.$_{[ACC]}$ sick be.PRES.3SG$_{[NOM]}$
'the one whom you love is sick'
(Gothic, John 11:3, adapted from Harbert 1978: 342)

[2]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. I discussed the genitive briefly in Section 1.3.3.

Consider the example in (7), repeated from the introduction. In this example, the the internal nominative case competes against the external accusative case. The internal case is nominative, as the predicate *wisan* 'to be' takes nominative subjects. The external case is accusative, as the predicate *ussiggwan* 'to read' takes accusative objects. The relative pronoun *þo* 'REL.SG.N.ACC' 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 internal case is nominative, the external case is accusative and the relative pronoun appears in the nominative case are unattested.

(7) jah þo **-ei** **ist** **us** **Laudeikaion** jus
and REL.SG.N.ACC -COMP be.PRES.3SG$_{[NOM]}$ from Laodicea 2.PL.NOM
ussiggwaid
read.$_{[ACC]}$
'and you read the one which is from Laodicea'
(Gothic, Col. 4:16, adapted from Harbert 1978: 357)

The two examples in which the nominative and the accusative compete are showed in Table 2.2. Within the newly filled out cells, two cases are given. The case in the bottom-left corner stands for the relative pronoun in the internal case. The case in the top-right corner stands for the relative pronoun in the external case. The grammatical examples are marked in light and dark gray. The unattested examples are preceded by an asterix and are unmarked.[3]

The light gray marking corresponds to (6), in which the internal accusative wins the case competition over the external nominative, and the relative pronoun surfaces in the accusative case. The dark gray marking corresponds to (7), in which the external accusative wins the case competition over the internal nominative, and the relative pronoun surfaces in the accusative case. The instances of *NOM that appear in the same cells indicate that there are no examples, in which the nominative and the accusative compete and the relative pronoun appears in the nominative case.

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

Table 2.2: Gothic headless relatives (NOM — ACC)

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

I continue with the competition between the dative and the nominative. Following the case scale in (5), the relative pronoun appears in the dative case and never in the nominative.

Consider the example in (8), in which the internal dative case competes against the external nominative case. The internal case is dative, as the predicate *fraletan* 'to forgive' takes dative objects. The external case is nominative, as the predicate *frijon* 'to love' takes nominative subjects. The relative pronoun *þamm(a)* 'REL.SG.M.DAT' 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 internal case is dative, the external case is nominative and the relative pronoun appears in the nominative case are unattested.

(8) iþ **þamm** **-ei** **leitil fraletada** leitil frijod
but REL.SG.M.DAT -COMP little forgive.PASS.PRES.3SG$_{[DAT]}$ little love.$_{[NOM]}$
'but the one whom little is forgiven loves little'
(Gothic, Luke 7:47, adapted from Harbert 1978: 342)

Consider the example in (9), in which the internal nominative case competes against the external dative case. The internal case is nominative, as the predicate *wisan* 'to be' takes nominative subjects. The external case is dative, as the predicate *fraþjan* 'to

think about' takes dative indirect objects. The relative pronoun *þaim* 'REL.PL.N.DAT' 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 internal case is nominative, the external case is dative and the relative pronoun appears in the nominative case are unattested.

(9) þaim **-ei** **iupa** **sind** fraþjaiþ
REL.PL.N.DAT -COMP above be.PRES.3PL$_{[NOM]}$ think about.OPT.PRES.2PL$_{[DAT]}$
'think about those which are above'
(Gothic, Col. 3:2, adapted from Harbert 1978: 339)

The two examples in which the nominative and the dative compete are showed in Table 2.3. The light gray marking corresponds to (8), in which the internal dative wins the case competition over the external nominative, and the relative pronoun surfaces in the dative case. The dark gray marking corresponds to (9), in which the external dative wins the case competition over the internal nominative, and the relative pronoun surfaces in the dative case. The instances of *NOM that appear in the same cells indicate that there are no examples, in which the nominative and the dative compete and the relative pronoun appears in the nominative case.

Table 2.3: Gothic headless relatives (NOM — DAT)

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

I end with the competition between the dative and the accusative. Following

the case scale in (5), the relative pronoun appears in the dative case and never in the accusative.

Consider the example in (10), in which the internal dative case competes against the external accusative case. The internal case is dative, as the preposition *ana* 'on' takes dative complements.[4,5] The external case is accusative, as the predicate *ushafjan* 'to pick up' takes accusative objects. The relative pronoun *þamm(a)* 'REL.SG.N.DAT' 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 internal case is dative, the external case is accusative and the relative pronoun appears in the accusative case are unattested.

(10) ushafjands **ana** **þamm** **-ei** **lag**
pick up.PRES.PTCP$_{[ACC]}$ on$_{[DAT]}$ REL.SG.N.DAT -COMP lie.PRET.3SG
'picking up that what he lay on'

[4]The example in (10) differs from the other examples of headless relatives. In this example, it is a preposition that assigns a particular case to the relative pronoun. So far, I have only given examples in which it is a verbal predicate that assigns a case to the relative pronoun (or the absent head). The reason for that is to keep the data set as homogenous as possible. Harbert (1978) reports there is no such example with the dative as internal case and the accusative as external case. My own research reaches the same conclusion. The absence of a headless relative with an internal dative case and an external accusative case (both assigned by verbal predicates) is not surprising, mainly for two reasons. First, the headless relative construction is infrequent to begin with. Harbert reports of some case competition combinations only a single or a few occurrences. Second, Gothic only has a few verbs that take dative complements.

There is reason to believe that this missing occurrence is due to the above mentioned reasons rather than a meaningful gap in the paradigm. Datives often appear after prepositions. There are instances in which the internal dative case is assigned by a preposition and the external accusative case is assigned by a verbal predicate. In each of these instances, the relative pronoun surfaces in the internal dative case and not in the external accusative case (as in (10)). For the other way around holds the same: with an accusative internal case assigned by a verbal predicate and a dative external predicate assigned by a preposition, the relative pronoun surfaces in the dative and not in the accusative. Therefore, the system that I set up later in this dissertation is able to generate the dative as internal case and accusative as external case which are both assigned by verbal predicates.

[5]*Ana* 'on' takes dative complements when the PP is interpreted as locational. *Ana* 'on' takes accusative complements when the PP is interpreted as directional. *Ana þammei* 'on that' in (10) refers to a location.

(Gothic, Luke 5:25, adapted from Harbert 1978: 343)

Consider the example in (11), in which the internal accusative case competes against the external dative case. The internal case is accusative, as the predicate *insandjan* 'to send' takes accusative objects. The external case is dative, as the predicate *galaubjan* 'to believe' takes dative objects. The relative pronoun *þamm(a)* 'REL.SG.M.DAT' 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 internal case is accusative, the external case is dative and the relative pronoun appears in the accusative case are unattested.

(11) ei galaubjaiþ þamm **-ei** **insandida**
that believe.OPT.PRES.2PL$_{[DAT]}$ REL.SG.M.DAT -COMP send.PRET.3SG$_{[ACC]}$
jains
DEM.SG.M.NOM
'that you believe in him whom he sent' (Gothic, John 6:29)

The two examples in which the accusative and the dative compete are showed in Table 2.4. The light gray marking corresponds to (10), in which the internal dative wins the case competition over the external accusative, and the relative pronoun surfaces in the dative case. The dark gray marking corresponds to (11), in which the external dative wins the case competition over the internal accusative, and the relative pronoun surfaces in the dative case. The instances of *ACC that appear in the same cells indicate that there are no examples, in which the accusative and the dative compete and the relative pronoun appears in the accusative case.

Table 2.4: Gothic headless relatives (ACC — DAT)

	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC *NOM	DAT *NOM
[ACC]	*NOM ACC	ACC	DAT *ACC
[DAT]	*NOM DAT	*ACC (DAT)	DAT

Table 2.5 is a simplified version of Table 2.4. The data in the table can be divided into three sets: (1) a set of three unmarked cells in the top-left to bottom-right diagonal, (2) a set of three light gray marked cells in the bottom-left corner and (3) a set of three dark gray marked cells in the top-right corner. The unmarked three cells in the diagonal are situations in which the internal and the external case match. The three cells in the bottom-left corner, marked in light gray, are the situations in which the internal case surfaces when it wins the competition. In these situations, the relative pronoun appears in the internal case. They correspond to the examples (6), (8) and (10). The three cells in the top-right corner, marked in dark gray, are the situations in which the external case surfaces when it wins the competition. In these situations, the relative pronoun appears in the external case. They correspond to the examples in (7), (9) and (11).

Table 2.5: Summary of Gothic headless relatives

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	DAT
[DAT]	DAT	(DAT)	DAT

To sum up, case competition in headless relative is subject to the case scale, repeated from the introduction of this chapter in (12).

(12) NOM < ACC < DAT

If two cases compete, the dative wins over the accusative and the nominative, and the accusative wins over the 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 and Old High German and Grosu 2003; Kakarikos 2014 for Ancient Greek).[6]

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

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.

[6]Modern German differs from Gothic and the other languages in that it is subject to an additional constraint. That is, it does not allow the internal and the external case to win case competitions. Modern German only allows the internal case to do so. 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 II of this dissertation.

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. First I formulate the implicational hierarchy in terms of grammatical function (following Moravcsik 1978). Later I show that a reformulation in terms of case is actually more accurate (following Bobaljik 2006).

Moravcsik (1978) formulated the implicational hierarchy in terms of grammatical functions subject, direct object and indirect object.[7] 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.

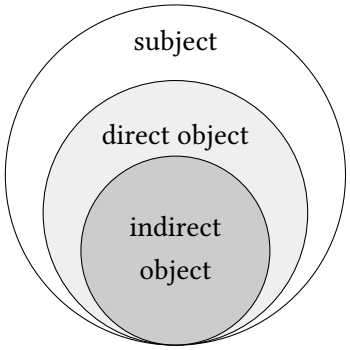


Figure 2.1: Agreement hierarchy

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

[7] 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.

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 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 (13). 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'.

(13) 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 (14). 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'.

(14) Du gib **-st** mir das Buch.
you.NOM give -PRES.2SG I.DAT the book.ACC
'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 (15). 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*.

(15) (Én) neked ad **-om**/ *-lak a könyv-et
I you.DAT 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 (16). 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'.

(16) Zu-k ni-ri liburu-a emon **d** -aus **-ta** **-zu**.
you-ERG I-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) schema gives the result as shown in Figure 2.2.

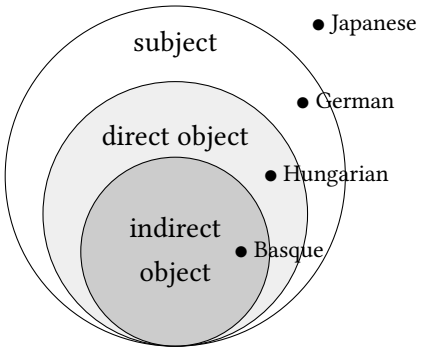


Figure 2.2: Agreement hierarchy with languages

Gilligan (1987) performed a typological study among 100 genetically and areally diverse languages, which confirms the picture. The results are shown in Table 2.6. 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 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 2.6: Typology for agreement hierarchy

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

So far I have discussed the implicational hierarchy in terms of grammatical function. In what follows, I discuss how it actually should be formalized in terms of the case scale that has also been observed for case competition in headless relatives.

Bobaljik (2006) argues that the implicational hierarchy is more accurate if it is stated in terms of case rather than grammatical function. In these situations, case seem to capture the facts for the implicational hierarchy, and grammatical function does not. It is often the case that subjects appear in the 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 gives examples of two types of situations in which this is the case: non-nominative subjects in Icelandic and ergative-absolutive languages. In these situations, case seem to capture the facts for the implicational hierarchy, and grammatical function does not. I go through both situations Bobaljik describes.

Icelandic is a language that has dative subjects. It is like German in that it only shows agreement with a single argument. If agreement takes place with the gram-

matical subject, it is expected that the dative subject agrees with the predicate. This is not what happens, as illustrated in (17). 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.

(17) *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 (18). 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.

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

The second type of evidence that Bobaljik gives comes from ergative-absolutive languages. Ergative-absolutive languages differ in their alignment from nominative-accusative languages. In nominative-accusative languages, the subject of an intransitive verb (S) has the same marking as the subject of a transitive verb (A), namely nominative. The object of a transitive verb (O) has its own marking, namely accusative. This is schematically shown in 2.3.

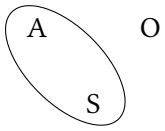


Figure 2.3: Nominative-accusative alignment

In ergative-absolutive languages, the alignment is different. The subject of an intransitive verb (S) has the same marking as the object of the transitive verb (O), namely absolutive. The subject of the transitive verb (A) has its own marking, namely ergative. This is schematically shown in 2.4.

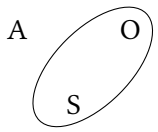


Figure 2.4: Ergative-absolutive alignment

Note here that nominative-accusative languages use the same case marking for the same grammatical function (nominative for subjects, accusative for objects), but ergative-absolutive languages do not (absolutive for objects in transitive clauses or subjects in intransitive clauses, ergative for subjects in transitive clauses).

Bobaljik (2006) describes how absolutives and ergatives behave with respect to whether they show agreement. There are languages that show agreement with both absolutives and ergatives. There are also languages that show only agreement with absolutives. Crucially, there is no language that shows only agreement with ergatives. Absolutives are a heterogenous set with respect to grammatical function, i.e. They are subjects of intransitive verbs and objects of transitive verbs. However, with respect to showing agreement absolutives behave the same, and this behavior is different from ergatives. This indicates that it is morphological case and not grammatical function that is the decisive factor.

Bobaljik (following Marantz 2000) combines nominative-accusative and ergative-absolutive languages in the following way: accusative and ergative are dependent cases, and nominative or absolutive are unmarked case. Reformulating

Figure 2.2 in terms of case instead of grammatical function gives the schema in Figure 2.5.

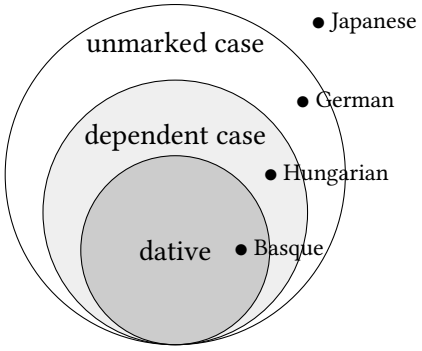


Figure 2.5: Agreement hierarchy (case)

This formulation in terms of case rather than grammatical function works as follows for the examples I gave earlier. First, Japanese is a language that does not show any agreement, as shown in (13). There is no agreement with the unmarked case (here the nominative), not with the dependent case (here the accusative) and not with the dative case. Second, German is a language that shows agreement only with the unmarked case, as shown in (14). The morpheme *-st* on the predicate agrees with the element in unmarked nominative case *du* 'you'. There is no agreement with the dependent accusative case or with the dative case. Third, Hungarian is a language that shows agreement with the unmarked and the dependent case, as shown in (15). The portmanteau morpheme *-om* on the predicates agrees with the element in unmarked nominative case *én* 'I' and the element in dependent accusative case *a könyvet* 'the book'. Last, Basque is a language that shows agreement with the unmarked, the dependent and the dative case, as shown in (16). The morpheme *-zu* on the auxiliary agrees with the element in dependent ergative case *zuk* 'you'. The morpheme *d-* on the auxiliary agrees with the element in unmarked absolutive case *liburua* 'the book'. The morpheme *-ta* on the auxiliary agrees with the element in the dative case *niri* 'me'.

In the languages I discuss in this dissertation, I focus on languages that have nominative as unmarked case and accusative as dependent case, so Figure 2.6 suf-

fices.

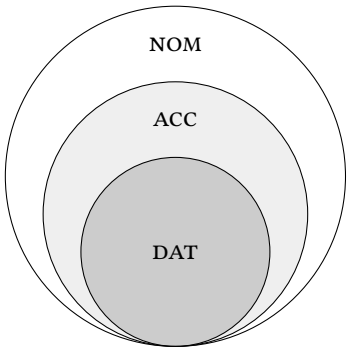


Figure 2.6: Agreement hierarchy (NOM/ACC/DAT)

In sum, this section has shown that 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 (19a). The relative clause derived from that is shown in (19b). 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.

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

In (19b), 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.[8] The impli-

[8]Keenan and Comrie (1977) also included obliques, possessives and objects of comparison on the

cational hierarchy is schematically represented in Figure 2.7. 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.

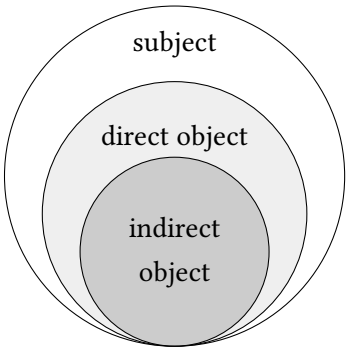


Figure 2.7: Relativization hierarchy

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 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. (20) 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'.

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

In (21), the subject from the declarative sentence, marked in bold, is relativized. The

lowest end of the hierarchy. I leave them out here, because they are not relevant for the discussion.

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'.

(21) **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 (20) cannot be relativized in the same way, as shown in (22). 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.

(22) *__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 object 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. (23) 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'.

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

The subject from the declarative in (23), sentence *die Frau* 'the woman', is relativized in (24). 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.

(24) **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 (23), *den Mann* 'the man', cannot be relativized like the subject, as shown in (25). 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.

(25) *__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. (26) 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.

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

(27) 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 (28). In (28a), 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 (28b) differs from (28a) 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.

(28) 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)

Later in this section I draw the parallel between subject and nominative, direct object and accusative and indirect object and dative (after Caha, 2009). As Malay does not have any overt morphological system, it does not hold that the subject corresponds to the nominative and the object to the accusative.

Finnish is another example of a language that allows subjects and direct objects to be relativized using a particular strategy, but not indirect objects. This strategy places the relative clause prenominally, does not use a relativization marker, and puts the predicate in the relative clause in the non-finite form (Keenan and Comrie, 1977).

(29) shows how examples of relativized subjects and direct objects. (29a) is an example of a subject relative: *poika* 'boy' has been relativized from the clause in which it was the subject of *tanssinut* 'danced'. The head of the relative clause is *poika*

'boy', marked in bold, is preceded by the relative clause *pöydällä tanssinut* 'who had danced on the table'. The predicate of the relative clause appears in the non-finite form: *tanssinut* 'having danced'. (29b) is an example of a subject relative: *poika* 'boy' has been relativized from the clause in which it was the subject of *näkemäni* 'saw'. The head of the relative clause is *poika* 'boy', marked in bold, is preceded by the relative clause *näkemäni* 'that I saw'. The predicate of the relative clause appears in the non-finite form: *näkemäni* 'having seen'.

(29) a. Pöydällä tanssinut **poika** oli sairas.
on-table having-danced boy was sick
'The boy who had danced on the table was sick.'

b. Näkemäni **poika** tanssi pöydällä.
I-having-seen boy danced on-table
'The boy that I saw danced on the table.'

(Finnish, Keenan and Comrie 1977: 71)

Basque is an example of a language that has a particular relativization strategy for subjects, direct objects and indirect objects. (30) 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'.

(30) 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*.[9] (31a) shows the three relativizations that are derived from (30). In (31a), the ergative subject *gizonak* 'the man' from (30) 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 (31b), the absolutive

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

direct object *liburua* 'the book' from (30) 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'.[10] The suffix *-n* is attached to the relative clause. In (31c), the dative indirect object *emakumeari* 'the woman' from (30) 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.

(31) 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'

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)

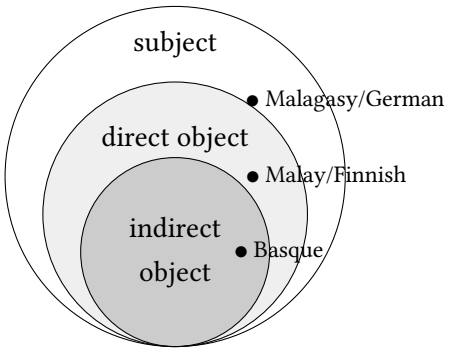


Figure 2.8: Relativization hierarchy with languages

Caha (2009) argues that the implicational hierarchy is more accurate if it is stated

[10]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.

in terms of case rather than grammatical function. The main argument comes from ergative-absolutive languages, which was also one of Bobaljik's (2006) argument with the implicational hierarchy for agreement.

According to Keenan and Comrie (1977), ergative-absolutive languages form a counterexample to their hierarchy. It turns out that in some languages ergative subjects cannot be relativized, while absolutive subjects and absolutive objects can. This indicates that absolutive subjects and objects form a natural class to the exclusion of ergative subjects. In other words, it is not the grammatical function that is decisive, but morphological case. Dyirbal is an example of a language in which absolutive subjects and objects can be relativized, but ergative subjects cannot (Dixon 1972: 100).

(32) shows an intransitive and transitive sentence in Dyirbal. In the intransitive sentence in (32a), the subject *balan ḍugumbil* 'the woman' is marked absolutive. In the transtive sentence in (32b), the subject *ŋaḍa* 'I' is marked ergative, and the object *balan ḍugumbil* 'the woman' is marked absolutive.

(32) a. balan ḍugumbil ɲina-ɲu
DET.ABS woman.ABS sit-PASS
'The woman is sitting down.'

b. ŋaḍa balan ḍugumbil buṛa-n
I.ERG DET.ABS woman.ABS see-PRES/PST
'I am watching the woman.' (Dyirbal, Dixon 1972: 100, my boldfacing)

A relative clause in Dyirbal follows its head, and marks the predicate of the relative clause with the relative suffix *-ŋu.*. In (33a), the absolutive subject *ḍugumbil* 'woman' from (32a) is relativized. The head *ḍugumbil* 'woman', marked in bold, precedes the relative clause *ɲina-ŋu* 'who is sitting down'. The predicate in the relative clause *ɲina* 'sit' is followed by the relative suffix *-ŋu.* In (33b), the absolutive object *ḍugumbil* 'woman' from (32b) is relativized. The head *ḍugumbil* 'woman', marked in bold, precedes the relative clause *ŋaḍa buṛa-ŋu* 'whom I am watching'. The predicate in the relative clause *buṛa* 'see' is followed by the relative suffix *-ŋu.*

(33) a. ŋaḍa balan **ḍugumbil** ɲina-ŋu buṛa-n
I.ERG DET.ABS woman.ABS sit-REL see-PRESPST
'I am watching the woman who is sitting down.'
(Dyirbal, Dixon 1972: 100, my boldfacing)

b. balan **ḍugumbil** ŋaḍa buṛa-ŋu ɲina-ŋu
DET.ABS woman.ABS I see-REL sit-PASS
'The woman whom I am watching is sitting down.'
(Dyirbal, Dixon 1972: 100, my boldfacing)

Ergatives (for instance the ergative subject *ŋaḍa* 'I' in (32b)) cannot be directly relativized. They have to be promoted to absolutives first, creating a passive-like structure. In other words, only relativization of absolutives is possible, ergatives cannot be relativized.

In conclusion, just like the agreement hierarchy, the relativization hierarchy is formalized best in terms of morphological case (cf. Caha, 2009). Reformulating Figure 2.2 in terms of case instead of grammatical function gives the schema in Figure 2.6.

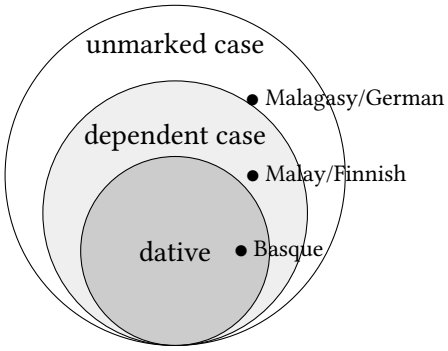


Figure 2.9: Relativization hierarchy (case)

This formulation in terms of case rather than grammatical function works as follows for the examples I gave earlier.

First, German is a language that has a particular relativization strategy for the unmarked case, as shown in (24). The unmarked nominative case can be relativized with a reduced relative clause, but the dependent accusative case and the dative case

cannot. Second, Finnish is a language that has a particular relativization strategy for unmarked and dependent case, as shown in (29). The unmarked nominative case and the dependent accusative case can be relativized with a reduced relative clause, but the dative case cannot. Last, Basque is a language that has a particular relativization strategy for unmarked, dependent and dative case, as shown in (31). The unmarked ergative, dependent absolutive and dative case can be relativized by extraposing the head, and marking it with the invariable marker *-n*.

In the languages I discuss in this dissertation, I focus on languages that have nominative as unmarked case and accusative as dependent case, so Figure 2.10 suffices.

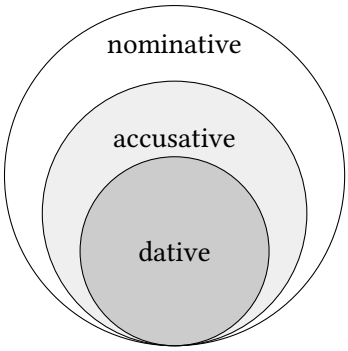


Figure 2.10: Relativization hierarchy (NOM/ACC/DAT)

In sum, this section has shown that relativization follows the same implicational hierarchy as agreement and as the case scale in headless relatives: NOM < ACC < DAT.

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 appears in case competition in headless relatives. Second, the case scale forms the basis for the implicational hierarchy observed in agreement across languages. Third, the same implicational holds for relativization strategies cross-linguistically.

In this section, I show that this same case scale can be observed in morphology. First, syncretism only targets continuous regions on the case scale. Second, several

languages show morphological 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, what does not exist is an ABA pattern, in which a form B intervenes between the two identically formed As (Bobaljik, 2012).

Table 2.7 shows examples for each of these possible patterns. I give an example of 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). I give an example of a complete syncretism for nominative, accusative and dative from Dutch. The second person plural pronoun is *jullie* 'you.PL' is syncretic between all three cases. I give an example of 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 of 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'. 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 2.7: Syncretism patterns

pattern			NOM	ACC	DAT	translation	language
A	B	C	tú	teg	tær	2SG	Faroese
A	A	A	jullie	jullie	jullie	2PL	Dutch
A	B	B	við	okkur	okkur	1PL	Icelandic
A	A	B	sie	sie	ihr	3SG.F	German
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 Morphological case containment

This section shows a second way in which NOM < ACC < DAT is reflected in morphology: morphological case 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 morphological case containment in some of its pronouns (Nikolaeva 1999: 16 after Smith et al. 2019). Three examples are given in Table 2.8.

The nominative form for the first person singular is *ma* 'I'. 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 2.8: Morphological case containment in Khanty

	first person$_{SG}$	third person$_{SG}$	first person$_{PL}$
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 (34). 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.

(34) 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 us-

ing the same strategy. If an accusative can be relativized with a particular strategy, so can a nominative with this strategy.

The case scale can also be observed 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 that the dative formally contains accusative, and that 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 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. The syntax fact presented in this chapter can be derived from the organization of these features.

Chapter 3

Case decomposition

At the beginning of the previous chapter I showed that the case scale NOM < ACC < DAT appears in headless relatives. 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. Pittner (1995: 201:fn.4) makes this explicit: "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."

What I showed as well in the previous chapter is that the case scale NOM < ACC < DAT is a wide-spread phenomenon: it recurs in several phenomena across different languages. The scale can be observed in at least two more syntactic phenomena: agreement and relativization.[1] The case scale also appears within morphology in syncretism patterns and morphological case containment. Pittner (1995: 201:fn.4) makes this link to morphology as well: "Furthermore, the Case hierarchies receive some independent support by morphology as shown by the various inflectional paradigms."

I am not after a theory in which the case hierarchy is something construction specific, and syntax and morphology both have their own case hierarchy. I argue that there is a single trigger that is responsible for the case scales in different subparts of language (cf. Caha, 2019, on numeral constructions). Specifically, I show

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

that the observed case scale naturally follows on the assumption that the case hierarchy is deeply anchored in syntax. The case scales in morphology and syntax are merely reflexes of how case is organized in language.[2]

This chapter is structured as follows. First, I introduce a specific case decomposition (Caha, 2009). In the two following sections, I show how this case decomposition is able to derive the syncretism and morphological case containment facts from the previous chapter. I make this concrete in the framework Nanosyntax (Starke, 2009). Finally, I show how the case decomposition translates to the case scale observed in headless relatives.

3.1 The basic idea

Caha (2009, 2013) (followed by cf. Starke 2009; Bobaljik 2012; McFadden 2018; Van Baal and Don 2018; Smith et al. 2019) has extensively argued that case should be decomposed into privative features. Specifically, the decomposition is cumulative: each case has a different number of case features, and the number grows one by one. This is illustrated in Table 3.1. Accusative has all the features that nominative has (here F1) plus one extra (here F2). Dative has all the features accusative has (F1 and F2) plus one extra (F3).

Table 3.1: Case decomposed

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

The case scale, repeated in (1), actually indicates containment. Nominative corresponds to a set of features (namely F1) that is contained in the set of features of accusative (which is namely F1 and F2). Similarly, nominative corresponds to a set of features that is contained in the set of features of dative (which is namely F1,

[2]Himmelreich (2017) works this intuition out in a different way.

F2 and F3). Lastly, accusative corresponds to a set of features (F1 and F2) that is contained in the set of features of dative (F1, F2 and F3).

(1) NOM < ACC < DAT

The decomposition in Table 3.1 forms the basis to derive the case scale effects observed in the previous chapter. The next sections show how morphological case containment and syncretism effects follow naturally. After that, I show how the decomposition also derives the case competition facts in headless relatives.

3.2 Deriving syncretism

Case syncretism follows the ordering of the case scale NOM < ACC < DAT. Along this scale, only contiguous regions in the sequence are syncretic. In this section I show how case syncretism patterns can be derived from the case decomposition in Table 3.1. In Table 3.2 I repeat from Table 2.7 examples that shows the possible and impossible syncretism patterns.

Table 3.2: Syncretism patterns (repeated)

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

Table 3.2 shows that if one orders cases in the linear sequence NOM — ACC — DAT, only contiguous regions in the sequence turn out to be syncretic. First, all three cases can be non-syncretic, as in Faroese. Second, all three cases can be syncretic, as in Dutch. Third, the accusative and the dative can be syncretic and the nominative not, as in Icelandic. Fourth, nominative and accusative can be syncretic and the dative not, as in German. The pattern that is not attested crosslinguistically is the

one that targets non-contiguous regions in the table, the ABA pattern (Baerman, Brown, and Corbett, 2005; Caha, 2009; Zompì, 2017).

The syncretism facts follow in a system in which the case is decomposed as in Table 3.1 and in which lexicalization relies on containment. The latter means that a phonological form is not only inserted when the lexical specification is identical to the syntax, but also when the syntactic features are a subset of the lexical specification. The intuition is the following. Syncretic forms are realized by a single 'lexical entry' from the 'lexicon'.[3] A lexical entry can be applied if it contains all features, as long as there is no more specific one. This system can generate the patterns ABC, AAA, ABB and AAB, but not ABA.

Before I show how the four attest patterns can be derived (and the one unattested not), I need to make some theoretical assumptions explicit about Nanosyntax, the framework in which this dissertation is worked out. First, I show how the Nanosyntactic system is set up in such a way that morphological patterns (like syncretism, but also morphological containment) can inform us about the way syntax is structured. Therefore, I briefly discuss the general architecture of Nanosyntax, its postsyntactic lexicon, and the content and shape of lexical entries. Lastly, I discuss how multiple features (like F1, F2 and F3 from Table 3.1) can be spelled out by a single phonological element, i.e. phrasal spellout.

In Nanosyntax, syntax starts with atomic features, and it builds complex syntactic trees. Specifically, there are no 'feature bundles' (from a pre-syntactic lexicon) that enter the syntax. The only way complex feature structures come to exist is a a result of merge. After syntax (actually, each instance of merge), the syntactic structure is matched against the lexicon for pronunciation. The lexicon 'translates' between lexical trees (i.e. syntactic representations) on the one hand and phonology (PF) and concepts (CF) on the other hand.[4]

In Nanosyntax, the lexicon contains lexical entries, which are links between lexical trees, phonological representations and conceptual representations (Starke, 2014).[5] I leave the conceptual representation out of discussion for now, as it is

[3] I return to the terms lexical entry and lexicon shortly.

[4] Throughout the dissertation I call the syntactic representations in the lexicon 'lexical trees' in order to distinguish them from syntactic structures in the syntax.

[5] The lexical tree does not have to correspond to both a phonological and a conceptual represen-

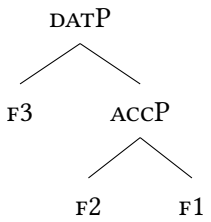
not relevant for the discussion here. The fact that only syntax can create complex feature structures also has a consequence for lexical entires in the lexicon. Syntactic structures are constrained by certain principles, such that only well-formed syntactic structures exist. Since lexical entries in the lexicon link lexical trees to phonological and conceptual representation, these lexical trees are constrained by the same principles as syntactic structures are. As a result, the lexicon only contains well-formed lexical trees. The lexicon does not contain unstructured 'feature bundles', because they could never be created by syntax.

Following this logic, a feature bundle as in (2) cannot exist. It cannot have entered syntax, because syntax starts with atomic features. It can also not be created by syntax, because complex structures can only be created with merge.

(2) [F1, F2, F3]

Instead, a possible lexical tree looks as in (3). The features are merged one by one in a binary structure.

(3)



This structure leads to the concept of phrasal spellout: not terminals but multiple syntactic heads (phrases) are realized with a single piece of phonology (i.e. a single morpheme). Applying this to (3), not the terminals F1, F2 and F3 receive a realization, but ACCP and DATP are spelled out. A necessary requirement is that these multiple syntactic heads form a constituent. That means that DATP cannot be spelled out without ACCP.

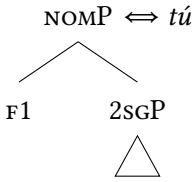
Let me illustrate all of the above with the Faroese pronouns from Table 3.2. I simplify the situation in two respects. First, I do not show the internal complexity

tation. Lexical trees that only correspond to a conceptual representations and not to phonological representations are (phrasal or clausal) idioms. Lexical trees that only correspond to phonological representations but not to conceptual representations are for instance irregular plurals.

of the pronouns, including person and number features. Instead, I give a triangle, indicating that this is a complex syntactic structure. I refer to is as the person-number phrase it refers to, so e.g. 2SGP. Second, in this simplified representation I consider the Faroese pronouns to be monomorphemic. I ignore the fact that all three pronouns have the stem *t* with a suffix following it.

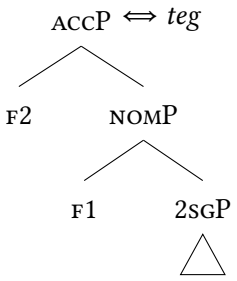
The lexical entry for *tú* is given in (4). The lexical tree consists of the second person singular pronoun (the 2SGP), and F1, making it a NOMP. The phonological representation that is linked to the lexical tree is *tú*.[6]

(4)



The lexical entry for *teg* is given in (5). The lexical tree consists of all the features of the lexical tree in (4), plus F2, making it an ACCP. The linked phonological representation is *teg*.

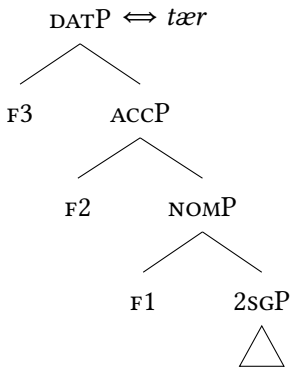
(5)



The lexical entry for *tær* is given in (6). The lexical tree consists of all the features of the lexical tree in (5), plus F3, making it an DATP. The linked phonological representation is *tær*.

[6]Throughout the dissertation, I use lexical trees and phonological forms connected by a double arrow (⟺) to refer to a lexical entry.

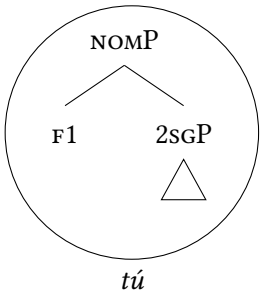
(6)



The lexical trees and their phonological counterparts I gave in (4) to (6) are lexical entries. These lexical entries are used to spell out syntactic structures. I give examples of syntactic structures in (7) to (9).

The lexical tree in (4) is identical to the syntactic structure in (7). Therefore, this syntactic structure is spelled out as *tú*.[7]

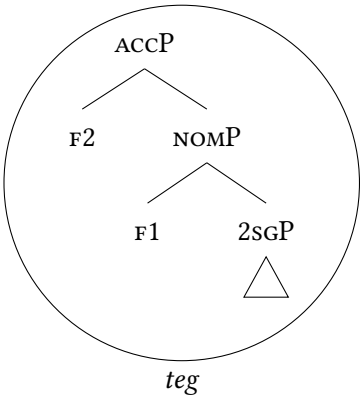
(7)



The lexical tree in (5) is identical to the syntactic structure in (8), and it is spelled out as *teg*.

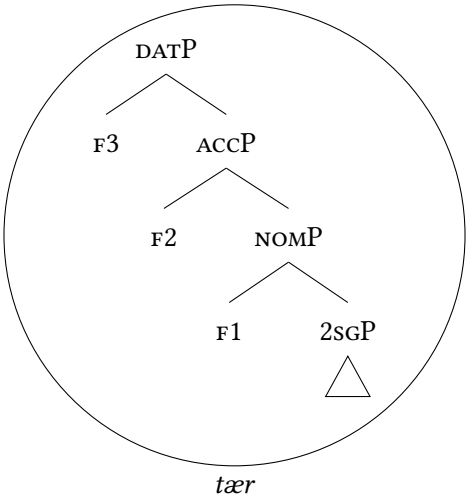
[7]Throughout this dissertation I circle the part of the structure that corresponds to a particular lexical entry, and I place the corresponding phonology under it.

(8)



The lexical tree in (6) is identical to the syntactic structure in (9), and it is spelled out as *tær*.

(9)

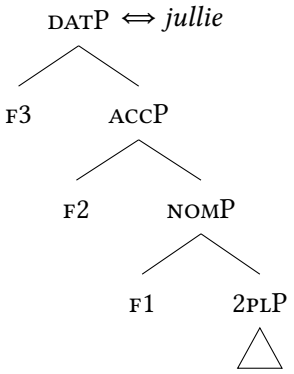


In the Faroese examples above, the syntactic structures are all identical to the lexical trees. However, Nanosyntax assumes that to be a successful match, identity is not a necessary requirement. Instead, matching relies on a containment relation. A lexical entry applies when it contains all features. This is formalized as in (10).

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

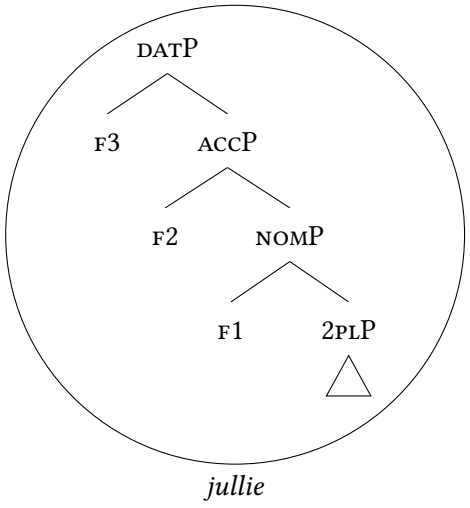
Let me illustrate this with the Dutch second person plural pronoun from Table 3.2. This pronoun is syncretic between between the nominative, accusative and dative. The lexicon only contains a single lexical entry, namely (11). The lexical tree consists of the complex lexical tree that corresponds to the second person plural pronoun (the 2PLP), and F1, F2 and F3 making it a DATP. The phonological representation that is linked to the lexical tree is *jullie*. The nominative, the accusative and the dative can all be spelled out with this single lexical entry using the Superset Principle in (10).

(11)



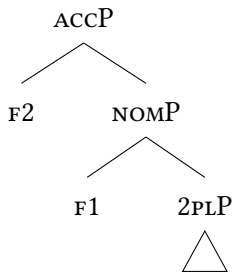
The syntactic structure of the dative, given in (12), is the least exciting of the three. It is identical to the lexical tree (11), and therefore, spelled out as *jullie*.

(12)



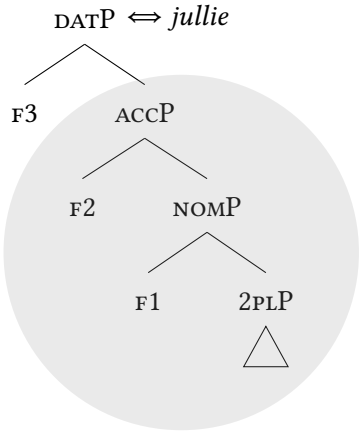
The syntactic structure of the accusative is given in (13).

(13)



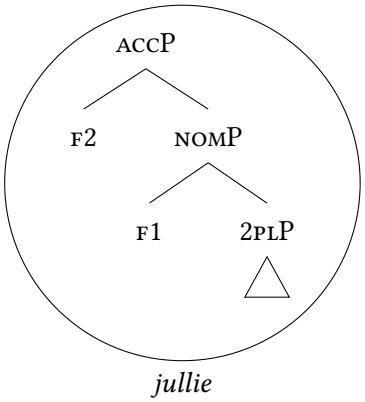
The lexical entry in (11) is not identical to this syntactic structure. However, the lexical tree contains the syntactic structure of the accusative. I repeat the lexical entry for *jullie* in (14), marking the subpart of the tree that matches the syntactic structure in gray.

(14)



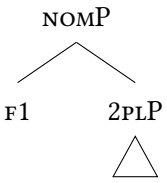
As a result, the accusative is spelled out as *jullie*, shown in (15).

(15)



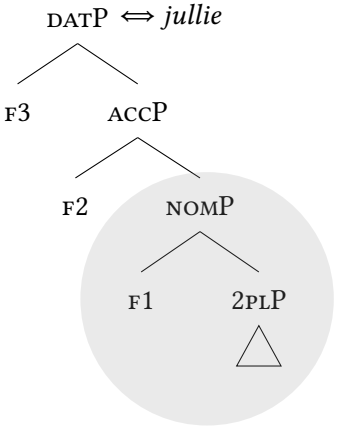
The same holds for the nominative. The syntactic structure is given in (16).

(16)



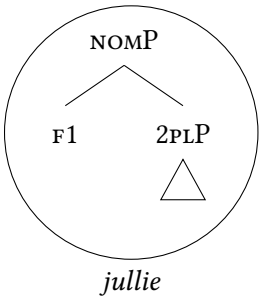
The lexical tree in (11) is not identical to this syntactic structure. However, again, the lexical tree contains the syntactic structure of the nominative. I repeat the lexical entry for *jullie* in (17), marking the subpart of the tree that matches the syntactic structure in gray.

(17)



As a result, the nominative is spelled out as *jullie*, as shown in (18).

(18)



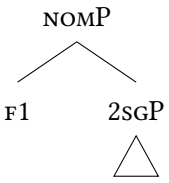
A question arises at this point. Why are the accusative and nominative in Faroese not spelled out by the lexical entry for the dative (and why is the nominative not spelled out by the lexical entry for the accusative)? These syntactic structures are namely contained in the lexical tree for the dative (and the accusative). The reason for that comes from how competition between lexical entries is regulated in Nanosyntax. When two lexical entries compete, the best fit wins. The best fit is the lexical tree with the least features that are not used. This is formalized as in (19).

(19) **The Elsewhere Condition** (Kiparsky 1973, formulated as in Caha 2020): 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.

I show how the Superset Principle and the Elsewhere Condition interact in a competition with the Faroese lexical entries. I only discuss the nominative *tú* and the accusative *teg*, because for the dative *tær* there is only a single candidate that contains all features: the lexical entry *tær*.

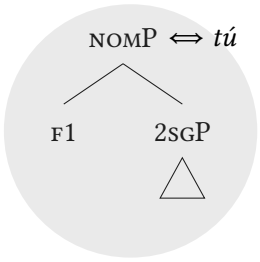
Consider first again the syntactic structure for the nominative in (20), repeated from (7).

(20)

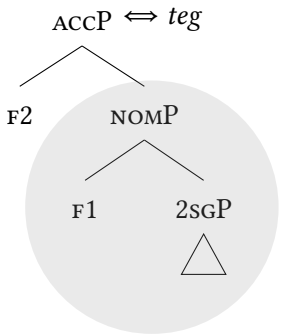


The three lexical entries for *tú* in (4), *teg* in (5) and *tær* in (6) are candidates for this syntactic structure. I repeat the lexical entries for *tú*, *teg* and *tær* in (21), marking the subpart of the tree that matches the syntactic structure in gray.

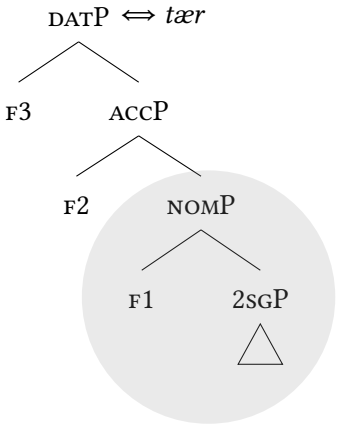
(21) a.



b.

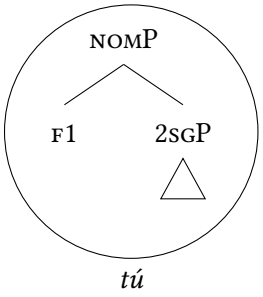


c.



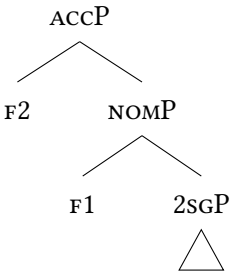
The first, (21a), has no unused features. The second, (21b), has one unused feature: F2. The third, (21c), has two unused features: F2 and F3. Because (21a) has the least amount of unused features, it wins the competition, and the syntactic structure is spelled out as *tú*. This is shown in (22).

(22)



Consider the syntactic structure for the accusative in (23), repeated from (8).

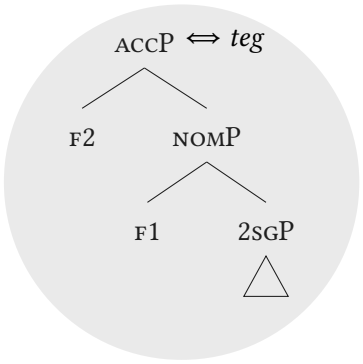
(23)



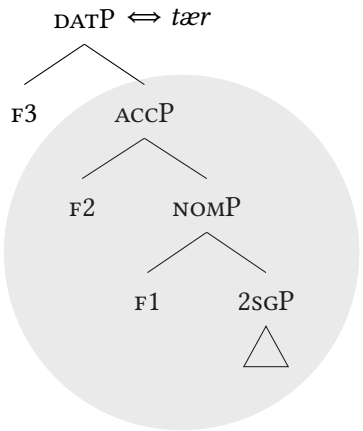
The two lexical entries for *teg* in (5) and *tær* in (6) are candidates for this syntactic

structure. The lexical entry for *tú* in (4) is not a candidate here, because it does not contain the complete syntactic structure (i.e. it lacks F2). I repeat the lexical entries for *teg* and *tær* in (17), marking the subpart of the tree that matches the syntactic structure in gray.

(24) a.



b.



The former, (24a), has no unused features. The latter, (24b), has one unused feature: F2. Because (24a) has fewer unused features than (24b), it wins the competition, and the syntactic structure is spelled out as *teg*. This is shown in (25).

(25)

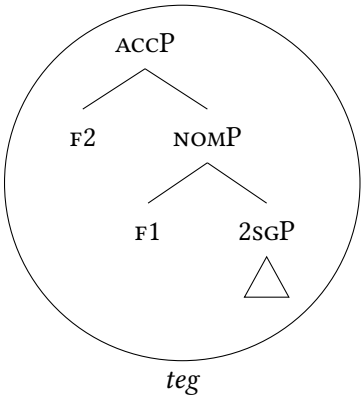
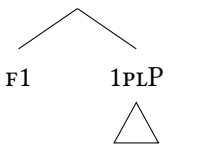
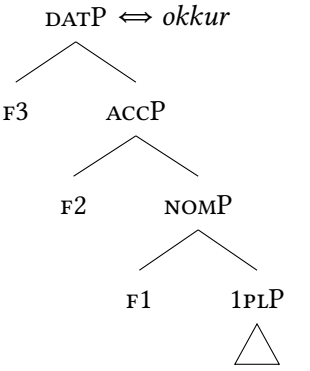


Table 3.2 contains two more attested patterns: the ABB in Icelandic and the AAB in German. In the remainder of this section I show how these two patterns are derived, and that the unattested one cannot be derived. I also show how the system is unable to derive an ABA pattern, which is crosslinguistically unattested (Baerman, Brown, and Corbett, 2005; Caha, 2009; Zompì, 2017).

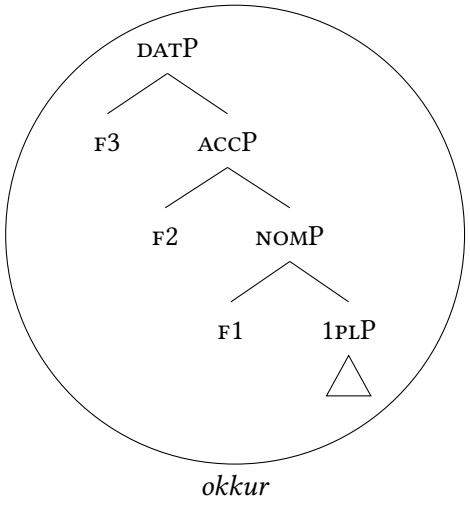
Consider the Icelandic pattern. For the first person plural, Icelandic uses *við* as nominative and *okkur* as accusative and dative. Two lexical entries are needed for that. The first one in (26a) contains pronominal features and f1, and corresponds to the phonology *við*. The second one is given in (26b). It contains in addition to (26a) also the feature f2 and f3. The phonological representation that is linked to it is *okkur*.

(26) a.



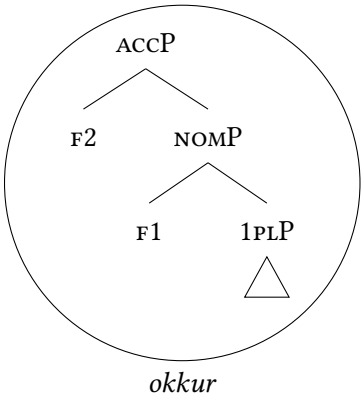
b. 

The syntactic structure for the dative is given in (27). It is contained in the lexical tree in (26b), and therefore, spelled out as *okkur*. The lexical entry in (26a) is not considered, because it does not contain F2 and F3.

(27) 

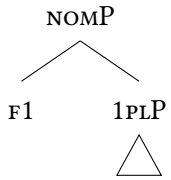
The syntactic structure for the accusative is given in (28). It is contained in the lexical tree in (26b), and therefore, spelled out as *okkur*. The lexical entry in (26a) is not considered, because it does not contain F2.

(28)



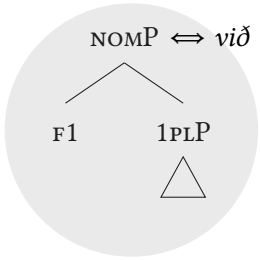
The syntactic structure for the nominative is given in (29).

(29)

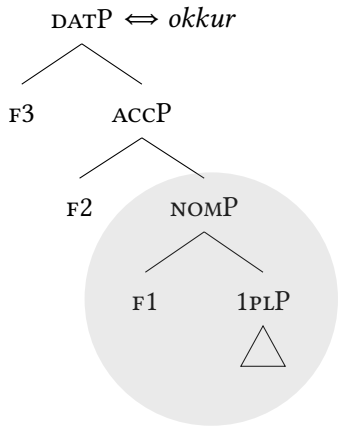


It is contained in the lexical tree for *við* in (26a) and in the one for *okkur* in (26b). I repeat the lexical entries for *við* and *okkur* in (30), marking the subparts of the trees that match the syntactic structure in gray.

(30) a.

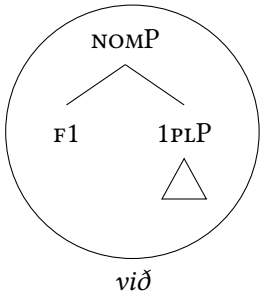


b.



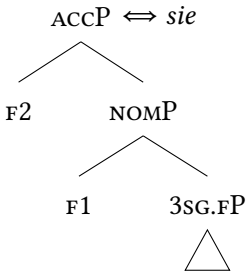
The former, (30a), has no unused features. The latter, (30b), has two unused features: F2 and F3. Because (30a) has fewer unused features, it wins the competition, and the syntactic structure is spelled out as *við*. This is shown in (31).

(31)

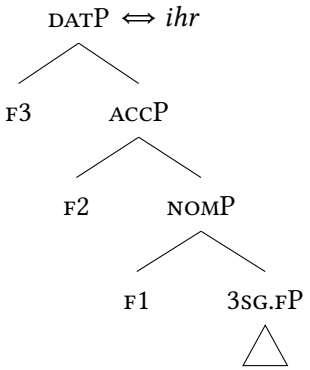


For the third person singular feminine, German uses *sie* as nominative and accusative, and *ihr* as dative. Two lexical entries are needed for that. The first one in (32a) contains pronominal features, F1 and F2. It corresponds to the phonology *sie*. The second one is given in (32b). It contains in addition to *sie* in (32a) also the feature F3. It corresponds to the phonology *ihr*.

(32) a.

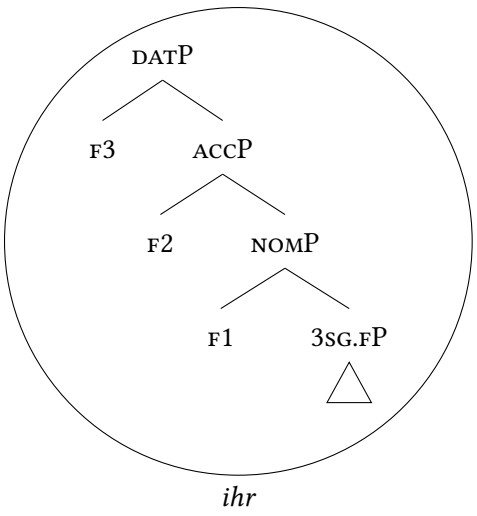


b.



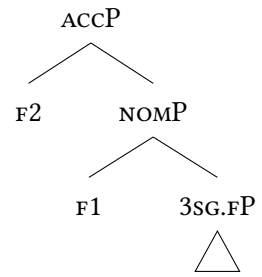
The syntactic structure for the dative is given in (33). It is contained in the lexical tree in (32b), and therefore, spelled out as *ihr*. The lexical entry in (32a) is not considered, because it does not contain F3.

(33)



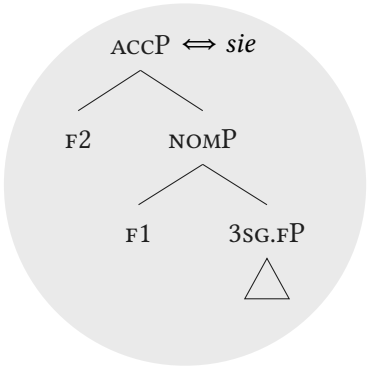
The syntactic structure for the accusative is given in (34).

(34)

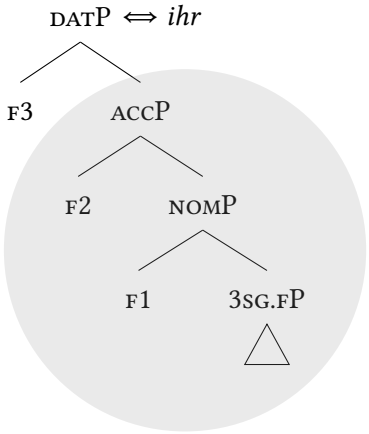


It is contained in the lexical tree for *sie* in (32a) and in the one for *ihr* in (32b). I repeat the lexical entries for *sie* and *ihr* in (35), marking the subparts of the trees that match the syntactic structure in gray.

(35) a.

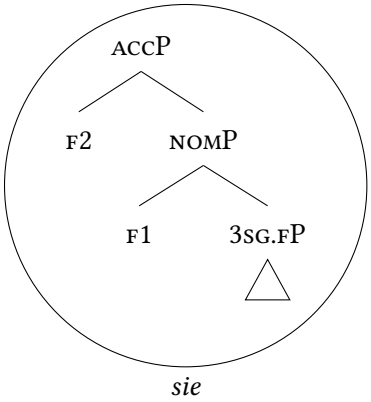


b.



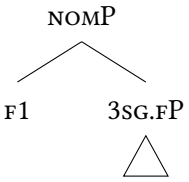
The former, (35a), has one no unused features. The latter, (35b), has one unused feature: F3. Because (35a) has fewer unused features, it wins the competition, and the syntactic structure is spelled out as *sie*. This is shown in (36)

(36)



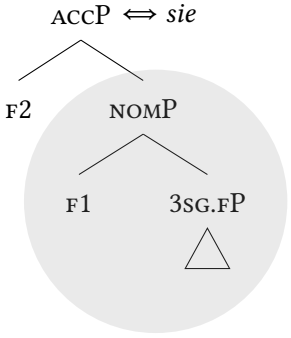
The syntactic structure for the nominative is given in (37).

(37)

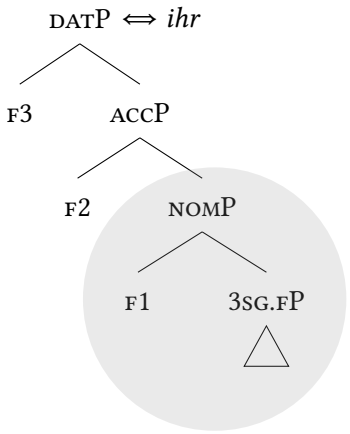


It is contained in the lexical tree for *sie* in (32a) and in the one *ihr* in (32b). I repeat the lexical entries for *sie* and *ihr* in (38), marking the subparts of the trees that match the syntactic structure in gray.

(38) a.

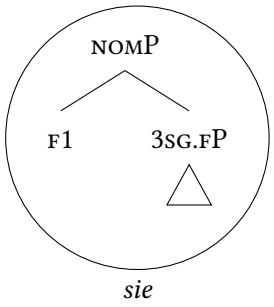


b.



The former, (38a), has one unused feature: F2. The latter, (38b), has two unused features: F2 and F3. Because (38a) has fewer unused features, it wins the competition, and the syntactic structure is spelled out as *sie*. This is shown in (39).

(39)



This last example also illustrates that the laid out system is unable to derive an ABA pattern. The unability of the system to derive such a pattern is a welcome one, since the pattern is unattested cross-linguistically. In an ABA pattern, the nominative and the dative are syncretic, to the exclusion of the accusative. Such a language would be like German but then the nominative would be *ihr* instead of *sie*.

This result could never be derived with the lexical entries given in (32a) and (32b). *Ihr* is inserted for the dative and the cases contained in it (so accusative and nominative), unless a more specific lexical entry is found. *Sie* is the more specific lexical entry that is found from the accusative on. From the accusative on (so for the accusative and nominative), *sie* will be inserted until a more specific entry is found. If no entry is specified for nominative, *sie* will surface. *Ihr* will not resurface,

because the lexical entry for *sie* is and will remain to be more specific.

In sum, the cumulative case decomposition from Table 3.1 can derive the observed syncretism patterns.

3.3 Deriving morphological case containment

Some languages morphologically reflect the case scale NOM < ACC < DAT. Khanty is an example of such a language. The phonological form of the accusative literally contains the phonological form of the nominative, and the form of the dative contains the form of the accusative. In this section I show how morphological case containment can be derived from the case decomposition in Table 3.1. I repeat an example from Khanty that shows morphological case containment in Table 3.3 (Nikolaeva 1999: 16).

Table 3.3: Morphological case containment of 3SG in Khanty

	3SG
NOM	luw
ACC	luw-**e:l**
DAT	luw-**e:l**-**na**

The intuition is the following. The morphological form of the pronouns mirrors the cumulative feature decomposition given in Table 3.1. That is, the accusative has the morphology that the nominative has (*luw*) plus something extra (*e:l*). Similarly, the accusative also has the features that the nominative has (F1) plus something extra (F2). The dative has the morphology that the accusative has (*luw-e:l*) plus something extra (*na*). Again, similarly, the dative has the features that the accusative has (F1, F2) plus something extra (F3).

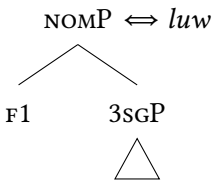
Before I show how languages with morphological case containment can be derived, I need to discuss how variation between languages is modeled in Nanosyntax. Crosslinguistic variation is namely explained in terms of differences in the lexicon.

In other words, the syntactic structure is identical across languages, but the lexical entries package features together differently.

Let me discuss the differences between synthetic and agglutinative morphology to make this more concrete. Take the accusative, which contains F1 and F2 in all languages. The languages discussed in the previous section, Section 3.2, are all synthetic languages. F2 can only be spelled out in a single lexical entry together with F1. The result is that the examples are syncretic (i.e. formally identical) or suppletive (i.e. formally unrelated). The language I discuss in this section is agglutinative. F2 is not spelled out in the same lexical entry with F1. Instead, the F2 is spelled out by its own lexical entry. The result is that the accusative formally contains the nominative.

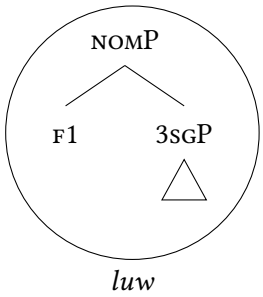
Let me illustrate this by deriving the 3SG paradigm in Khanty. First, I give the lexical entry for the nominative third person singular. It contains pronominal features and the feature F1. The phonological form associated with the structure is *luw*. The lexical entry is given in (40).

(40)



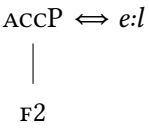
The syntactic structure in for the nominative is given in (41). It is contained in the lexical tree in (41), and the nominative is spelled out as *luw*.

(41)



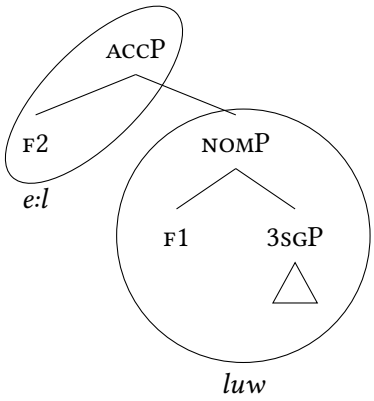
As shown in Table 3.3, the morphological form of the accusative contains the mor-

phological form of the nominative (*luw*) plus an extra morpheme (*e:l*). As shown in Table 3.1, the syntactic features of the accusative contain the syntactic features of the nominative (F1) plus an extra feature (F2). Accordingly, I give the lexical entry for the accusative marker *e:l* in (42).[8]

(42)


Luw-e:l consists of two morphemes that both correspond to their own piece of syntactic structure: *luw* and *e:l*. But how do these two morphemes combine? This issue brings me to another detour into the Nanosyntactic theory, which is about spellout driven movement.

As discussed in the previous section, spellout in Nanosyntax only targets constituents. That means that it is impossible to let ACCP spell out as *e:l* while it contains NOMP.[9]

(43)


The lexical entry in (42) can only match the syntactic structure if NOMP moves away, leaving the ACCP containing F2 behind. In other words, the syntactic structure needs to be modified in such a way that the complement of F2 is not in the way anymore.

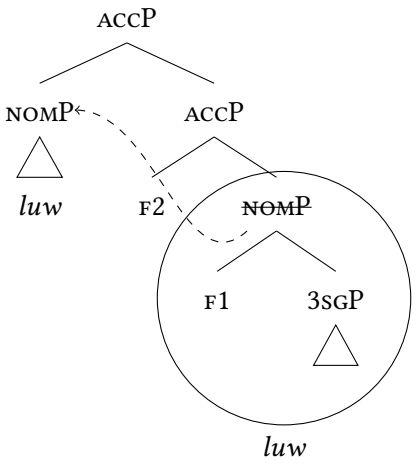
[8]Note that it is crucial here to have a theory in which the features that form an accusative contain the features that form a nominative. If not, it would be a surprise that the nominative form is contained in the accusative form. The same holds for the accusative and dative.

[9]Notice that this also gives the incorrect order of the morphemes: *e:l-luw* instead of *luw-e:l*.

Exactly this movement is one of the two so-called 'evacuation movements' that is part of the spellout procedure in Nanosyntax.[10] I showed in Section 3.2 that lexical entries are matched using the Superset Principle and the Elsewhere Condition. If there is no match in the lexicon for a particular syntactic structure, two types of (evacuation) movement can take place, in a fixed order.[11] The movement types change the syntactic structure in such a way that they generate new constituents that are possible matches for spellout.[12] For the discussion in this section, only the second type of movement is relevant: complement movement. In this type of movement, the complement of a particular feature moves to the specifier of that same feature.

This is exactly the type of movement I described as necessary for the Khanty pronoun. The movement is displayed in (44). The complement of F2, the NOMP, moves to the specifier of ACCP. [13]

(44)



[10] In Chapter 5 I introduce the spellout procedure in more detail.

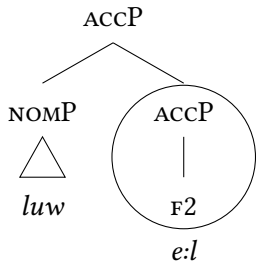
[11] The two types of movement are cyclic movement and snowball movement, also used to derive the possible orders in DEM > NUM > ADJ > N (Cinque, 2005).

[12] This type of movement is different from syntactic movement. It is driven by spellout, it does not have any interpretational effects, and it does not leave any traces (Starke, 2018). In Chapter 5 I return to 'regular' syntactic movement in Nanosyntax.

[13] In its landing position the internal structure of the NOMP is no longer shown (to save some space), and its phonological form is placed under the triangle. The strikethrough of the lower NOMP indicates that the complement of F2 disappears.

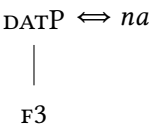
The result of the movement is given in (45). The lexical tree in (42) matches the syntactic structure, and ACCP is spelled out as *e:l*.

(45)



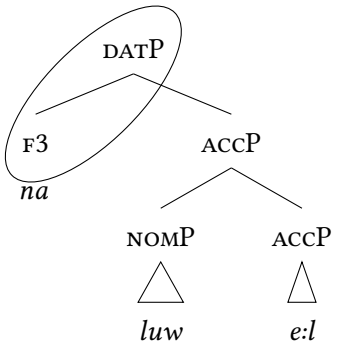
Just as Khanty has an additional morpheme that shows up in the accusative, it also has a morpheme that shows up in the dative. Similarly, just as the accusative has one more feature than the nominative (F1, F2 vs. F1), the dative has one more feature than the accusative (F1, F2, F3 vs. F1, F2). This leads me to pose the lexical entry in (46).

(46)



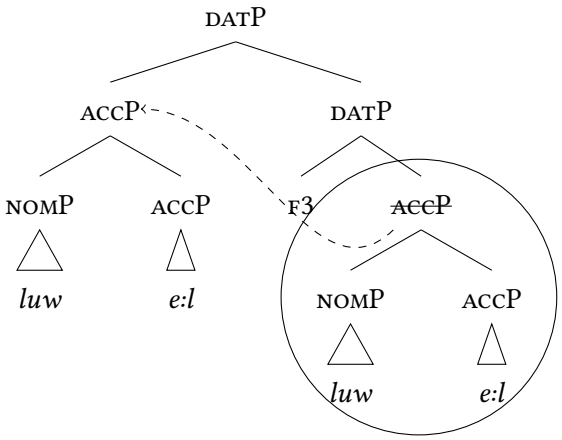
Again, because spellout only targets constituents, F3 cannot be spelled out right after it has been merged, as shown in (47).

(47)



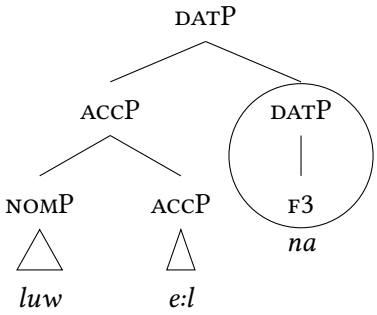
The same complement movement as before has to take place, which is shown in (48). The complement of F3, the ACCP, moves to the specifier of DATP.

(48)



The result of the movement is given in (49). The lexical tree in (46) matches the syntactic structure, and DATP is spelled out as *na*.

(49)



In sum, the cumulative case decomposition from Table 3.1 can derive the morphological case containment facts.

3.4 The intuition for headless relatives

In headless relatives, the internal case and the external case compete to surface on the relative pronoun. The two competing cases adhere to the case scale NOM < ACC < DAT, in which cases more to the right always win over cases more to the left. In this section I show how case competition in headless relatives can be derived from the case decomposition in Table 3.1.

I repeat the summary of the data pattern for Gothic in Table 3.4. I gave the cells

different shadings depending on which cases compete. The dark gray cells are the ones in which dative and the accusative compete, and the dative wins. The light gray cells are the ones in which the dative and the nominative compete, and the dative again wins. The uncolored cells are the ones in which the accusative and the nominative compete, and the accusative wins.

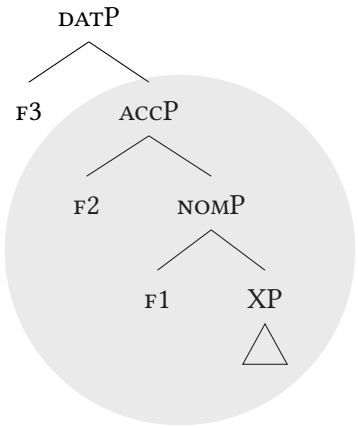
Table 3.4: Summary of Gothic headless relative (repeated)

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]		ACC	DAT
[ACC]	ACC		DAT
[DAT]	DAT	DAT	

The intuition is the following. The headless relatives reflect the cumulative feature decomposition given in Table 3.1. A case wins the competition if it contains all features the other case has. The dative contains all features that the accusative has, so the dative surfaces. Similarly, the dative contains all features the nominative has, and again the dative surfaces. The same holds for the last pair: the accusative contains all features the nominative has, so the accusative surfaces. I illustrate this per case pair.

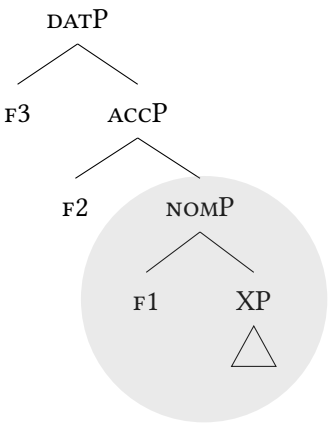
I start with the competition between dative and accusative, in which dative wins. The corresponding cells are marked dark gray in Table 3.4. In (50) I show the syntactic structure of a dative relative pronoun. For now I let syntactic structure that has to do with being a relative pronoun correspond to a complex XP. I elaborate on the exact content of XP in Chapter 5. Following that, a dative relative pronoun contains the XP, F1, F2 and F3. Contained in this structure is an accusative relative pronoun, marked in gray. This consists of the XP, F1 and F2. The bigger structure wins against the smaller structure it contains: the dative wins over the accusative.

(50)



Next is the competition between dative and nominative, in which dative wins. The corresponding cells are marked light gray in Table 3.4. In (51) I show the syntactic structure of a dative relative pronoun. It contains the XP, F1, F2 and F3. Contained in this structure is a nominative relative pronoun, marked in gray. This consists of the XP and F1. The bigger structure wins against the smaller structure it contains: the dative wins over the nominative.

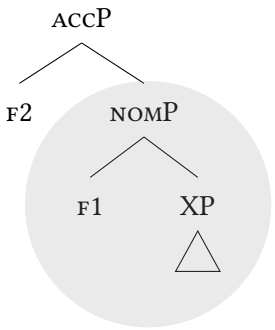
(51)



Finally there is the competition between accusative and nominative, in which accusative wins. The corresponding cells are uncolored in Table 3.4. In (52) I show the syntactic structure of an accusative relative pronoun. It contains the XP, F1 and F2. Contained in this structure is a nominative relative pronoun, marked in gray. This consists of the XP and F1. The bigger structure wins against the smaller structure it

contains: the accusative wins over the nominative.

(52)



In sum, the cumulative case decomposition from Table 3.1 can derive the case scale observed for case competition in headless relatives.

3.5 Summary

In this section I discussed how a cumulative case decomposition can derive the case scale observed in syncretism patterns, morphological case containment and case competition in headless relatives. Besides the cumulative case decomposition, I assume a Nanosyntactic framework, in which syntactic structures are built from single features, and matched onto lexical entries in the postsyntactic lexicon.

Regarding syncretism, several patterns are attested crosslinguistically (ABC, AAA, AAB and ABB) but one is not: ABA. This follows in a system in which syncretic forms are realized by a single lexical entry. A lexical entry can be applied if it contains all features, as long as there is no more specific one.

Languages with morphological case containment show the cumulative case decomposition in their morphology. The phonological form of the accusative contains the form of the nominative plus an extra morpheme. The phonological form of the dative contains the form of the accusative plus an extra morpheme.

For headless relatives, the idea is that a case wins the competition if it contains all features the other case has. As the dative is the richest in features (it contains F1, F2 and F3), it wins over the accusative (which consists of F1 and F2) and the nominative (which contains only F1). Finally, the accusative wins over the nominative, because the former is richer in features than the latter.

Part II

The base

Chapter 4

A typology

In Part I of this dissertation, I discussed a first aspect of case competition in headless relatives. There is a fixed scale that determines which case wins the case competition. This is the same case scale crosslinguistically. I repeat the case scale from Chapter 2 in (1).

(1) NOM < ACC < DAT

In Chapter 3 within Part I, I argued that a cumulative case decomposition can derive the case scale. This does not only hold for case competition in headless relatives, but also for syncretism patterns and morphological case containment patterns. In a cumulative case composition, the scale in (1) can be interpreted as follows: the accusative contains all features the nominative contains plus one more. Similarly, the dative contains all features the accusative contains plus one. Therefore, the dative can be considered more complex than the accusative, and the accusative more complex than the nominative. In line with that, I refer to cases more to the right on the case scale as being more complex cases than cases more to the left on the scale.

This part of the dissertation, Part II, focuses on a second aspect to headless relatives. This aspect is not stable crosslinguistically, but it differs across languages. Languages differ in whether they allow the internal case (the case from the relative clause) and the external case (the case from the main clause) to surface when either of them wins the case competition. Metaphorically speaking, even though a case wins the case competition, it is a second matter whether it is allowed to come for-

ward as a winner. Four patterns are logically possible for languages: (1) the internal case and the external case are allowed to surface when either of them wins the case competition, (2) only the internal case is allowed to surface when it wins the case competition, and the external case is not, (3) only the external case is allowed to surface when it wins the case competition, and the internal case is not, (4) neither the internal case nor the external case is allowed to surface when either of them wins the competition.[1] I show in this chapter that one of these logically possible patterns is not attested in any natural language.

In this dissertation I discuss languages of which headless relatives have been described in the literature. As I write about case competition, I only focus on languages that morphologically distinguish between case, specifically the nominative, the accusative and the dative. By no means do I claim that my language sample is representative for the languages of the world. However, they build on independently established facts, which are the case scale from Chapter 2 and the subset requirement of the external head, to be discussed in Chapter 5. Therefore, I predict that my generalizations hold for all natural languages.

The next section introduces the patterns that are logically possible with case competition. In Section 4.2 to Section 4.5, I discuss the patterns one by one, and I give examples when the pattern is attested. In Section 4.7, I make a sidestep to languages that do not show any case competition, and I give a typology of headless relatives.

4.1 Four possible patterns

Case competition has two aspects. The first aspect is the topic of Part I of the dissertation. It concerns which case wins the case competition. This is decided by the same case scale for all languages. The second aspects is the topic of Part II of the dissertation. This one concerns whether the case that wins the case competition is actually allowed to surface. It namely differs per language whether it allows the internal or the external case to do so.

[1] On the surface, the last pattern cannot be distinguished from a language that does not have case competition and does not allow for any case mismatches. I come back to this matter in 4.1, where I argue that there actually is case competition in play.

Metaphorically, the second aspect can be described as a language-specific approval committee. The committee learns (from the first aspect) which case wins the case competition. Then it can either approve this case or not approve it. This approval happens based on where the winning case comes from: from inside to the relative clause (internal) or from outside to the relative clause (external). It is determined per language whether it approves the internal case, the external case, both of them or none of them. The approval committee can only approve the winner of the competition or deny it, it cannot propose an alternative winner. In this metaphor, the approval of the committee means that a particular case is allowed to surface. When the case is not allowed to surface, the headless relative as a whole is ungrammatical.

Taking this all together, there are four patterns possible in languages. First, the internal case and the external case are allowed to surface. Second, only the internal case is allowed to surface, and the external case is not. Third, only the external case is allowed to surface, and the internal case is not. Fourth, neither the internal case nor the external case is allowed to surface when either of them wins the competition. In what follows, I introduce these four possible patterns.

The first possible pattern is that of a language that allows the internal case and the external case to surface when either of them wins the case competition. I call this the non-matching type of language (just as cf. Grosu, 1987; Cinque, 2020): the internal and external case do not need to match. The pattern might look familiar, because it is the one that Gothic has, which I discussed in Chapter 2. Table 4.1 (repeated from Table 2.5) illustrates what the pattern for such a language looks like.

The left column shows the internal case between square brackets. The top row shows the external case between square brackets. The other cells indicate the case of the relative pronoun. The top-left to bottom-right diagonal corresponds to the examples in which the internal and external case match. The three cells in the bottom-left corner, marked in light gray, are the situations in which the internal case surfaces when it wins the competition. The three cells in the top-right corner, marked in dark gray, are the situations in which the external case surfaces when it wins the competition. All these instances are grammatical.

Table 4.1: Internal and external case allowed

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	DAT
[DAT]	DAT	DAT	DAT

The second possible pattern is that of a language that allows the internal case to surface when it wins the case competition, but it does not allow the external case to do so. In this type of language, the internal case gets to surface when it is more complex than the external one. When the external case is more complex, it is not allowed to surface, and the headless relative construction is ungrammatical. I call this the 'non-matching — internal only' type of language: the internal and external case do not need to match, but only the internal case is allowed to surface as a winner.

Table 4.2 illustrates what the pattern for such a language looks like. Compared to the 'non-matching' type, it has three cells in which there is no grammatical relative pronoun. The top-left to bottom-right diagonal corresponds to the examples in which the internal and external case match. The three cells in the bottom-left corner, marked in light gray, are the situations in which the internal case surfaces when it wins the competition. Just as in the 'non-matching' type, these six instances are grammatical. The three cells in the top-right corner, marked in dark gray, are the situations in which the external case surfaces when it wins the competition. These instances are not grammatical for this type of language. The reasoning behind that is that the language does not allow the external case to surface when it wins the case competition.

Table 4.2: Only internal case allowed

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

The third possible pattern is that of a language that allows the external case to surface when it wins the case competition, but it does not allow the internal case to do so. In this type of language, only the external case gets to surface when it is more complex. When the internal case is more complex, it is not allowed to surface, and the headless relative construction is ungrammatical. I call this the 'non-matching — external only' type of language: the internal and external case do not need to match, but only the external case is allowed to surface as a winner.

Table 4.3 illustrates what the pattern for such a language looks like. Comparing this pattern to the second one, the ungrammatical cells are here the three on the other side of the diagonal. The top-left to bottom-right diagonal corresponds to the examples in which the internal and external case match. Just as in the 'non-matching' type and the 'non-matching — internal-only' type, these instances are grammatical. The three cells in the bottom-left corner, marked in light gray, are the situations in which the internal case surfaces when it wins the competition. Unlike in the 'non-matching' type and the 'non-matching — internal-only' type, these instances are not grammatical for this type of language. The reasoning behind that is that the language does not allow the internal case to surface when it wins the case competition. The three cells in the top-right corner, marked in dark gray, are the situations in which the external case surfaces when it wins the competition. Just as in the 'non-matching' type but unlike in the 'non-matching — internal-only' type, these instances are grammatical.

Table 4.3: Only external case allowed

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

The fourth possible pattern is that of a language that allows neither the internal case nor the external case to surface when either of them wins the competition. In other words, when the internal and the external case differ, there is no grammatical headless relative construction possible. Only when there is a tie, i.e. when the internal and external case match, there is a grammatical result. I call this the 'matching' type of language: the internal and external case need to match.

Table 4.4 illustrates what the pattern for such a language looks like. The top-left to bottom-right diagonal corresponds to the examples in which the internal and external case match. Just as in the other three pattern, these instances are grammatical. The three cells in the bottom-left corner, marked in light gray, are the situations in which the internal case surfaces when it wins the competition. Just as the 'non-matching — external-only' type, but unlike the 'non-matching' type and the 'non-matching — internal-only' type, these instances are not grammatical for this type of language. The three cells in the top-right corner, marked in dark gray, are the situations in which the external case surfaces when it wins the competition. Just as the 'non-matching — internal-only' type, but unlike the 'non-matching' type and the 'non-matching — external-only' pattern, these instances are not grammatical for this type of language. The reasoning behind the ungrammaticality of these six cells is that the language allows neither the internal case nor the external case to surface when either of them wins the competition.

On the surface, this pattern cannot be distinguished from a pattern that does not have case competition and does not allow for any case mismatches. I understand 'a language with case competition' as a language that compares the internal and external case in its headless relatives. If the internal and external case are not

compared in this type of language, it would be unclear why the diagonal is different from all the other cells. The source of ungrammaticality for the cells in Table 4.4 can only come from the comparing the internal and external case and concluding that the internal case and the external case differ. The grammaticality of the diagonal follows from the conclusion that the internal and the external case match. In Section 4.7 I discuss languages in which the internal and external case are not compared to each other.

Table 4.4: Only matching allowed

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

In this chapter I show that three of these four patterns I introduced are attested crosslinguistically. Section 4.2 shows that the 'non-matching' type, in which either the internal case or the external case can surface, is exemplified by Gothic (repeated from Chapter 2) and by Old High German. The 'non-matching — internal-only' type, in which only the internal case can surface, is illustrated by Modern German in Section 4.3. To my knowledge, there is no language in which only the external case can surface when it wins the case competition. This is discussed in 4.4. Section 4.5 shows a language that only allows the case to surface when there is a tie, i.e. when the internal and external case match, namely Polish.

4.2 Internal and external case allowed

This section discusses the situation in which the internal case and the external case are allowed to surface when either of them wins the case competition. I repeat the pattern from Section 4.1 in Table 4.5.

Table 4.5: Internal and external case allowed (repeated)

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	DAT
[DAT]	DAT	DAT	DAT

Two examples of languages that show this pattern are Gothic and Old High German. In this section, I repeat the summary of the findings from Gothic (from Chapter 2), and I present the data for Old High German, which is the result of my own research.

In Chapter 2, I discussed case competition in Gothic headless relatives, based on the work of Harbert (1978). I repeat the results from Section 2.1 in Table 4.6. In Gothic, the relative pronoun is allowed to surface in the internal case and the external case. The top-left to bottom-right diagonal corresponds to the examples in which the internal and external case match. The three cells in the bottom-left corner, marked in light gray, are the situations in which the internal case surfaces when it wins the competition. The three cells in the top-right corner, marked in dark gray, are the situations in which the external case surfaces when it wins the competition. All these instances are grammatical. The examples corresponding to the cells in Table 4.6 can be found in Section 2.1.

Table 4.6: Summary of Gothic headless relatives (repeated)

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	DAT
[DAT]	DAT	(DAT)	DAT

Old High German is another instance of a language in which the relative pronoun is allowed to surface in the internal case and the external case. This conclu-

sion follows from my own research of the texts 'Der althochdeutsche Isidor', 'The Monsee fragments', 'Otfrid's Evangelienbuch' and 'Tatian' in ANNIS (Krause and Zeldes, 2016).[2] The examples follow the spelling and the detailed glosses in ANNIS. The translations are my own.

First I discuss examples in which the internal and the external case match, and then examples in which they differ. If the internal case and the external case are identical, so there is a tie, the relative pronoun simply surfaces in that case. I illustrate this for the nominative, the accusative and the dative.

Consider the example in (2), in which the internal nominative case competes against the external nominative case. The internal case is nominative, as the predicate *senten* 'to send' takes nominative subjects. The external case is nominative as well, as the predicate *queman* 'to come' also takes nominative subjects. The relative pronoun *dher* 'REL.SG.M.NOM' appears in the internal and external case: the nominative.

(2) quham dher chisendit scolda
come.PST.3SG$_{[NOM]}$ REL.SG.M.NOM send.PST.PTCP$_{[NOM]}$ should.PST.3SG
uuerdhan
become.INF
'the one, who should have been sent, came' (Old High German, Isid. 35:5)

Consider the example in (3), in which the internal accusative case competes against the external accusative case. The internal case is accusative, as the predicate *quedan* 'to speak' takes accusative objects. The external case is accusative as well, as the predicate *gihoren* 'to listen to' also takes accusative objects. The relative pronoun *thiu* 'REL.PL.N.ACC' appears in the internal and external case: the accusative.

[2]Old High German is widely discussed in the literature because of its case attraction in headed relatives (cf. Pittner, 1995), a phenomenon that seems related to case competition in headless relatives (see Section 1.3.1 for why attraction is not further discussed in this dissertation). A common observation is that case attraction in headed relatives in Old High German adheres to the case scale. The same is claimed for headless relatives. What, to my knowledge, has not been studied systematically is whether Old High German headless relatives allow the internal case and the external case to surface when either of them wins the case competition. This is what I investigated in my work.

(3) gihortut ir thiu ih íu
listen.PST.2PL$_{[ACC]}$ 2PL.NOM REL.PL.N.NOM 1SG.NOM 2PL.DAT
quad
speak.PST.1SG$_{[ACC]}$
'you listened to those things, that I said to you'
(Old High German, Tatian 165:6)

Consider the example in (4), in which the internal dative case competes against the external dative case.[3] The internal case is dative, as the predicate *willian* 'to wish' takes dative objects. The external case is dative as well, as the predicate *seggian* 'to say' takes dative indirect objects. The relative pronoun *them* 'REL.PL.M.DAT' appears in the internal and external case: the dative.

(4) sagda them siu uuelda
say.PST.3SG$_{[DAT]}$ REL.PL.M.DAT 3SG.F.NOM wish.PST.3SG$_{[DAT]}$
'she said to those, whom she wished for' (Old Saxon, Hel. 4:293)

These findings can be summarized as in Table 4.7. The top-left to bottom-right diagonal corresponds to the examples I have given so far in which the internal and external case match. The nominative marked in light gray corresponds to (2), in which the internal nominative case competes against the external nominative case, and the relative pronoun surfaces in the nominative case. The accusative marked in dark gray corresponds to (3), in which the internal accusative case competes against the external accusative case, and the relative pronoun surfaces in the accusative case. The unmarked dative corresponds to (4), in which the internal dative case competes against the external dative case, and the relative pronoun surfaces in the dative case.

[3] I could not find such an instance for this situation in any of the Old High German texts. This example comes from the 'Heliand', an Old Saxon text written around the same time as the Old High German works I give examples from. Old Saxon is linguistically speaking the closest relative of Old High German.

Table 4.7: Old High German headless relatives (matching)

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM		
[ACC]		ACC	
[DAT]			(DAT)

In Table 4.7, six cells remain empty. These are the cases in which the internal and the external case differ. In the remainder of this section, I discuss them one by one.

I start with the competition between the accusative and the nominative. Following the case scale, the relative pronoun appears in the accusative case and never in nominative. As Old High German allows the internal and external case to surface, the accusative surfaces when it is the internal case and when it is the external case.

Consider the example in (5). In this example, the internal accusative case competes against the external nominative case. The internal case is accusative, as the predicate *zellen* 'to tell' takes accusative objects. The external case is nominative, as the predicate *sin* 'to be' takes nominative objects. The relative pronoun *then* 'REL.SG.M.ACC' appears in the internal case: the accusative. 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 internal case is accusative, the external case is nominative and the relative pronoun appears in the nominative case are unattested.

(5) Thíz ist **then sie zéllent**
DEM.SG.N.NOM be.PRES.3SG$_{[NOM]}$ REL.SG.M.ACC 3PL.M.NOM tell.PRES.3PL$_{[ACC]}$
'this is the one whom they talk about' (Old High German, Otfrid III 16:50)

Consider the example in (6). In this example, the internal nominative case competes against the external accusative case. The internal case is nominative, as the predicate *gisizzen* 'to possess' takes nominative subjects. The external case is accusative, as the predicate *bibringan* 'to create' takes accusative objects. The relative

pronoun *dhen* 'REL.SG.M.ACC' appears in the external case: the accusative. The relative pronoun is not marked in bold, just as the main clause, showing that the relative pronoun patterns with the main clause.[4]

(6) ih bibringu fona iacobes samin endi fona
1SG.NOM create.PRES.1SG$_{[ACC]}$ of Jakob.GEN seed.SG.DAT and of
iuda dhen **mina** **berga**
Judah.DAT REL.SG.M.ACC my.ACC.M.PL mountain.ACC.PL
chisitzit
possess.PRES.3SG$_{[NOM]}$
'I create of the seed of Jacob and of Judah the one, who possess my mountains'

(Old High German, Isid. 34:3)

The two examples in which the nominative and the accusative compete are highlighted in Table 4.8. The light gray marking corresponds to (5), in which the internal accusative wins over the external nominative, and the relative pronoun surfaces in the accusative case. The dark gray marking corresponds to (6), in which the external accusative wins over the internal nominative, and the relative pronoun surfaces in the accusative case.

Table 4.8: Old High German headless relatives (NOM — ACC)

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	
[ACC]	ACC	ACC	
[DAT]			(DAT)

I continue with the competition between the dative and the nominative. Fol-

[4] At the end of this section I discuss a counterexample to the case scale, in which the internal case is nominative, the external case is accusative, and the relative pronoun appears in the nominative case.

lowing the case scale, the relative pronoun appears in the dative case and never in nominative. As Old High German allows the internal and the external case to surface, the dative surfaces when it is the internal case and when it is the external case.

Consider the example in (7). In this example, the internal dative case competes against the external nominative case. The internal case is dative, as the predicate *forlazan* 'to read' takes dative indirect objects. The external case is nominative, as the predicate *minnon* 'to love' takes nominative subjects. The relative pronoun *themo* 'REL.SG.M.DAT' 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 internal case is dative, the external case is nominative and the relative pronoun appears in the nominative case are unattested.

(7) **themo** **min uuirdit** **forlazan**, min minnot
REL.SG.M.DAT less become.PRES.3SG read.INF$_{[DAT]}$ less love.PRES.3SG$_{[NOM]}$
'to whom less is read, loves less' (Old High German, Tatian 138:13)

Consider the example in (8). In this example, the internal nominative case competes against the external dative case. The internal case is nominative, as the predicate *sprehhan* 'to speak' takes nominative subjects. The external case is dative, as the predicate *antwurten* 'to reply' takes dative objects. The relative pronoun *demo* 'REL.SG.M.DAT' appears in the external case: the dative. The relative pronoun is not marked in bold, just as the main clause, showing that the relative pronoun patterns with the main clause. Examples in which the internal case is nominative, the external case is dative and the relative pronoun appears in the nominative case are unattested.

(8) enti aer ant uurta demo **zaimo**
and 3SG.M.NOM reply.PST.3SG$_{[DAT]}$ REL.SG.M.DAT to 3SG.M.DAT
sprah
speak.PST.3SG$_{[NOM]}$
'and he replied to the one who spoke to him'
(Old High German, Mons. 7:24, adapted from Pittner 1995: 199)

The two examples in which the nominative and the dative compete are highlighted in Table 4.9. The light gray marking corresponds to (7), in which the internal dative wins over the external nominative, and the relative pronoun surfaces in the dative case. The dark gray marking corresponds to (8), in which the external dative wins over the internal nominative, and the relative pronoun surfaces in the dative case.

Table 4.9: Old High German headless relatives (NOM — DAT)

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	
[DAT]	DAT		(DAT)

I end with the competition between the dative and the accusative. Following the case scale, the relative pronoun appears in the dative case and never in accusative. As Old High German allows the internal and the external case to surface, the dative surfaces when it is the internal case and when it is the external case.

Consider the example in (9). In this example, the internal dative case competes against the external accusative case. The internal case is dative, as the predicate *zawen* 'to tell' takes dative subjects. The external case is accusative, as the predicate *weizan* 'to know' takes accusative objects. The relative pronoun *thémo* 'REL.SG.M.DAT' appears in the external 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 internal case is accusative, the external case is dative and the relative pronoun appears in the accusative case are unattested.

(9) weiz **thémo ouh baz záweta**
know.1SG$_{[ACC]}$ REL.SG.M.DAT also better manage.PST.3SG$_{[DAT]}$
'I know the one who also managed it better'
(Old High German, Otfrid V 5:5)

Consider the example in (10). In this example, the internal accusative case competes against the external dative case. The internal case is accusative, as the predicate *zellen* 'to tell' takes accusative objects. The external case is dative, as the comparative of the adjective *furiro* 'great' takes dative objects. The relative pronoun *thên* 'REL.PL.M.DAT' appears in the external case: the dative. The relative pronoun is not marked in bold, just as the main clause, showing that the relative pronoun patterns with the main clause. Examples in which the internal case is accusative, the external case is dative and the relative pronoun appears in the accusative case are unattested.

(10) bis -tú nu zi wáre furira Ábrahame? ouh
be.PRES.2SG -2SG.NOM now truly great.CMPR$_{[DAT]}$ Abraham.DAT and
thén **man** **hiar nu** **zálta**
REL.PL.M.DAT one.NOM.M.SG here now tell.PST.3SG$_{[ACC]}$
'are you now truly greater than Abraham? and than those, who one talked about here now' (Old High German, Otfrid III 18:33)

The two examples in which the accusative and the dative compete are highlighted in Table 4.10. The light gray marking corresponds to (9), in which the internal dative wins over the external accusative, and the relative pronoun surfaces in the dative case. The dark gray marking corresponds to (10), in which the external dative wins over the internal accusative, and the relative pronoun surfaces in the dative case.

Table 4.10: Old High German headless relatives (ACC — DAT)

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	DAT
[DAT]	DAT	DAT	(DAT)

In my research I encountered a single counterexample to the pattern I just de-

scribed. Consider the example in (11). In this example, the internal nominative case competes against the external accusative case. The internal case is nominative, as the predicate *giheilen* 'to save' takes nominative subjects. The external case is accusative, as the predicate *beran* 'to bear' takes accusative objects. Surprisingly, the relative pronoun *thér* 'REL.SG.M.NOM' appears in the internal case: the nominative, which is the less complex of the two cases. The relative pronoun is marked in bold, just as the relative clause, showing that the relative pronoun patterns with the relative clause.

(11) Tház si uns béran scolti **thér**
that 3SG.F.NOM 1PL.DAT bear.INF$_{[ACC]}$ should.SUBJ.PST.3SG REL.SG.M.NOM
unsih gihéilti
1PL.ACC save.SBJV.PST.3SG$_{[NOM]}$
'that she should have beared for us the one, who had saved us'
(Old High German, Otfrid I 3:38)

This example is unexpected, because the least complex case (the nominative) wins and not the most complex case (the accusative). The only explanation for this I can see is a functional one. The *thér* 'REL.SG.M.NOM' in (11) refers to Jesus. In the relative clause he is the subject of *unsih gihéilti* 'had saved us', hence the internal nominative case. In the main clause he is the object of *tház si uns béran scolti* 'that she should have beared', hence the external accusative case. Letting the relative pronoun surface in the internal case could be interpreted as emphasizing the role of Jesus as a savior, rather than him being the object of being given birth to. In line with that reasoning, it is expected that certain grammatical facts more often deviate from regular patterns if Jesus is involved. I leave investigating this prediction for future research. Of course, this does not answer the question of what happens to the accusative case required by the external predicate. It also does not explain why not another emphasizing strategy is used, for instance forming a light-headed relative, which would leave space for two cases. I acknowledge this example as a counterexample to the pattern I describe, but I do not change my generalization, as this is a single occurrence.

Leaving the counterexample aside, I conclude that Gothic and Old High German

are both instances of languages that allow the internal and the external case to surface. The relative pronoun surfaces in the case that wins the case competition.

4.3 Only internal case allowed

This section discusses the situation in which only the internal case is allowed to surface when it wins the case competition. When the internal case wins the case competition, the result is ungrammatical. I repeat the pattern from Section 4.1 in Table 4.11.

Table 4.11: Only internal case allowed (repeated)

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

An example of a language that shows this pattern is Modern German. In this section I discuss the Modern German data, based on the research of Vogel (2001). The examples and the judgements are Vogel's (2001). I made the glosses more detailed, and I added translations where they were absent.

First I discuss examples in which the internal and the external case match, and then examples in which they differ. If the internal case and the external case are identical, so there is a tie, the relative pronoun simply surfaces in that case. I illustrate this for the nominative, the accusative and the dative.

Consider the example in (12), in which the internal nominative case competes against the external nominative case. The internal case is nominative, as the predicate *mögen* 'to like' takes nominative subjects. The external case is nominative as well, as the predicate *besuchen* 'to visit' also takes nominative subjects. The relative pronoun *wer* 'REL.AN.NOM' appears in the internal and external case: the nominative.

(12) Uns besucht, wer Maria mag.
2PL.ACC visit.PRES.3SG$_{[NOM]}$ REL.AN.NOM Maria.ACC like.PRES.3SG$_{[NOM]}$
'Who visits us likes Maria.'
(Modern German, adapted from Vogel 2001: 343)

Consider the example in (13), in which the internal accusative case competes against the external accusative case. The internal case is accusative, as the predicate *mögen* 'to like' takes accusative objects. The external case is accusative as well, as the predicate *einladen* 'to invite' also takes accusative objects. The relative pronoun *wen* 'REL.AN.ACC' appears in the internal and external case: the accusative.

(13) Ich lade ein, wen auch Maria
1SG.NOM invite.PRES.1SG$_{[ACC]}$ REL.AN.ACC Maria.NOM like.PRES.3SG$_{[ACC]}$
mag.

'I invite who Maria also likes.'
(Modern German, adapted from Vogel 2001: 344)

Consider the examples in (14), in which the internal dative case competes against the external dative case. The internal case is dative, as the predicate *vertrauen* 'to please' takes dative objects. The external case is dative as well, as the predicate *folgen* 'to follow' also takes dative objects. The relative pronoun *wem* 'REL.AN.DAT' appears in the internal and external case: the dative.

(14) Ich folge, wem immer ich
1SG.NOM folge.PRES.1SG$_{[DAT]}$ REL.AN.DAT ever 1SG.NOM
vertraue.
vertraue.PRES.3SG$_{[DAT]}$.
'I follow whoever I trust.' (Modern German, adapted from Vogel 2001: 342)

These findings can be summarized as in Table 4.12. The top-left to bottom-right diagonal corresponds to the examples I have given so far in which the internal and external case match. The nominative marked in light gray corresponds to (12), in which the internal nominative case competes against the external nominative case,

and the relative pronoun surfaces in the nominative case. The accusative marked in dark gray corresponds to (13), in which the internal accusative case competes against the external accusative case, and the relative pronoun surfaces in the accusative case. The unmarked dative corresponds to (14), in which the internal dative case competes against the external dative case, and the relative pronoun surfaces in the dative case.

Table 4.12: Modern German headless relatives (matching)

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM		
[ACC]		ACC	
[DAT]			DAT

In Table 4.12, six cells remain empty. These are the cases in which the internal and the external case differ. In the remainder of this section, I discuss them one by one.

I start with the competition between the accusative and the nominative. Following the case scale, the relative pronoun appears in the accusative case and never in nominative. Following the internal-only requirement, when the accusative case is the internal case, the sentence is grammatical. When the accusative is the external case, the sentence is ungrammatical.

I start with the situation in which the internal case wins the competition, and it is possible to have a grammatical Modern German headless relative. Consider the example in (15). In this example, the internal accusative case competes against the external nominative case. The internal case is accusative, as the predicate *mögen* 'to like' takes accusative objects. The external case is nominative, as the predicate *besuchen* 'to visit' takes nominative subjects. The relative pronoun *wen* 'REL.AN.ACC' appears in the internal case: the accusative. The relative pronoun is marked in bold, just as the relative clause, showing that the relative pronoun patterns with the relative clause. The example is grammatical, because the example adheres to the case scale, and the most complex case (here the accusative) is the internal case.

(15) Uns besucht, **wen** **Maria** **mag**.
2PL.ACC visit.PRES.3SG$_{[NOM]}$ REL.AN.ACC Maria.NOM like.PRES.3SG$_{[ACC]}$
'Who visits us, Maria likes.'
(Modern German, adapted from Vogel 2001: 343)

The example in (16) is identical to (15), except for that the relative pronoun appears in the external less complex nominative case. This example is ungrammatical: although the internal case is more complex, the relative pronoun appears in the least complex case (the nominative) and not in the most complex case (the accusative).

(16) *Uns besucht, **wer** **Maria** **mag**.
2PL.ACC visit.PRES.3SG$_{[NOM]}$ REL.AN.NOM Maria.NOM like.PRES.3SG$_{[ACC]}$
'Who visits us, Maria likes.'
(Modern German, adapted from Vogel 2001: 343)

Now I turn to the situation in which the external case wins the competition, and there is no grammatical outcome possible, whichever case the relative pronoun appears in. Consider the example in (17). In this example, the internal nominative case competes against the external accusative case. The internal case is nominative, as the predicate *sein* 'to be' takes nominative subjects. The external case is accusative, as the predicate *einladen* 'to invite' takes accusative objects. The relative pronoun *wen* 'REL.AN.ACC' appears in the external case: the accusative. The relative pronoun is not marked in bold, just as the main clause, showing that the relative pronoun patterns with the main clause. The example adheres to the case scale, but the most complex case (here the accusative) is not the internal case. The example is ungrammatical, because only the internal can win the case competition in Modern German.

(17) *Ich lade ein, wen **mir** **sympathisch** **ist**.
1SG.NOM invite.PRES.1SG$_{[ACC]}$ REL.AN.ACC 1SG.DAT nice be.PRES.3SG$_{[NOM]}$
'I invite who I like.' (Modern German, adapted from Vogel 2001: 344)

The example in (18) is identical to (17), except for that the relative pronoun appears

in the external less complex nominative case. This example is also ungrammatical: in addition to the most complex case not being the internal case, the relative pronoun also does not appear in the most complex case (the accusative) but in the least complex case (the nominative).[5]

(18) *Ich lade ein, wer **mir** **sympathisch** **ist**.
1SG.NOM invite.PRES.1SG$_{[ACC]}$ REL.AN.NOM 1SG.DAT nice be.PRES.3SG$_{[NOM]}$
'I invite who I like.' (Modern German, adapted from Vogel 2001: 344)

The two examples in which the nominative and the accusative compete are highlighted in Table 4.13. The light gray marking corresponds to (15), in which the internal accusative wins over the external nominative, and the relative pronoun surfaces in the accusative case (and not in the losing nominative case as in (16)).

[5]Not every speaker or Modern German agrees with the ungrammaticality of (18). A sentence for which also has been claimed that speakers accept it is given in (i). This example was originally marked as ungrammatical by Groos and van Riemsdijk (1981: 206).

(i) Ich liebe wer gutes tut, und hasse, wer mich verletzt.
1SG.NOM love.1SG$_{[ACC]}$ REL.AN.NOM good.NMLZ do.3SG$_{[NOM]}$ and hate.1SG$_{[ACC]}$ REL.AN.NOM ISG.ACC hurt.3SG$_{[NOM]}$
'I love who does good and hate who hurts me.'
(Modern German, adapted from Groos and van Riemsdijk 1981: 206)

The relative acceptability of (18) and (i) is unexpected because the relative pronoun appears in the least complex case (the nominative) and not in the more complex case (the accusative). However, the more complex case would also not be grammatical, because it is the external case, and Modern German only allows the relative pronoun to surface in the internal case. My hypothesis is that, because there is no way of making the headless relative grammatical, speakers try to make the construction work by somehow repairing it. I can think of two strategies for that: (1) they can take *wer gutes tut* 'who does good' and *wer mich verletzt* 'who hurts me' as clauses objects, which are not case-marked in German, or (2) they insert a morphologically silent object as the head of the relative clause.

Notice that this type of example is crucially different from the Old High German counterexample in (11). In the Old High German situation, there was a grammatical possibility which was not used, and in the Modern German situation, there is no grammatical way to make a headless relative.

The dark gray marking corresponds to (17), in which the external accusative wins over the internal nominative, but the relative pronoun is not allowed to surface in the accusative case (or in the losing nominative case as in (18)).

Table 4.13: Modern German headless relatives (NOM — ACC)

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

I continue with the competition between the dative and the nominative. Following the case scale, the relative pronoun appears in the dative case and never in nominative. Following the internal-only requirement, when the dative case is the internal case, the sentence is grammatical.

I start again with the situation in which the internal case wins the competition, and it is possible to have a grammatical Modern German headless relative. Consider the example in (19). In this example, the internal dative case competes against the external nominative case. The internal case is dative, as the predicate *vertrauen* 'to trust' takes dative objects. The external case is nominative, as the predicate *besuchen* 'to visit' takes nominative subjects. The relative pronoun *wem* 'REL.AN.DAT' 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. The example adheres to the case scale, and the most complex case (here the dative) is the internal case, so the example is grammatical.

(19) Uns besucht, **wem** **Maria** **vertraut**.
2PL.ACC visit.PRES.3SG$_{[NOM]}$ REL.AN.DAT Maria.NOM trust.PRES.3SG$_{[DAT]}$
'Who visits us, Maria trusts.'
(Modern German, adapted from Vogel 2001: 343)

The example in (20) is identical to (19), except for that the relative pronoun appears

in the external less complex nominative case. This example is ungrammatical: although the internal case is more complex, the relative pronoun appears in the least complex case (the nominative) and not in the most complex case (the dative).

(20) *Uns besucht, **wer** **Maria** **vertraut**.
2PL.ACC visit.PRES.3SG$_{[NOM]}$ REL.AN.NOM Maria.NOM trust.PRES.3SG$_{[DAT]}$
'Who visits us, Maria trusts.'
(Modern German, adapted from Vogel 2001: 343)

Now I turn again to the situation in which the external case wins the competition, and there is no grammatical outcome possible, whichever case the relative pronoun appears in. Consider the example in (21). In this example, the internal nominative case competes against the external dative case. The internal case is nominative, as the predicate *mögen* 'to like' takes nominative subjects. The external case is dative, as the predicate *vertrauen* 'to trust' takes dative objects. The relative pronoun *wem* 'REL.AN.DAT' appears in the external case: the dative. The relative pronoun is not marked in bold, just as the main clause, showing that the relative pronoun patterns with the main clause. The example adheres to the case scale, but the most complex case (here the dative) is not the internal case. The example is ungrammatical, because only the internal can win the case competition in Modern German.

(21) *Ich vertraue, wem **Hitchcock** **mag**.
1SG.NOM trust.PRES.1SG$_{[DAT]}$ REL.AN.DAT Hitchcock.ACC like.PRES.3SG$_{[NOM]}$
'I trust who likes Hitchcock.'
(Modern German, adapted from Vogel 2001: 345)

The example in (22) is identical to (21), except for that the relative pronoun appears in the external less complex nominative case. This example is also ungrammatical: in addition to the most complex case not being the internal case, the relative pronoun also does not appear in the most complex case (the dative) but in the least complex case (the nominative).

(22) *Ich vertraue, wer **Hitchcock mag**.
1SG.NOM trust.PRES.1SG$_{[DAT]}$ REL.AN.NOM Hitchcock.ACC like.PRES.3SG$_{[NOM]}$
'I trust who likes Hitchcock.'
(Modern German, adapted from Vogel 2001: 345)

The two examples in which the nominative and the dative compete are highlighted in Table 4.14. The light gray marking corresponds to (19), in which the internal dative wins over the external nominative, and the relative pronoun surfaces in the dative case (and not in the losing nominative case as in (20)). The dark gray marking corresponds to (21), in which the external dative wins over the internal nominative, but the relative pronoun is not allowed to surface in the dative case (or in the losing nominative case as in (22)).

Table 4.14: Modern German headless relatives (NOM — DAT)

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

I end with the competition between the dative and the accusative. Following the case scale, the relative pronoun appears in the dative case and never in accusative. Following the internal-only requirement, when the dative case is the internal case, the sentence is grammatical.

I start again with the situation in which the internal case wins the competition, and it is possible to have a grammatical Modern German headless relative. Consider the example in (23). In this example, the internal dative case competes against the external accusative case. The internal case is dative, as the predicate *vertrauen* 'to trust' takes dative objects. The external case is accusative, as the predicate *einladen* 'to invite' takes accusative objects. The relative pronoun *wem* 'REL.AN.DAT' 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.

The example adheres to the case scale, and the most complex case (here the dative) is the internal case, so the example is grammatical.

(23) Ich lade ein, **wem auch Maria**
1SG.NOM invite.PRES.1SG$_{[ACC]}$ REL.AN.DAT also Maria.NOM
vertraut.
trust.PRES.3SG$_{[DAT]}$.
'I invite whoever Maria also trusts.'
(Modern German, adapted from Vogel 2001: 344)

The example in (24) is identical to (23), except for that the relative pronoun appears in the external less complex accusative case. This example is ungrammatical: although the internal case is more complex, the relative pronoun appears in the least complex case (the accusative) and not in the most complex case (the dative).

(24) *Ich lade ein, **wen auch Maria**
1SG.NOM invite.PRES.1SG$_{[ACC]}$ REL.AN.ACC also Maria.NOM
vertraut.
trust.PRES.3SG$_{[DAT]}$.
'I invite whoever Maria also trusts.'
(Modern German, adapted from Vogel 2001: 344)

Now I turn again to the situation in which the external case wins the competition, and there is no grammatical outcome possible, whichever case the relative pronoun appears in. Consider the example in (25). In this example, the internal accusative case competes against the external dative case. The internal case is accusative, as the predicate *mögen* 'to like' takes accusative objects. The external case is dative, as the predicate *vertrauen* 'to trust' takes dative objects. The relative pronoun *wem* 'REL.AN.DAT' appears in the external case: the dative. The relative pronoun is not marked in bold, just as the main clause, showing that the relative pronoun patterns with the main clause. The example adheres to the case scale, but the most complex case (here the dative) is not the internal case. The example is ungrammatical, because only the internal can win the case competition in Modern German.

(25) *Ich vertraue, wem **auch Maria**
1SG.NOM trust.PRES.1SG$_{[DAT]}$ REL.AN.DAT also Maria.NOM
mag.
like.PRES.3SG$_{[ACC]}$.
'I trust whoever Maria also likes.'
(Modern German, adapted from Vogel 2001: 345)

The example in (26) is identical to (25), except for that the relative pronoun appears in the external less complex accusative case. This example is also ungrammatical: in addition to the most complex case not being the internal case, the relative pronoun also does not appear in the most complex case (the dative) but in the least complex case (the accusative).

(26) *Ich vertraue, wen **auch Maria**
1SG.NOM trust.PRES.1SG$_{[DAT]}$ REL.AN.ACC also Maria.NOM
mag.
like.PRES.3SG$_{[ACC]}$.
'I trust whoever Maria also likes.'
(Modern German, adapted from Vogel 2001: 345)

The two examples in which the nominative and the dative compete are highlighted in Table 4.15. The light gray marking corresponds to (23), in which the internal dative wins over the external accusative, and the relative pronoun surfaces in the dative case (and not in the losing accusative case as in (24)). The dark gray marking corresponds to (25), in which the external dative wins over the internal nominative, but the relative pronoun is not allowed to surface in the dative case (or in the losing accusative case as in (26)).

Table 4.15: Modern German headless relatives (ACC — DAT)

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

In sum, Modern German is an instance of a language that only allows the internal case to surface. The relative pronoun surfaces in the most complex case, but only when this more complex case is the internal case.

4.4 Only external case allowed

This section discusses the situation in which only the external case is allowed to surface when it wins the case competition. When the internal case wins the case competition, the result is ungrammatical. I repeat the pattern from Section 4.1 in Table 4.16.

Table 4.16: Only external case allowed (repeated)

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

To my knowledge, this pattern is not attested in any natural language, whether extinct or alive. Classical Greek has been mentioned in the literature both as a language of the third type (c.f. Cinque 2020, p. 120, who actually classifies Gothic also as such) and as a language of the first type (cf. Grosu, 1987, p. 41). I show that the correct description of Classical Greek is the latter, and that it patterns with

Gothic and Old High German.[6] I start with an example in which a more complex external case wins the case competition over a less complex internal case, and the relative pronoun surfaces in the external case.

Consider the example in (27). In this example, the internal accusative case competes against the external dative case. The internal case is accusative, as the predicate *tíktō* 'to give birth to' takes accusative objects. The external case is dative, as the predicate *ékhō* 'to provide' takes dative indirect objects. The relative pronoun *hǫ̃́* 'REL.SG.M.DAT' appears in the internal case: the dative. The relative pronoun is not marked in bold, unlike as the relative clause, showing that the relative pronoun patterns with the main clause.

(27) pãn tò tekòn trophèn ékhei hǫ̃́ **án**
any parent.SG.NOM food.SG.ACC provide.PRES.3SG$_{[DAT]}$ REL.SG.M.DAT MOD
tékē̜
gives birth.AOR.3SG$_{[ACC]}$
'any parent provides food to what he would have given birth to'
(Classical Greek, Pl. Men. 237e, adapted from Kakarikos 2014: 292)

This example is compatible with the picture of Classical Greek only allowing the external case to surface when it wins the competition. I repeat Table 4.16 from the beginning of this section as Table 4.17, and I mark the cell that corresponds to the example in (27) in gray.

[6] It does seem to be the case that examples in which the external case wins over the internal case are more frequent in Classical Greek than examples in which the internal case wins over the external case (see Kakarikos 2014 for numerous examples of the former type). In this dissertation I do not address the question of why certain constructions and configurations are more frequent than others. My goal is to set up a system that generates the grammatical patterns and excludes the ungrammatical or unattested patterns.

Table 4.17: Classical Greek headless relatives possibility 1

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

However, the example in (27) is not only compatible with the external-only type. Considering only the example I have given so far, it is still possible for Classical Classical Greek to be of the 'non-matching' type. I repeat Table 4.5 from Section 4.2 as Table 4.18, and I mark the cell that corresponds to the example in (27) in gray.

Table 4.18: Classical Greek headless relatives possibility 2

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	DAT
[DAT]	DAT	DAT	DAT

What sets Table 4.17 and Table 4.18 apart is the bottom-left corner of the table. These are cases in which the internal case wins the case competition. In Table 4.17 these examples are not allowed to surface, and in Table 4.18 they are. In what follows, I give an example in which a more complex internal case wins over a less complex external case. This indicates that Classical Greek cannot be of the type shown in Table 4.17, but is has to be of the type shown in Table 4.18. In other words, it is not of the type that only allows the external case to surface when it wins the case competition.

Consider the example in (28). In this example, the internal accusative case competes against the external nominative case. The internal case is accusative, as the predicate *philéō* 'to love' takes accusative objects. The external case is nominative,

as the predicate *apothnḗiskō* 'to die' takes nominative subjects. The relative pronoun *hòn* 'REL.SG.M.ACC' appears in the internal case: the accusative. The relative pronoun is marked in bold, just as the relative clause, showing that the relative pronoun patterns with the relative clause.[7]

(28) **hòn** **hoi theoì** **philoũsin** apothnę̄́skei néos
REL.SG.M.ACC the god.PL love.3PL$_{[ACC]}$ die.3SG$_{[NOM]}$ young
'He, whom the gods love, dies young.' (Classical Greek, Men. DD., 125)

This example shows that Classical Greek is not an instance of the third possible pattern, in which only the external case is allowed to surface. Instead, as illustrated by Table 4.19, the language allows the internal case (marked light gray) and the external case (marked dark gray) to surface when either of them wins the case competition.

Table 4.19: Summary of Classical Greek headless relatives

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	DAT
[DAT]	DAT	DAT	DAT

I do not discuss more examples from Classical Greek than I did until now. This does not change anything about the point I am making here: the only kind of system that is compatible with the examples given is the one in which the internal and the external case are allowed to surface when either of them wins the case competition. For more examples in which the external case wins, I refer the reader to Kakarikos (2014: 292-294). An example in which the external dative wins over the internal nominative can be found in Noussia-Fantuzzi (2015). I am not aware of an example in which the internal dative wins over the external accusative.

[7] The sentence in (28) can also be analyzed as a headed relative, in which the relative clause modifies the phonologically empty subject of *apothnḗiskō* 'to die'. Then, however, more needs to be said about how it is possible for a relative clause to modify a phonologically empty element.

To sum up, to my knowledge, there is no language in which only the external case is allowed to surface when it wins the case competition, and the internal case is not. Classical Greek patterns with Gothic and Old High German in that is allows the internal and the external case to surface.

4.5 Only matching allowed

This section discusses the situation in which the case is neither the internal case nor the external case allowed to surface when either of them wins the competition. In other words, when the internal and the external case differ, there is no grammatical headless relative construction possible. Only when there is a tie, i.e. when the internal and external case match, there is a grammatical result. I repeat the pattern from Section 4.1 in Table 4.20.

Table 4.20: The 'matching' type (repeated)

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

An example of a language that shows this pattern is Polish. In this section I discuss the Polish data, based on the research of Citko (2013) after Himmelreich (2017). I only go through the case competition between accusative and dative, as only this data is discussed. This does not change anything about the point I am making here: the only kind of system that is compatible with the examples given is the one in which the case is allowed to surface in neither the internal case nor in the external case, when either of them wins the case competition. I made the glosses more detailed, and I added translations where they were absent.

First I discuss examples in which the internal and the external case match, and then examples in which they differ. If the internal case and the external case are

identical, so there is a tie, the relative pronoun simply surfaces in that case. I illustrate this for the nominative, the accusative and the dative.

Consider the example in (29), in which the internal accusative case competes against the external accusative case. The internal case and external case are accusative, as the predicate *lubić* 'to like' in both clauses takes accusative objects. The relative pronoun *kogo* 'REL.ACC.AN.SG' appears in the internal and external case: the accusative.

(29) Jan lubi kogo -kolkwiek Maria lubi.
Jan like.3SG$_{[ACC]}$ REL.ACC.AN.SG ever Maria like.3SG$_{[ACC]}$
'Jan likes whoever Maria likes.'
(Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

Consider the example in (30), in which the internal dative case competes against the external dative case. The internal case is dative, as the predicate *ufać* 'to trust' takes dative objects. The external case is dative as well, as the predicate *pomagać* 'to help' also takes dative objects. The relative pronoun *them* 'REL.PL.AN.DAT' appears in the internal and external case: the dative.

(30) Jan pomaga komu -kolkwiek ufa.
Jan help.3SG$_{[DAT]}$ REL.DAT.AN.SG ever trust.3SG$_{[DAT]}$
'Jan helps whomever he trusts.'
(Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

These findings can be summarized as in Table 4.21. The top-left to bottom-right diagonal corresponds to the examples I have given so far in which the internal and external case match. The accusative marked in light gray corresponds to (29), in which the internal accusative case competes against the external accusative case, and the relative pronoun surfaces in the accusative case. The dative marked in dark gray corresponds to (30), in which the internal dative case competes against the external dative case, and the relative pronoun surfaces in the dative case.

Table 4.21: Polish headless relatives (matching)

INT \ EXT	[ACC]	[DAT]
[ACC]	ACC	
[DAT]		DAT

In Table 4.21, two cells remain empty. These are the cases in which the internal and the external case differ. In the remainder of this section, I discuss them one by one.

I give examples from the case competition between accusative and dative. According to the case scale, the dative would win over the accusative. However, as the case is neither allowed to surface in the internal case nor in the external case, all examples are ungrammatical.

I start with the situation in which the internal case wins the competition, and there is no grammatical outcome possible, whichever case the relative pronoun appears in. Consider the example in (23). In this example, the internal dative case competes against the external accusative case. The internal case is dative, as the predicate *dokuczać* 'to tease' takes dative objects. The external case is accusative, as the predicate *lubić* 'to like' takes accusative objects. The relative pronoun *komu* 'REL.AN.DAT' 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. The example adheres to the case scale, but the internal case is not allowed to surface when it wins the case competition. Therefore, the example is ungrammatical.

(31) *Jan lubi **komu -kolkwiek dokucza**.
Jan like.3SG$_{[ACC]}$ REL.DAT.AN.SG ever tease.3SG$_{[DAT]}$
'Jan likes whoever he teases.'
(Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

The example in (32) is identical to (31), except for that the relative pronoun appears in the external less complex accusative case. This example is also ungrammatical:

the external case is less complex, and the external case is not allowed to surface when it wins the case competition.

(32) *Jan lubi kogo **-kolkwiek dokucza**.
Jan like.3SG$_{[ACC]}$ REL.ACC.AN.SG ever tease.3SG$_{[DAT]}$
'Jan likes whoever he teases.'
(Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

Now I turn to the situation in which the external case wins the competition, and there is no grammatical outcome possible, whichever case the relative pronoun appears in. Consider the example in (33). In this example, the internal accusative case competes against the external dative case. The internal case is accusative, as the predicate *wpuścić* 'to let' takes accusative objects. The external case is dative, as the predicate *ufać* 'to trust' takes dative objects. The relative pronoun *komu* 'REL.AN.DAT' appears in the external case: the dative. The relative pronoun is not marked in bold, just as the main clause, showing that the relative pronoun patterns with the main clause. The example adheres to the case scale, but the external case is (as the internal case) not allowed to surface when it wins the case competition. Therefore, the example is ungrammatical.

(33) *Jan ufa komu **-kolkwiek wpuścil do domu**.
Jan trust.3SG$_{[DAT]}$ REL.DAT.AN.SG ever let.3SG$_{[ACC]}$ to home
'Jan trusts whoever he let into the house.'
(Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

The example in (34) is identical to (33), except for that the relative pronoun appears in the internal less complex accusative case. This example is also ungrammatical: the internal case is less complex, and the internal case is not allowed to surface when it wins the case competition.

(34) *Jan ufa **kogo -kolkwiek wpuścil do domu**.
Jan trust.3SG$_{[DAT]}$ REL.ACC.AN.SG ever let.3SG$_{[ACC]}$ to home
'Jan trusts whoever he let into the house.'
(Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

The two examples in which the accusative and the dative compete are highlighted in Table 4.22. The light gray marking corresponds to (31), in which the internal dative wins over the external accusative, but the relative pronoun is not allowed to surface in the dative case (or in the losing accusative case as in (32)). The dark gray marking corresponds to (33), in which the external dative wins over the internal accusative, but the relative pronoun is not allowed to surface in the dative case (or in the losing accusative case as in (34)).

Table 4.22: Polish headless relatives (ACC — DAT)

INT \ EXT	[ACC]	[DAT]
[ACC]	ACC	*
[DAT]	*	DAT

In sum, Polish is an instance of a language that only allows for matching cases. When the internal and the external case differ in Polish, there is no way to form a grammatical headless relative construction.

4.6 Summary

In case competition in headless relatives two aspects play a role. The first one is which case wins the case competition. It is a crosslinguistically stable fact that this is determined by the case scale in (35), repeated from Chapter 2. A case more to the right on the scale wins over a case more to the left on the scale.

(35) NOM < ACC < DAT

This generates the pattern shown in Table 4.23. The left column shows the internal case between square brackets. The top row shows the external case between square brackets. The other cells indicate the case of the relative pronoun. When the dative wins over the accusative, the relative pronoun appears in the dative case. When the dative wins over the nominative, the relative pronoun appears in the nominative

case. When the accusative wins over the nominative, the relative pronoun appears in the accusative case.

Table 4.23: Relative pronoun follows case competition

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	DAT
[DAT]	DAT	DAT	DAT

The second aspect is whether the internal and the external case are allowed to surface when either of them wins the case competition. This differs across languages. There are four logical possibilities, listed in (36).

(36) Logically possibile language types

i. The 'non-matching' type: the internal and the external case are allowed to surface when either of them wins the case competition

ii. The 'non-matching — internal only' type: only the internal case is allowed to surface when it wins the case competition

iii. The 'non-matching — external only' type: only the external case is allowed to surface when it wins the case competition

iv. The 'matching' type: neither the internal case nor in the external case is allowed to surface when either of them wins the case competition

As far as I am aware, not all of these logical possibilities are attested in natural languages. I discuss the types one by one, and I give example when they are attested. In my description, I refer to the differ gray-marking in Table 4.24. The cells marked in light gray are the ones in which the internal case wins the case competition, the cells marked in dark gray are the ones in which the external case wins the case competition, and the unmarked cells are the ones in which the internal and external case match.

Gothic, Old High German and Classical Greek are examples of the 'non-

matching' type in (36i). In these languages, relative pronouns in the unmarked, light gray and dark gray cells are attested. Modern German is an example of the 'non-matching — internal-only' type in (36ii). In this language, relative pronouns in the unmarked and light gray cells are grammatical. To my knowledge, the 'non-matching — external-only' type in (36iii) is not attested. This would be a language in which relative pronouns in the unmarked and the dark gray cells are grammatical. Polish is an example of a language of the matching type in (36iv). In this language, relative pronoun in only in the unmarked cells are grammatical.

Table 4.24: Relative pronoun follows case competition

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	DAT
[DAT]	DAT	DAT	DAT

Figure 4.1 shows a diagram that generates the three attested patterns and not the unattested one. The diamonds stand for parameters that distinguish different types of languages. The texts along the arrows to the rectangles (and to a diamond) indicate how the different types of languages behave with respect to the parameters. The rectangles describe the form that the relative pronoun appears in. Below the rectangle I give examples of languages that are of this particular type.

The first parameter is whether or not a language allows for a mismatch between the internal and external case. If a language does not allow for a mismatch, the matching type of language (36iv) is generated. If a language allows for a mismatch between the internal and external case, the second parameter comes into play. This one is concerned with the case the relative pronoun is allowed to surface when it wins the case competition. Here I give two options: (1) it is allowed to surface in only the internal case or (2) it is allowed to surface in the internal and the external case.[8] If a language allows the internal case to surface when it wins the case com-

[8] I do not introduce the option of allowing the relative pronoun to surface only in the external case.

petition, the 'non-matching — internal-only' type is generated. If a language allows the internal and the external case to surface, the 'non-matching' type is generated.[9]

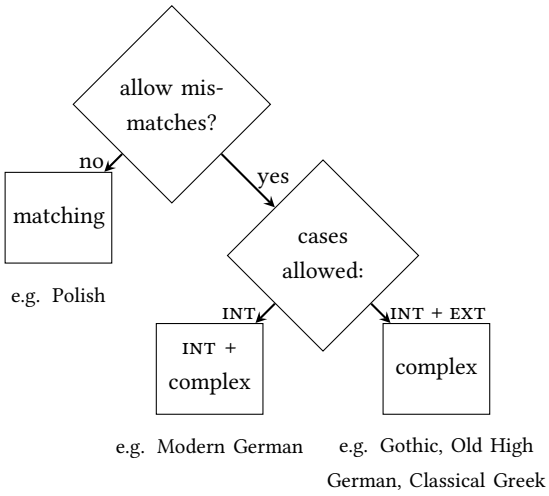


Figure 4.1: Attested patterns in headless relatives with case competition

The main focus of Chapter 5 is the linguistic counterpart of the second parameter. I show with general properties of relative clauses how the difference between the 'non-matching' and the 'non-matching — internal-only' type can be modeled, and how the exclusion of the 'non-matching — external-only' type follows from these particular properties. I also introduce a linguistic counterpart for the first parameter, which distinguishes matching from non-matching languages.

The reason for this is that this pattern is not attested crosslinguistically. If a language like this appears, this option could in principle be added. However, I predict that it will not appear. In Chapter 5, I show how it follows from general properties of relative clauses that this type of language is excluded.

[9]The matching type could also have been generated with the second parameter. The text along the arrow would have been *none*. I choose to not do this, because in Chapter 5 I propose separate mechanisms for each of the parameters in Figure 4.1. The first one distinguishes matching languages from non-matching (i.e. 'non-matching' and internal-only) languages, and the second one distinguishes 'non-matching' from internal-only languages.

4.7 Aside: languages without case competition

In this chapter so far, I discussed languages that show case competition. There are also languages that do not show any case competition. This section discusses these languages, and gives a typology of headless relatives.

In languages without case competition, the internal and external case do not compete to show their case on the relative pronoun. It is irrelevant how the two cases relate to each other on the case scale. Instead, it is fixed per language whether the relative pronoun appears in the internal or the external case. Logically, there are two possible languages without case competition: one that lets the relative pronoun appear in the internal case, and one that lets the relative pronoun appear in the external case.

Table 4.25 shows the pattern of a language in which the relative pronoun always appears in the internal case. In the second row, the internal case is nominative and the external case is nominative, accusative or dative. The relative pronoun appears in the nominative. It is irrelevant here that the nominative is less complex than the accusative and the dative, because there is no case competition taking place. The third row shows that the relative pronoun always appears in the accusative when the internal case is the accusative, and the fourth row shows the same for the dative. To my knowledge, this type is not attested in any natural language.

Table 4.25: Always internal case

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	NOM	NOM
[ACC]	ACC	ACC	ACC
[DAT]	DAT	DAT	DAT

Table 4.26 shows the pattern of a language in which the relative pronoun always appears in the external case. In the second column, the external case is nominative and the internal case is nominative, accusative or dative. The relative pronoun appears in the nominative. It is irrelevant here that the nominative is less com-

plex than the accusative and the dative, because there is no case competition taking place. The third column shows that the relative pronoun always appears in the accusative when the external case is the accusative, and the fourth column shows the same for the dative.

Table 4.26: Always external case

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	NOM	ACC	DAT
[DAT]	NOM	ACC	DAT

Section 4.7.1 discusses two languages that let their relative pronouns in headless relatives always surface in the external case: Old English and Modern Greek. In Section 4.7.2 I extend the typology from Section 4.6 by adding the languages without case competition. As I briefly mentioned, I do not know of any language, whether extinct or alive, that lets the relative pronoun always surface in the internal case. I do not offer an explanation for why it is not attested, and I include this possibility in my typology.

4.7.1 Always external case

In this section I discuss two languages in which the relative pronoun always appears in the external case. I show that these languages do not show any case competition. In other words, these languages are of the type shown in Table 4.26 and not of the type I discussed in Section 4.4 (or of the one in Section 4.2).

Table 4.27: Always external case (repeated)

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	NOM	ACC	DAT
[DAT]	NOM	ACC	DAT

Two example of languages that shows this pattern are Old English and Modern Greek. In this section I discuss the Old English data with examples from Harbert (1983). The Modern Greek data I discuss is taken from Daskalaki (2011). For all examples holds that I made the glosses more detailed, and I added and modified translations.

I start with Old English. I give an example in which the external case is more complex than the internal case and the relative pronoun appears in the most complex external case.

Consider the example in (37). The internal case is nominative, as the predicate *gegyltan* 'to sin' takes nominative subjects. The external case is dative, as the predicate *for-gifan* 'to forgive' takes dative objects. The relative pronoun *ðam* 'REL.DAT.PL' appears in the external case: the dative. The relative pronoun is not marked in bold, unlike the relative clause, showing that the relative pronoun patterns with the main clause.

(37) ðæt is, ðæt man for-gife, ðam **ðe wið hine**
that is that one forgive.SUBJ.SG$_{[DAT]}$ REL.DAT.PL COMP against 3SG.M.ACC
gegylte
sin.3SG$_{[NOM]}$
'that is, that one$_2$ forgive him$_1$, who sins against him$_2$'
(Old English, adapted from Harbert 1983: 549)

This example is compatible with three patterns. First, Old English could be a case competition language that only allows the external case to surface. I repeat Table 4.16 from Section 4.4 as Table 4.28, and I mark the cell that corresponds to example

(37) in gray.

Table 4.28: Old English headless relatives possibility 1

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

Second, Old English could be a case competition language that allows the internal case and the external case to surface. I repeat Table 4.5 from Section 4.2 as Table 4.29, and I mark the cell that corresponds to example (37) in gray.

Table 4.29: Old English headless relatives possibility 2

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	DAT
[DAT]	DAT	DAT	DAT

Third, Old English could be a language without case competition that lets the relative pronoun appear in the external case. I repeat Table 4.27 from the beginning of this section as Table 4.30, and I mark the cell that corresponds to example (37) in gray.

Table 4.30: Old English headless relatives possibility 3

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	NOM	ACC	DAT
[DAT]	NOM	ACC	DAT

What sets Table 4.28, Table 4.29 and Table 4.30 apart is the bottom-left corner of the table. These are situations in which the internal case is more complex than the external case. In Table 4.28 the winning case is not allowed to surface, and there is no grammatical headless relative possible. If this is the pattern that Old English shows, then it would be a language with case competition that only allows the external case to surface, i.e. it would be of the type of Section 4.4 I claimed did not exist. In Table 4.29 and in Table 4.30 there is a relative pronoun that can surface, but the case of the relative pronouns differs. In Table 4.29, the relative pronoun surfaces in the most complex case that wins the case competition: the internal case. In Table 4.30, there is no case competition taking place, and the relative pronoun surfaces in the external case.

In the example that follows I show that Old English is of the type in Table 4.30. I give an example in which the internal case is more complex than the external one. Nevertheless, the relative pronoun surfaces in the less complex external case. Old English is namely a language without case competition that lets the relative pronoun surface in the external case.

Consider the example in (38). The internal case is dative, as the preposition *onuppan* 'upon' takes dative objects. The external case is accusative, as the predicate *tōbrȳsan* 'to pulversize' takes accusative objects. The relative pronoun *ðone* 'REL.SG.ACC' appears in the external case: the accusative. The relative pronoun appears in the external case, although it is the least complex case of the two. The example is grammatical, because Old English does not show case competition, so the case scale is irrelevant. As long as the relative pronoun appears in the external case, the headless relative is grammatical.

(38) he tobryst ðone **ðe** **he onuppan fylð**
it pulverizes$_{[ACC]}$ REL.SG.ACC COMP it upon$_{[DAT]}$ falls
'It pulverizes him whom it falls upon.'
(Old English, adapted from Harbert 1983: 550)

This example shows that Old English is neither an instance of the pattern in Section 4.4, in which only the external case is allowed to surface, nor is it an instance of the pattern in Section 4.2, in which the internal case and external case are allowed to surface. Instead, as illustrated by Table 4.31, the language does not have any case competition. The relative pronoun appears in the external case: the external case can be the most complex case, illustrated by the example in (37), marked here in light gray, or it can be the least complex case, illustrated by the example in (38), marked here in dark gray.

Table 4.31: Summary of Old English headless relatives

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	NOM	ACC	DAT
[DAT]	NOM	ACC	DAT

I do not discuss more examples from Old English than I did until now. This does not change anything about the point I am making here: the only kind of system that is compatible with the examples given is the one in which the relative pronoun always appears in the external case.

The same pattern appears in Modern Greek. The only difference is that Modern Greek has the genitive, and not the dative. I start again with an example in which the external case is more complex than the internal case and the relative pronoun appears in the most complex external case.

Consider the example in (39). The internal case is nominative, as the predicate *voíθisó* 'to help' takes nominative subjects. The external case is accusative, as the predicate *efχarístisó* 'to thank' takes accusative objects. The relative pronoun *ópjus*

'REL.PL.M.ACC' appears in the external case: the accusative. The relative pronoun is not marked in bold, unlike the relative clause, showing that the relative pronoun patterns with the main clause.

(39) Efχarístisa ópjus **me** **voíθisan**.
thank.PST.3PL$_{[ACC]}$ REL.PL.M.ACC CL.1SG.ACC help.PST.3PL$_{[NOM]}$
'I thanked whoever helped me.'
(Modern Greek, adapted from Daskalaki 2011: 80)

This example is compatible with three patterns. First, Modern Greek could be a case competition language that only allows the external case to surface. I repeat Table 4.16 from Section 4.4 as Table 4.32, and I mark the cell that corresponds to example (39) in gray.

Table 4.32: Modern Greek headless relatives possibility 1

INT \ EXT	[NOM]	[ACC]	[GEN]
[NOM]	NOM	ACC	GEN
[ACC]	*	ACC	GEN
[GEN]	*	*	DAT

Second, Modern Greek could be a case competition language that allows the internal case and external case to surface. I repeat Table 4.5 from Section 4.2 as Table 4.33, and I mark the cell that corresponds to example (39) in gray.

Table 4.33: Modern Greek headless relatives possibility 2

INT \ EXT	[NOM]	[ACC]	[GEN]
[NOM]	NOM	ACC	GEN
[ACC]	ACC	ACC	GEN
[GEN]	GEN	GEN	DAT

Third, Modern Greek could be a language without case competition that lets the relative pronoun appear in the external case. I repeat Table 4.27 from the beginning of this section as Table 4.34, and I mark the cell that corresponds to example (39) in gray.

Table 4.34: Modern Greek headless relatives possibility 3

INT \ EXT	[NOM]	[ACC]	[GEN]
[NOM]	NOM	ACC	GEN
[ACC]	NOM	ACC	GEN
[GEN]	NOM	ACC	DAT

What sets Table 4.32, Table 4.33 and Table 4.34 apart is the bottom-left corner of the table. These are cases in which the internal case is more complex than the external case. In Table 4.32 the winning case is not allowed to surface, and there is no grammatical headless relative possible. If this is the pattern that Modern Greek shows, then it would be a language with case competition that only allows the external case to surface, i.e. it would be of the type of Section 4.4 I claimed did not exist. In Table 4.33 and in Table 4.34 there is a relative pronoun that can surface, but the case of the relative pronouns differs. In Table 4.33, the relative pronoun surfaces in the most complex case that wins the case competition: the internal case. In Table 4.34, there is no case competition taking place, and the relative pronoun surfaces in the external case.

In the example that follows I show that Modern Greek is of the type in Table 4.34. I give an example in which the internal case is more complex than the external one. Nevertheless, the relative pronoun surfaces in the less complex external case. Modern Greek is namely a language without case competition that lets the relative pronoun surface in the external case.

Consider the example in (40). The internal case is accusative, as the predicate *irθó* 'to invite' takes accusative objects. The external case is nominative, as the predicate *kálesó* 'to come' takes nominative subjects. The relative pronoun *ópji* 'REL.PL.M.NOM' appears in the external case: the nominative. The relative pronoun

appears in the external case, although it is the least complex case of the two. The example is grammatical, because Modern Greek does not show case competition, so the case scale is irrelevant. As long as the relative pronoun appears in the external case, the headless relative is grammatical.

(40) Irθan ópji **káleses**.
come.PST.3PL$_{[NOM]}$ REL.PL.M.NOM invite.PST.2SG$_{[ACC]}$
'Whoever you invited came.'
(Modern Greek, adapted from Daskalaki 2011: 80)

The example in (41) is identical to (40), except for that the relative pronoun appears in the internal more complex case. This example is ungrammatical: the relative pronoun does not appear in the external case. The fact that the internal case is more complex is irrelevant.

(41) *Irθan **ópjus** **káleses**.
come.PST.3PL$_{[NOM]}$ REL.PL.M.ACC invite.PST.2SG$_{[ACC]}$
'Whoever you invited came.'
(Modern Greek, adapted from Daskalaki 2011: 79)

This example shows that Modern Greek is neither an instance of the pattern in Section 4.4, in which only the external case is allowed to surface, nor is it an instance of the pattern in Section 4.2, in which the internal case and external case are allowed to surface. Instead, as illustrated by Table 4.35, the language does not have any case competition. The relative pronoun appears in the external case: the external case can be the most complex case, illustrated by the example in (39), marked here in light gray, or it can be the least complex case, illustrated by the example in (40), marked here in dark gray.

Table 4.35: Summary of Modern Greek headless relatives

INT \ EXT	[NOM]	[ACC]	[GEN]
[NOM]	NOM	ACC	GEN
[ACC]	NOM	ACC	GEN
[GEN]	NOM	ACC	DAT

There is something more to be said about the situation in Modern Greek. When the internal case is genitive instead of accusative, a clitic is added to the sentence to make it grammatical.

Consider the example in (42). The internal case is genitive, as the predicate *eðósó* 'to give' takes genitive objects. The external case is accusative, as the predicate *efχarístisó* 'to thank' takes nominative subjects. The relative pronoun *ópjon* 'REL.PL.M.NOM' appears in the external case: the nominative. The relative pronoun appears in the external case, although it is the least complex case of the two. The example is grammatical, because Modern Greek does not show case competition, so the case scale is irrelevant. As long as the relative pronoun appears in the external case, the headless relative is grammatical. In addition, the relative clause obligatorily contains the genitive clitic *tus* 'CL.3PL.GEN'.[10]

(42) Me efχarístisan ópji **tus** **íχa**
CL.1SG.ACC thank.PST.3PL$_{[NOM]}$ REL.PL.M.NOM CL.3PL.GEN have.PST.1SG
ðósi **leftá**.
give.PTCP$_{[GEN]}$ money
'Whoever I had given money to, thanked me.'
(Modern Greek, adapted from Daskalaki 2011: 80)

This once again confirms the picture of Modern Greek always letting the relative

[10] In Modern German, it is possible to insert a light head to resolve a situation with a more complex external case. However, then the relative pronoun has to change as well (from a WH-pronoun into a D-pronoun). I assume this is a different construction, and the Modern Greek one with the clitic inserted is not.

pronoun surface in the external case. The internal case is taken care of by the clitic, which is independent of the relative clause construction.

I do not discuss more examples from Modern Greek than I did until now. This does not change anything about the point I am making here: the only kind of system that is compatible with the examples given is the one in the relative pronoun always appears in the external case. For more examples that illustrate this pattern, I refer the reader to Daskalaki (2011: 79-80) and Spyropoulos (2011: 31-34).[11]

In sum, Old English and Modern Greek are languages without case competition in their headless relatives. The relative pronoun always appears in the external case.

4.7.2 A typology of headless relatives

This section provides a typological overview of headless relatives. First, I describe the difference between the patterns of languages with and without case competition. Second, I include the parameters of non-case competition languages in the diagram I introduced in Section 4.6. Third, I give an overview of all logically possible patterns, I show how the diagram generates the attested ones, and I discuss the non-attested patterns.

[11]When the relative clause is dislocated, both the internal and the external case can be used. In (ia), the internal case is accusative, and the external case is nominative. Normally the relative pronoun should appear in the external case, so the nominative. However, the accusative is also grammatical here. Spyropoulos (2011) argues that in these left-dislocated structure, there is a silent *pro* or a clitic (*ton* in (ib)) that satisfies the external case. This allows the relative pronoun to take the internal case. This makes this construction more of a correlative.

(i) a. ópjos/ ópjon epiléksume θa pári to vravío
REL.SG.M.NOM/REL.SG.M.ACC choose.1PL$_{[ACC]}$ FUT take.3SG$_{[NOM]}$ the price.ACC

'Whoever we may choose, he will get the price.'

b. ópjos/ ópjon me aɣapá ton aɣapó
REL.SG.M.NOM/REL.SG.M.ACC CL.1SG.ACC love.3SG$_{[NOM]}$ CL.3SG.M.ACC love.1SG$_{[ACC]}$
'Whoever loves me, I love him.'

In Section 4.2 to 4.5, I discussed four different patterns. These four patterns are all based on a single table, shown in Table 4.36 (repeated from Section 4.2). The cases in the cells are the ones that win the case competition. The variation between the four patterns lies in whether all cells in the table are grammatical, or whether some of them are not. In none of the four patterns in Section 4.2 to 4.5, the cells are filled by a case different from what is given in 4.36.

Table 4.36: Relative pronoun follows case competition

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	ACC	ACC	DAT
[DAT]	DAT	DAT	DAT

In this section I introduced two different ways of filling out the table. The first one is the one in which the relative pronoun appears in the internal case, as in Table 4.37 (repeated from Table 4.26).

Table 4.37: Relative pronoun in internal case

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	NOM	NOM
[ACC]	ACC	ACC	ACC
[DAT]	DAT	DAT	DAT

The second one is the one in which the relative pronoun appears in the external case, as in Table 4.38 (repeated from Table 4.26).

Table 4.38: Relative pronoun in external case

INT \ EXT	[NOM]	[ACC]	[DAT]
[NOM]	NOM	ACC	DAT
[ACC]	NOM	ACC	DAT
[DAT]	NOM	ACC	DAT

I incorporate the parameters that generates these different patterns into the diagram from Section 4.6 in Figure 4.2. I added two different parameters. First, a language either has case competition or it does not at at 'case competition?'. If the language has case competition, the pattern shown in Table 4.36 is generated. The two parameters that follow then ('INT as winner?' and 'EXT as winner?') are described in Section 4.6. If the language does not have case competition, the second parameter is whether the language lets its relative pronouns appear either in the internal case or in the external case at at 'INT/EXT?'. If the language lets its relative pronouns appear in the internal case, the pattern shown in Table 4.37 is generated. I am not aware of any language that lets its relative pronoun appear in the internal case.[12] If the language lets its relative pronouns appear in the external case, the pattern shown in Table 4.38 is generated. Old English and Modern Greek are two examples of languages that let their relative pronouns appear in the external case.

[12]In this dissertation I do not offer an explanation for why this type of example should be absent. Future research should determine whether this pattern is actually attested, or whether this option should be excluded and how.

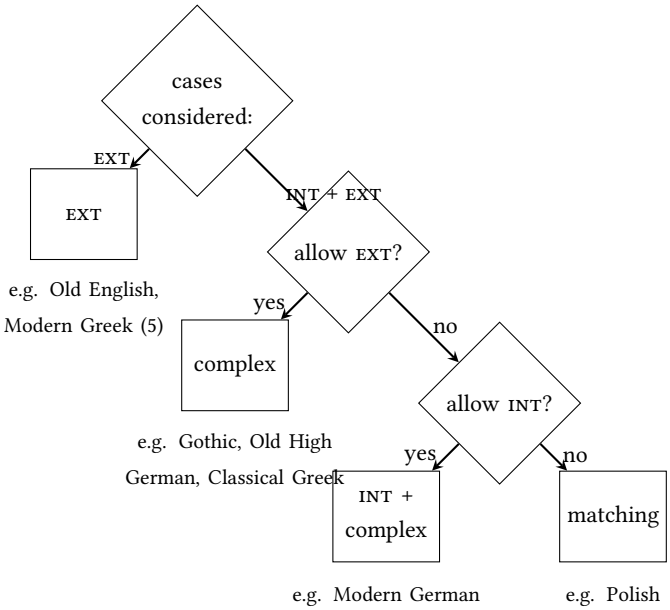


Figure 4.2: Attested patterns in headless relatives

In Table 4.39, I give all logically possible patterns for headless relatives. The top row sketches two different situations: one in which the internal case is the most complex ([INT]>[EXT]) and one in which the external case is the most complex ([EXT]>[INT]). The second row refers to the case which the relative pronoun appears in, which can be either the internal case (INT) or the external case (EXT).

When the internal case and the external case differ (which holds for both options the top row indicates), the relative pronoun cannot appear in both the internal and external case at the same time. This excluded the possibility of having a checkmark at both INT and EXT in the same situation. This leaves the possibility to have a checkmark at INT, at EXT or at none of them. This gives $3 \times 3 = 9$ logically possible options, which are listen in Table 4.39.

Table 4.39: Possible patterns for headless relatives

	[INT]>[EXT]		[EXT]>[INT]		
	INT	EXT	INT	EXT	language
1	✓	*	✓	*	n.a.
2	✓	*	*	✓	e.g. Old High German
3	✓	*	*	*	e.g. Modern German
4	*	✓	✓	*	n.a.
5	*	✓	*	✓	e.g. Old English
6	*	✓	*	*	n.a.
7	*	*	✓	*	n.a.
8	*	*	*	✓	n.a.
9	*	*	*	*	e.g. Polish

In what follows I show how Figure 4.2 generates of all logically possible patterns only the attested patterns (except for the one in which the relative pronoun always takes the internal case).

I start with the leftmost pattern in Figure 4.2, which is number 1 in Table 4.39. In this pattern, there is no case competition, and the relative pronoun surfaces in the internal case. As I mentioned earlier, I am not aware of a language that exemplified this pattern and future research should tell whether this option is attested or whether it should be excluded. The second pattern in Figure 4.2 is number 5 in Table 4.39. In this pattern, there is no case competition, and the relative pronoun surfaces in the external case. This pattern is exemplified by Old English and Modern Greek. The third pattern in Figure 4.2 is number 9 in Table 4.39. In this pattern, there is case competition, and the relative pronoun is only allowed to surface in the case when there is a tie, i.e. when the internal and external case match. This pattern is exemplified by Polish. The fourth pattern in Figure 4.2 is number 3 in Table 4.39. In this pattern, there is case competition, and the relative pronoun is only allowed to surface in the internal case when it wins the case competition. This pattern is

exemplified by Modern German. The fifth and last pattern in Figure 4.2 is number 2 in Table 4.39. In this pattern, there is case competition, and the relative pronoun is allowed to surface in the internal case and the external case when either of them wins the case competition. This pattern is exemplified by Old High German, Gothic and Classical Greek.

This leaves four patterns that are logically possible but not attested in languages: pattern numbers 4, 6, 7 and 8 in Table 4.39. These patterns cannot be generated by the diagram in Figure 4.2. That means that they are not a result of any of the possible parameter settings in the diagram.

In the pattern number 4, the relative pronoun surfaces in the external case when the internal case is the most complex, and the relative pronoun surfaces in the internal case when the external case is the most complex. In other words, the relative pronoun appears in the losing case in the case competition. Pattern number 6 and 7 are both subsets of pattern number 4 in the sense that they allow part of what number 4 allows. In the pattern number 6, the relative pronoun surfaces in the external case when the internal case is the most complex, and there is no grammatical option when the external case is the most complex. Patterns number 7 is the opposite of pattern number 6: there is no grammatical option when the external case is the most complex, and the relative pronoun surfaces in the internal case when the external case is the most complex. The absence of these three patterns across languages provides further evidence for the case scale in Chapter 2.

In the pattern number 8, the relative pronoun is only allowed to surface in the external case when it wins the case competition. This pattern is excluded as a result of the relative ordering of 'INT as a winner?' and 'EXT as a winner?' in the diagram in Figure 4.2. The next chapter, Chapter 3, discusses the linguistic counterpart of this ordering.

Chapter 5

Base comparison

In Chapter 4 I introduced two descriptive parameters that generate the attested languages, as shown in Figure 5.1. The first parameter concerns whether the external case is allowed to surface when it wins the case competition (allow EXT?). This parameter distinguishes between non-matching languages (e.g. Old High German) on the one hand and internal-only languages (e.g. Modern German) and matching languages (e.g. Polish) on the other hand. The second parameter concerns whether the internal case is allowed to surface when it wins the case competition (allow INT?). This parameter distinguishes between internal-only languages (e.g. as Modern German) on the one hand and non-matching languages (e.g. Polish) on the other hand.

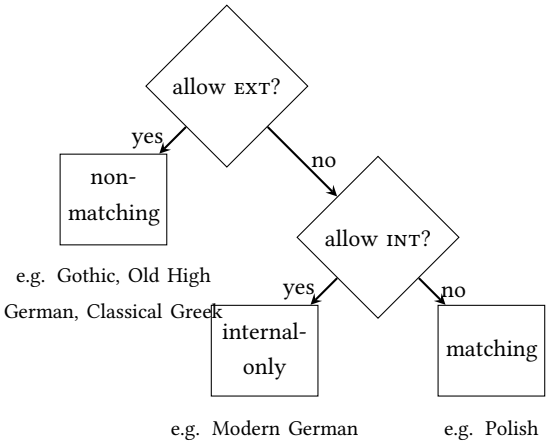


Figure 5.1: Two descriptive parameters generate three language types

The goal of this chapter is to give the theoretical counterparts of these descriptive parameters. Goal: something that can be observed independently.

This chapter is structured as follows.

5.1 The basic idea

The goal of this chapter is to give a theoretical account for the crosslinguistic variation found in headless relatives. It should derive how languages differ in whether they allow the internal case and the external case to surface when either of them wins the case competition. In other words, the chapter gives the theoretical counterparts of the descriptive parameters given in Figure 5.1. This section gives the basic idea behind my proposal. Throughout the rest of the chapter I motivate my proposal, and I illustrate it with examples. Before I can describe the theoretical counterparts, I need to introduce some concepts: the internal element and external element and the base of these elements.

I start with the internal and external element. In the thesis so far, I stated that the relative pronoun appears in the case that wins the case competition. I have not been explicit about where the case competition takes place. In order to avoid introducing theoretical machinery just for case competition situations, I assume it takes place

in syntax. I propose that at some point in the derivation headless relatives have an internal and an external element.[1] The internal element bears the internal case, and the external element bears the external case. At the end of the derivation, the element bearing the more complex case surfaces as the relative pronoun, at least if the element is allowed to surface.

Now I turn to the so-called base of the internal and external element. The internal and the external element do not only consist of case features. They also contain other features. These other features have to do with referentiality, number, gender, definiteness, etc. I call the part of the internal and external element that corresponds to these features the base part. I refer to the part that corresponds to the case features as the case part.

Table 5.1 summarizes what I just laid out. At some point in the derivation, headless relatives contain an internal and an external element. The internal element consists of an internal base part and an internal case part. The external element consists of an external base part and an external case part. There are three options for the relative pronoun. First, it can appear as the internal element: as the internal base plus the internal case. Second, it can appear as the external element: as the external base plus the external case. Third, there is no grammatical case for the relative pronoun.

Table 5.1: Components of the internal and external element

INT element		EXT element		REL pronoun	
base_{INT}	case_{INT}	base_{EXT}	case_{EXT}	base_{INT}	case_{INT}
				base_{EXT}	case_{EXT}
				*	

To make this concrete, consider the example in (1), repeated from Chapter 4. In this example, the internal nominative case competes against the external nominative case. The relative pronoun surfaces in the nominative case.

[1] I am far from the only one that assumes this. Himmelreich, Hanink, but also Bresnan/Grimshaw, Groos/Riemsdijk, Harbert..

(1) quham dher chisendit scolda
come.PST.3SG$_{[NOM]}$ REL.SG.M.NOM send.PST.PTCP$_{[NOM]}$ should.PST.3SG
uuerdhan
become.INF
'the one, who should have been sent, came' (Old High German, Isid. 35:5)

The situation is schematically shown in Table 5.2. In my proposal, the internal element for this sentence is *dher* and the external element is *dher* too. In Section 5.2 I motivate the featural content and phonological form of the internal and external element. The base part of *dher* is the morpheme *dh*, and the case part of *dher* is the morpheme *r*.[2] The relative pronoun in this sentence is *dher*. It is impossible to see whether this is the internal or the external element, because they are identical.

Table 5.2: The internal and external element of (1)

INT element		EXT element		EXT element	
base$_{INT}$	case$_{INT}$	base$_{EXT}$	case$_{EXT}$	base$_{REL}$	case$_{REL}$
dh	er	dh	er	dh	er

Now I have introduced the concepts internal and external element and their bases, I turn to the basic idea behind my proposal. The goal is to give a theoretical account that derives whether a language allows the internal or external case to surface when it wins the case competition or whether it does not. I propose that this follows from the comparison between the internal and external base within a language. In the comparison, I rely on containment, just as I did in Chapter 3 when comparing cases. I went with the following reasoning. A more complex case wins over a less complex case because the former contains all features that the latter contains. Concretely, the dative wins over the accusative because the dative contains all features that the accusative contains, the dative wins over the nominative

[2]This is a simplification of the reality. The morpheme *er* realizes besides case features also non-case features, such as gender and number. This simplification can be made, because the non-case features that are present in the internal element are also present in the external element.

because the dative contains all features that the nominative contains, and the accusative wins over the nominative because the accusative contains all features that the nominative contains. I apply the same reasoning in comparing the internal and external base. When the internal base contains the features of the external base, the internal element is allowed to surface. When the external base contains the features of the internal base, the external element is allowed to surface.

I illustrate this proposal by showing how this plays out in three different languages. Table 5.3 gives an overview. In Old High German, the internal base contains the external base, and the external base contains the internal base. Therefore, Old High German allows for matching cases, it allows the internal case to win, and it allows the external case to win. In Modern German, the internal base contains the external base, but the external base does not contain the internal base. Therefore, Modern German allows for matching cases, and it allows the internal case to win. In Polish, the internal base does not contain the external base, and the external base does not contain the internal base. Still, Polish only allows for matching cases.[3]

Table 5.3: Overview of languages

	INT = EXT	INT > EXT	INT < EXT
Old High German	✓	✓	✓
Modern German	✓	✓	*
Polish	✓	*	*

In what follows I discuss these three situations in the three languages. In the first situation (INT = EXT), the internal and external case match. In the second situation (INT > EXT), the internal case is more complex than the external case. In the third situation (INT < EXT), the internal case is more complex than the external case.

Table 5.4 shows the three situation for Old High German. In Old High German, the internal base consists of features that correspond to the morpheme *dh*, and so does the external base. The nominative case consists of features that correspond to

[3] Later I explain how this is possible.

the morpheme *er*, and the accusative case consists of features that correspond to the morpheme *en*. I motivate this in Section 5.3.

The first row shows the situation in which the internal nominative case matches the external nominative case (INT = EXT). The internal case part, which corresponds to the nominative *er* morpheme, contains the external case part, which corresponds to the nominative *er* morpheme. The internal base part, which corresponds to the morpheme *dh*, contains the external base part, which corresponds to the morpheme *dh* too. The relative pronoun that surfaces is the internal element with its internal base and its internal case: *dher*.

The second row shows the situation in which internal accusative case is more complex than the external nominative case (INT > EXT). The internal case part, which corresponds to the accusative *en* morpheme, contains the external case part, which corresponds to the nominative *er* morpheme. The internal base part, which corresponds to the morpheme *dh*, contains the external base part, which corresponds to the morpheme *dh* too. The relative pronoun that surfaces is the internal element with its internal base and its internal case: *dher*.

The third row shows the situation in which external accusative case is more complex than the internal nominative case (INT < EXT). The external case part, which corresponds to the accusative *en* morpheme, contains the internal case part, which corresponds to the nominative *er* morpheme. The external base part, which corresponds to the morpheme *dh*, contains the internal base part, which corresponds to the morpheme *dh* too. The relative pronoun that surfaces is the external element with its external base and its external case: *dhen*.

Table 5.4: Base comparison in Old High German

	INT element		EXT element		REL pronoun	
	base_{INT}	case_{INT}	base_{EXT}	case_{EXT}	base_{REL}	case_{REL}
INT = EXT	dhe	r	dhe	r	dhe	r
INT > EXT	dhe	n	dhe	r	dhe	n
INT < EXT	dhe	r	dhe	n	dhe	n

Table 5.5 shows the three situation for Modern German. In Modern German, the internal base consists of features that correspond to the morpheme *we*. The external base does not consist of any features, so there is no morpheme that corresponds to it.[4] The nominative case consists of features that correspond to the morpheme *r*, and the accusative case consists of features that correspond to the morpheme *n*. I motivate this in Section 5.3.

The first row shows the situation in which the internal nominative case matches the external nominative case (INT = EXT). The internal case part, which corresponds to the nominative *r* morpheme, contains the external case part, which corresponds to the nominative *r* morpheme. The internal base part, which corresponds to the morpheme *we*, contains the external base part, because there is no morpheme. The relative pronoun that surfaces is the internal element with its internal base and its internal case: *wer*.

The second row shows the situation in which internal accusative case is more complex than the external nominative case (INT > EXT). The internal case part, which corresponds to the accusative *n* morpheme, contains the external case part, which corresponds to the nominative *r* morpheme. The internal base part, which corresponds to the morpheme *we*, contains the external base part, because there is no morpheme. The relative pronoun that surfaces is the internal element with its internal base and its internal case: *wer*.

The third row shows the situation in which external accusative case is more complex than the internal nominative case (INT < EXT). The external case part, which corresponds to the accusative *n* morpheme, contains the internal case part, which corresponds to the nominative *r* morpheme. The external base part, which is empty, does not contain the internal base part, which corresponds to the morpheme *we*. The winner of the case competition is the external case, but the external base does not contain the internal base, so there is no grammatical relative pronoun.

[4] Actually, not entirely, see footnote 2.

Table 5.5: Base comparison in Modern German

	INT element		EXT element		REL pronoun	
	base_{INT}	case_{INT}	base_{EXT}	case_{EXT}	base_{REL}	case_{REL}
INT = EXT	we	r		r	we	r
INT > EXT	we	n		r	we	n
INT < EXT	we	r		n	*	

Table 5.6 shows the three situation for Polish. In Polish, the internal base consists of features that correspond to the morpheme *ko*. The external base consists of features that correspond to the morpheme *te*. The accusative case consists of features that correspond to the morpheme *go*, and the dative case consists of features that correspond to the morpheme *mu*. I motivate this in Section 5.4.

The first row shows the situation in which the internal nominative case matches the external nominative case (INT = EXT). The internal case part, which corresponds to the accusative *go* morpheme, contains the external case part, which corresponds to the accusative *go* morpheme. The internal base part, which corresponds to the morpheme *ko*, does not contain the internal base part, which corresponds to the morpheme *te*. Still, the relative pronoun that surfaces is the internal element with its internal base and its internal case: *kogo*.[5]

The second row shows the situation in which internal dative case is more complex than the external accusative case (INT > EXT). The internal case part, which corresponds to the dative *mu* morpheme, contains the external case part, which corresponds to the accusative *go* morpheme. The internal base part, which corresponds to the morpheme *ko*, does not contain the internal base part, which corresponds to the morpheme *te*. The winner of the case competition is the internal case, but the internal base does not contain the external base, so there is no grammatical relative pronoun.

The third row shows the situation in which external dative case is more complex than the internal accusative case (INT > EXT). The external case part, which corre-

[5] This is unexpected, and I talk about that later.

sponds to the dative *mu* morpheme, contains the internal case part, which corresponds to the accusative *go* morpheme. The external base part, which corresponds to the morpheme *te*, does not contain the internal base part, which corresponds to the morpheme *ko*. The winner of the case competition is the external case, but the external base does not contain the internal base, so there is no grammatical relative pronoun.

Table 5.6: Base comparison in Polish

	INT element		EXT element		REL pronoun	
	base_{INT}	case_{INT}	base_{EXT}	case_{EXT}	base_{REL}	case_{REL}
INT = EXT	ko	go	te	go	ko	go
INT > EXT	ko	mu	te	go	*	
INT < EXT	ko	go	te	mu	*	

Taking this all together, there are two competitions taking place in headless relatives: case competition and base competition. Case competition determines which case wins and base competition determines whether this case is allowed to surface. I put this in the metaphor with the committee that I introduced in Section 4.1. The committee learns who wins the case competition, and it can either approve this case or not approve it. The information that the committee uses for its decision is the comparison between the internal and the external base. The committee approves the winning case if the base associated with it contains the base associated with the losing case.

In sum, a relative pronoun can surface in the internal case if the internal case and base contains the external case and base. It works the same the other way around: a relative pronoun can surface in the external case if the external case and base contain the internal case and base. Notice that there is a crucial difference between comparing the cases and comparing the bases. The internal and external case can differ from sentence to sentence. The internal and external base remain stable throughout the language.

5.2 Deriving the non-matching type

The non-matching type of language allows for matching cases, it allows the internal case to win, and it allows the external case to win. I have been describing Old High German as an example of this type. In this section, I show what it is about Old High German that causes the language to be of the non-matching type. I propose that the crucial factor is that Old High German has a syncretic internal and external base. Since they are syncretic, the features in the internal base contain the features in the external base, and the features in the external base contain just as well the features in the internal base. The internal base containing the external base causes the internal case to be allowed to surface when it wins the case competition. The external base containing the internal base causes the external case to be allowed to surface when it wins the case competition.

This section is structured as follows. First, I argue that Old High German headless relatives are derived from relative clauses headed by a light head, i.e. light-headed relatives. In this analysis, the internal element is what can descriptively be called the relative pronoun, and the external element is what can descriptively be called the light head. The internal element surfaces as the relative pronoun when the internal case is more complex, and the external element surfaces as the relative pronoun when the external case is more complex. In this section, I decompose the internal and external element, and I show which morpheme corresponds to which features. Both elements consist of two morphemes: a base part and a case part. I go through the examples in Table 5.7, showing per situation how the base and case parts syntactically contain the other base and case parts. This containment is crucial. When the internal base contains the external base, the internal case is allowed to surface when it is more complex, and when the external base contains the internal base, the external case is allowed to surface when it is more complex.

Table 5.7: Base comparison in Old High German

	INT element		EXT element		REL pronoun	
	base_{INT}	case_{INT}	base_{EXT}	case_{EXT}	base_{REL}	case_{REL}
INT = EXT	dhe	r	dhe	r	dhe	r
INT > EXT	dhe	n	dhe	r	dhe	n
INT < EXT	dhe	r	dhe	n	dhe	n

I propose headless relatives are derived from light-headed relatives (Fuß and Grewendorf 2014; Hanink 2018 argue the same but for Modern German[6]). In a light-headed relative, the head of a relative is not a full noun phrase, but it is a bit 'lighter': it only consists of a demonstrative. Consider the light-headed relative in (2). *Thér* 'DEM.SG.M.NOM' is the head of the relative clause, which is the external element. *Then* 'REL.SG.M.ACC' is the relative pronoun of the relative clause, which is the internal element.

(2) eno nist thiz thér then ir
now not be.3SG DEM.SG.N.NOM DEM.SG.M.NOM REL.SG.M.ACC 2PL.NOM
suochet zi arslahanne?
seek.2PL to kill.INF.SG.DAT
'Isn't this now the one, who you seek to kill?'

The difference between a light-headed relative and a headless relative is that in headless relatives, either the internal or the external is absent. The absent element is the one that has the least complex case. This shows the presence of two elements in Old High German is optional.[7] In Old High German, there are three possible

[6] A difference with Modern German is that one of the elements can only be absent when the cases match. In Section 6 I return to the point why Modern German does not have non-matching headless relatives that look like Old High German, although it still has syncretic relative pronouns and light heads.

[7] This sharply contrasts with headless relatives in Modern German, which are always ungrammatical when both the internal and external elements surface. I come back to this in Section 5.3.

constructions: the internal and external element can both surface, only the internal element can surface and only the external element can surface. If only one of the two elements surfaces, this is the element that bears the most complex case, which is either the internal or the external one, as I have shown in Chapter 4. I assume that whether both or only one of the elements surfaces is determined by information structure. In (2), the external element *thér* 'DEM.SG.M.NOM' is the candidate to be absent. However, it seems plausible that this is emphasized in this sentence and that it, therefore, cannot be absent.

Support for the idea that Old High German headless relatives are derived from light-headed ones comes from their interpretation. Headless relatives in which the relative pronoun starts with a *d*, such as in Old High German, seem to be linked to individuating or definite readings and not to generalizing or indefinite readings (cf. Fuß, n.d.). I illustrate this with the two examples I repeat from Chapter 4.

Consider the example in (3), repeated from Chapter 4. In this example, the author refers to the specific person which was talked about, and not to any or every person that was talked about.

(3) Thíz ist **then** **sie** **zéllent**
DEM.SG.N.NOM be.PRES.3SG$_{[NOM]}$ REL.SG.M.ACC 3PL.M.NOM tell.PRES.3PL$_{[ACC]}$
'this is the one whom they talk about'
not: 'this is whoever they talk about' (Old High German, Otfrid III 16:50)

Consider also the example in (3), repeated from Chapter 4. In this example, the author refers to the specific person who spoke to someone, and not to any or every person who spoke to someone.

(4) enti aer ant uurta demo **zaimo**
and 3SG.M.NOM reply.PST.3SG$_{[DAT]}$ REL.SG.M.DAT to 3SG.M.DAT
sprah
speak.PST.3SG$_{[NOM]}$
'and he replied to the one who spoke to him'
not: 'and he replied to whoever spoke to him'
(Old High German, Mons. 7:24, adapted from Pittner 1995: 199)

I conclude that the internal element in Old High German is the descriptive relative pronoun, and the external element in Old High German is the descriptive light head. In what follows I closely examine the internal structure of the internal and external element. I illustrate how the internal base and the external base are identical, so they contain each other.

The light head in a light-headed relative is a demonstrative pronoun. Relative and demonstrative pronouns are syncretic in Old High German (Braune 2018: 338). Table 5.8 gives an overview of the forms in singular and plural, neuter, masculine and feminine and nominative, accusative and dative. The pronouns consist of two morphemes: a *d* and suffix that differs per number, gender and case.[8,9]

Table 5.8: Relative/demonstrative pronouns in Old High German (Braune 2018: 339)

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

The suffixes that combine with the *d* in demonstrative and relative pronouns also appear on adjectives. This is illustrated in Table 5.9.

[8] *d* can also be written as *dh* and *th*, *ë* and *ē* can also be *e* and *é* (Braune 2018: 339).

[9] The suffix could also be further divided into a vowel and a suffix. As this is not relevant for the discussion here, I refrain from doing that.

Table 5.9: Adjectives on *-a-/-ō-* in Old High German Braune 2018: 300

	N.SG	M.SG	F.SG
NOM	jung, jung-az	jung, jung-ēr	jung, jung-iu
ACC	jung, jung-az	jung-an	jung-a
DAT	jung-emu/jung-emo	jung-emu/jung-emo	jung-eru/jung-ero
	N.PL	**M.PL**	**F.PL**
NOM	jung-iu	jung-e	jung-o
ACC	jung-iu	jung-e	jung-o
DAT	jung-ēm/jung-ēn	jung-ēm/jung-ēn	jung-ēm/jung-ēn

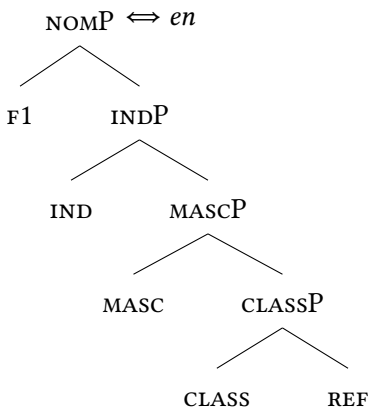
I conclude from this that the suffix expresses features that are specific to being nominal, like number, gender and case. Not part of the suffix are features that are specific to being a demonstrative or relative pronoun, like anaphoricity and definiteness. I assume that these are expressed by the morpheme *d*.

In this section, I only discuss two forms: the nominative and accusative masculine singular relative and demonstrative pronoun. The nominative is *dër* and the accusative is *dën*. In what follows, I discuss the featural content of the morphemes *d*, *ër* and *ën*. I start with the features that are expressed by the suffixes *ër* and *ën*.

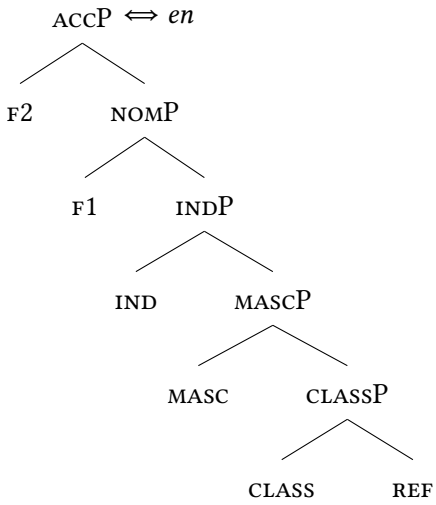
For the suffixes, I use pronominal features that are distinguished by Harley and Ritter (2002): REF, CLASS, MASC and IND. REF refers to a referring expression, which all pronouns contain. The feature CLASS refers to gender features, which is neuter if it is not combined with any other features. Combining CLASS with the feature MASC gives a masculine gender. IND refer to number, which is singular if it is not combined with any other features. I addition, I use the case features introduced by Caha (2009), which I already discussed in Chapter 3. F1 refers to a nominative, and F1 and F2 refers to an accusative.

This allows me to propose the following lexical entries for the two suffixes.

(5)

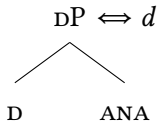


(6)



The *d* morpheme corresponds to definiteness and anaphoricity. Anaphoricity establishes a relation with another element in the (linguistic) discourse. Definiteness encodes that the referent is specific.

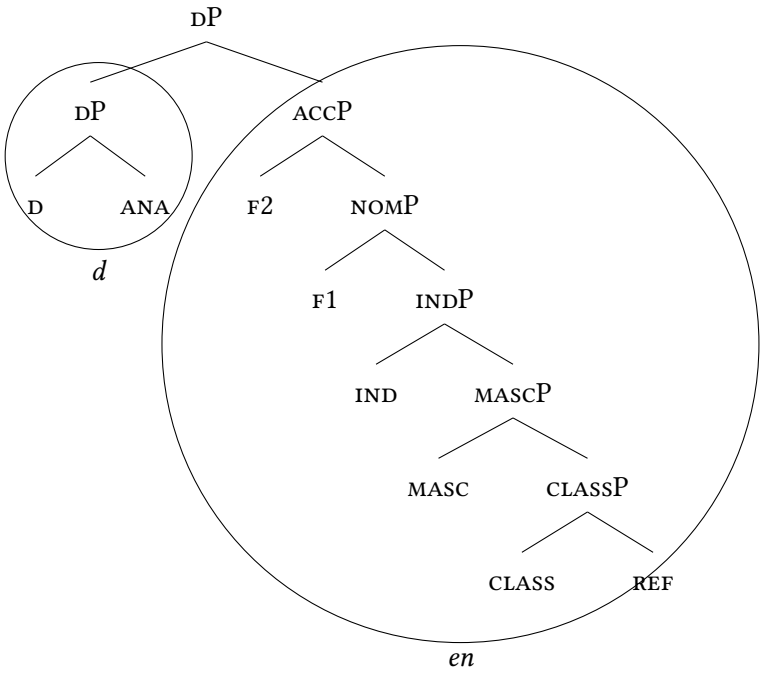
(7)



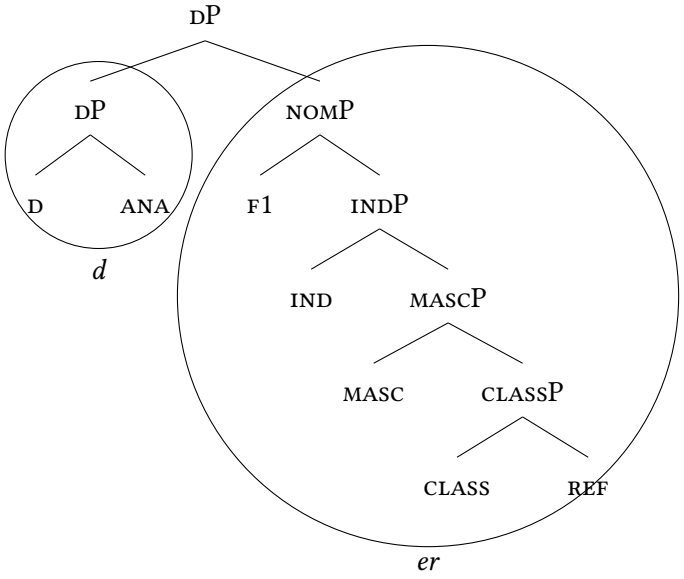
So, the two relative pronouns look like this.[10]

[10] A question that arises here is how the case features can form a constituent to the exclusion of

(8) a.



b.



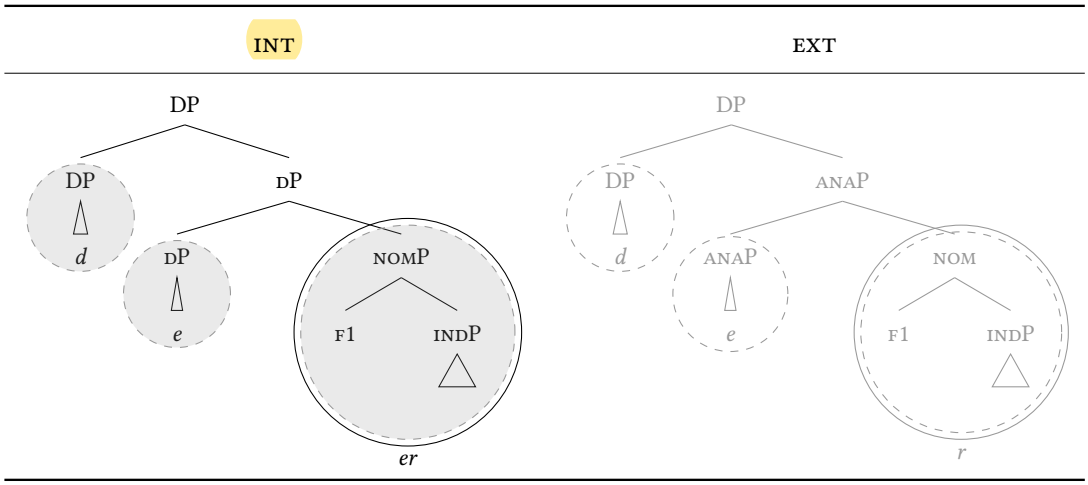
So, there is a base part and a case part. Actually, the case part also has some case in it, but that does not matter because they are identical in both case parts.

definiteness and anaphoricity. I come back to this issue in Chapter 6.

I start with the first example from Table 5.7, in which the internal and external case match (INT = EXT). The example that corresponds to this example is given in (1).

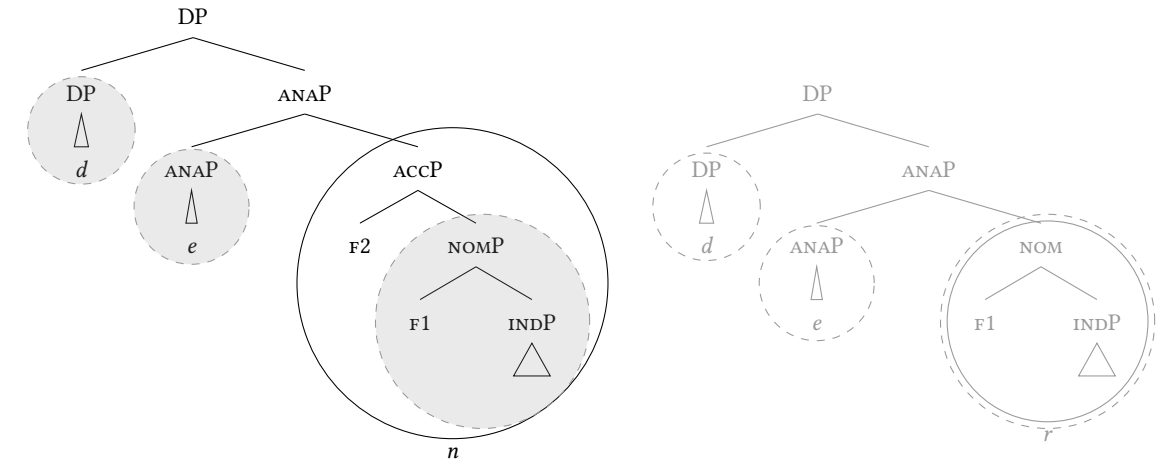
(9) quham dher chisendit scolda
come.PST.3SG$_{[NOM]}$ REL.SG.M.NOM send.PST.PTCP$_{[NOM]}$ should.PST.3SG
uuerdhan
become.INF
'the one, who should have been sent, came' (Old High German, Isid. 35:5)

Table 5.10: Old High German: INT = EXT



(10) Thíz ist **then sie zéllent**
DEM.SG.N.NOM be.PRES.3SG$_{[NOM]}$ REL.SG.M.ACC 3PL.M.NOM tell.PRES.3PL$_{[ACC]}$
'this is the one whom they talk about' (Old High German, Otfrid III 16:50)

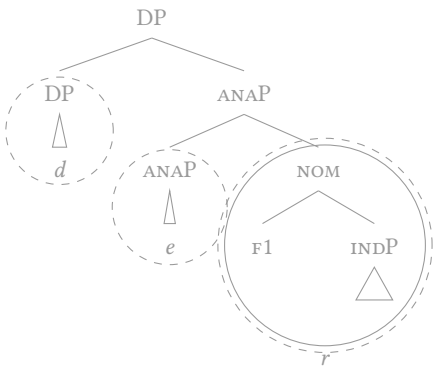
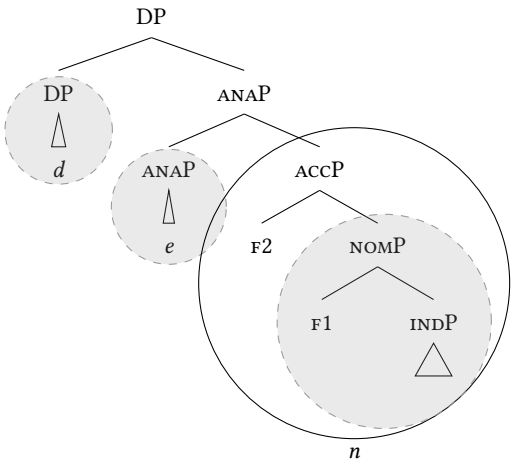
Table 5.11: Old High German: INT > EXT



(11) ih bibringu fona iacobes samin endi fona
1SG.NOM create.PRES.1SG$_{[ACC]}$ of Jakob.GEN seed.SG.DAT and of
iuda dhen **mina berga**
Judah.DAT REL.SG.M.ACC my.ACC.M.PL mountain.ACC.PL
chisitzit
possess.PRES.3SG$_{[NOM]}$
'I create of the seed of Jacob and of Judah the one, who possess my mountains'

(Old High German, Isid. 34:3)

Table 5.12: Old High German: INT < EXT

INT	EXT
	

In this dissertation I focus on when languages allow the internal and external case to win the case competition. In my proposal, this depends on the comparison between the internal and external base. The larger syntactic context in which this takes place should be kept stable. For concreteness, I show a possible implementation in Cinque's double-headed analysis of relative clause. I do by no means claim that claim this is the only or even correct implementation.

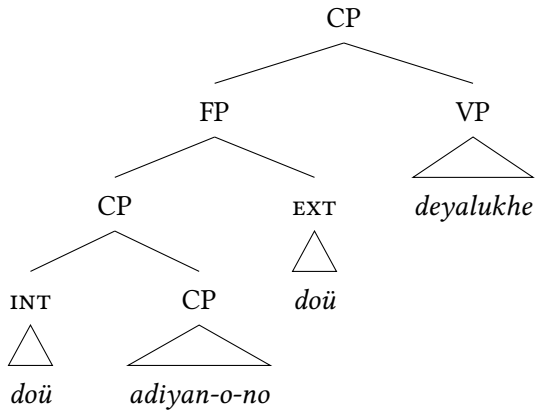
According to Cinque, every type of relative clause in every language is underlyingly double-headed. Evidence for this claim comes from languages that show this morphologically. An example from Kombai is given in (12). The head of the relative clause is *doü* 'sago', and it appears inside the relative clause and outside.

(12) [**doü** adiyan-o-no] **doü** deyalukhe
sago give.3PL.NONFUT-tr-CONN sago finished.ADJ
'The sago that they gave is finished.' (Kombai, Vries 1993: 78)

The internal and external instances of *doü* correspond to the internal and external element I assume to be there in the headless relatives.

(13) shows the syntactic structure of the sentence in (12).

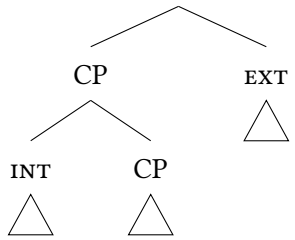
(13)



In most languages one of the two heads is deleted throughout the derivation.

According to Cinque 2020, the internal element can delete the external element, because the internal element c-commands the external element. This is c-command according to Kayne's definition of it: the internal element is in the specifier of the specifier of the FP.

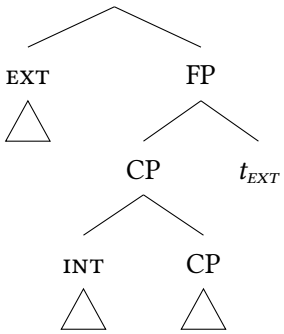
(14)



In order for the internal element to be able to delete the external element, a movement needs to take place. The external element moves over the relative clause.[11] From this position, the external element can delete the internal one, because the external element c-commands the internal one.

[11]What remains unclear is what the trigger is for the movement of the external element over relative clause is.

(15)



To sum up, Old High German allows the internal and the external case to surface when either of them wins the case competition. This is due to the fact that the bases of the internal and the external element are syncretic. Because of that, the internal base contains the external base, which allows the internal case to surface, and the external base contains the internal base, which allows the external case to surface.

5.3 Deriving only internal

Only internal wins, external cannot. I illustrate this with nominative and accusative.

(16) a. Uns besucht, **wen Maria mag**.
2PL.ACC visit.PRES.3SG$_{[NOM]}$ REL.AN.ACC Maria.NOM like.PRES.3SG$_{[ACC]}$
'Who visits us, Maria likes.'
(Modern German, adapted from Vogel 2001: 343)

b. *Ich lade ein, wen **mir sympathisch ist**.
1SG.NOM invite.PRES.1SG$_{[ACC]}$ REL.AN.ACC 1SG.DAT nice be.PRES.3SG$_{[NOM]}$
'I invite who I like.' (Modern German, adapted from Vogel 2001: 344)

5.3.1 The relative pronoun = internal

In headless relative constructions, there is a single element that surfaces: the relative pronoun. In this section, I show that the relative pronoun is syntactically part of

the relative clause. The evidence comes from extraposition data in Modern German. In Modern German, it is possible to extrapose a CP (a clause), but not a DP (a noun phrase). In this section I first show that Modern German CPs can be extraposed and DPs cannot. Then I illustrate how relative clauses including the relative pronoun in headless relatives pattern with CPs: they can be extraposed as well. I conclude that the relative pronoun is the internal element in the headless relative.

The sentences in (17) show that it is possible to extrapose a CP. In (17a), the clausal object *wie es dir geht* 'how you are doing', marked here in bold, appears in its base position. It can be extraposed to the right edge of the clause, shown in (17b).

(17) a. Mir ist **wie es dir geht** egal.
1SG.DAT is how it 2SG.DAT goes the same
'I don't care how you are doing.'
b. Mir is egal **wie es dir geht**.
1SG.DAT is the same how it 2SG.DAT goes
'I don't care how you are doing.' (Modern German)

(18) illustrates that it is impossible to extrapose a DP. The clausal object of (17) is replaced by the simplex noun phrase *die Sache* 'that matter'. In (18a) the object, marked in bold, appears in its base position. In (18b) it is extraposed, and the sentence is no longer grammatical.

(18) a. Mir ist **die Sache** egal.
1SG.DAT is that matter the same
'I don't care about that matter.'
b. *Mir ist egal **die Sache**.
1SG.DAT is the same that matter
'I don't care about that matter.' (Modern German)

The same asymmetry between CPs and DPs can be observed with relative clauses. A relative clause is a CP, and the head of a relative clause is a DP. The sentences in (19) contain the relative clause *was er gekocht hat* 'what he has stolen'. This is marked in bold in the examples. The (light) head of the relative clause is *das*. In (19a), the relative clause and its head appear in base position. In (19b), the relative

clause is extraposed. This is grammatical, because it is possible to extrapose CPs in Modern German. In (19c), the relative clause and the head are extraposed. This is ungrammatical, because it is possible to extrapose DPs.

(19) a. Jan hat das, **was er gekocht hat**, aufgegessen.
Jan has that what he cooked has eaten
'Jan has eaten what he cooked.'
b. Jan hat das aufgegessen, **was er gekocht hat**.
Jan has that eaten what he cooked has
'Jan has eaten what he cooked.'
c. *Jan hat aufgegessen, das, **was er gekocht hat**.
Jan has eaten that what he cooked has
'Jan has eaten what he cooked.' (Modern German)

The same can be observed in relative clauses without a head. (20) is the same sentence as in (19) only without the overt head. The relative clause is marked in bold again. In (20a), the relative clause appears in base position. In (20b), the relative clause is extraposed. This is grammatical, because it is possible to extrapose CPs in Modern German. In (20c), the relative clause is extraposed without the relative pronouns. This is ungrammatical, because the relative pronoun is part of the CP. This shows that the relative pronoun in headless relatives in Modern German are necessarily part of a CP, which is here a relative clause.

(20) a. Jan hat **was er gekocht hat** aufgegessen.
Jan has what he cooked has eaten
'Jan has eaten what he cooked.'
b. Jan hat aufgegessen **was er gekocht hat**.
Jan has eaten what he cooked has
'Jan has eaten what he cooked.'
c. *Jan hat **was** aufgegessen **er gekocht hat**.
Jan has what eaten he cooked has
'Jan has eaten what he cooked.' (Modern German)

In conclusion, extraposition facts show that the relative pronoun in Modern German

is syntactically part of the relative clause. Therefore, the relative pronoun is the internal element in headless relative construction.

5.3.2 The other element = external

In the previous section I introduced the relative pronoun as the internal element. This means that the other element is the external element. This section starts with the observation that there actually are languages in which two elements surface in so-called double-headed relative clauses. In these languages, the external head is a subset of the internal head, and that some features like D and case are necessarily excluded in the external head. I adopt this insight, and I apply it to the headless relative situation. I propose that the external head in headless relatives is a copy of a specific part of the relative pronoun.

As I said earlier, I need two elements to do case competition with. In headless relatives, I only see a single one surfacing. However, some languages actually show two elements surfacing. Here there are two copies of the element, one inside the relative clause, one outside of the relative clause.

(21) [**doü** adiyan-o-no] **doü** deyalukhe
sago give.3PL.NONFUT-tr-CONN sago finished.ADJ
'The sago that they gave is finished.' (Kombai, Vries 1993: 78)

The external element is not always an exact copy of the element inside of the relative clause. An example from Kombai shows that the element outside of the relative clause can also be a subset of what the element inside of the relative clause is. Here I give two examples, there is an *old man* and a *person*, and there is *pig* and a *thing*.

(22) a. [**yare** gamo khereja bogi-n-o] **rumu**
old man join.SS work do.DUR.3SG.NF-TR-CONN person
na-momof-a
my-uncle-PRED
'The old man, who is joining the work, is my uncle.' 77

b. [**ai** fali-khano] **ro** nagu-n-ay-a.
pig carry-go.3PL.NF thing our-TR-pig-PRED
'The pig they took away, is ours.' (Kombai, Vries 1993: 77)

Let me now apply what we have seen so far to headless relatives. Headless relatives do not have an overt NP, so this cannot be copied. However, there is the relative pronoun which is specified for number, gender, case, etc. Are all of these features copied onto the external element? The copy is the portion of the nominal extended projection c-commanded by the relative clause. A headless relative is a restrictive relative clause. Therefore, there is no D and no case.

Is it possible to add features onto the external head after it has been copied? Yes, for example D, as the example shows, but also case.

(23) Junya-wa [Ayaka-ga **ringo**-o mui-ta] sono **ringo**-o tabe-ta.
Junya-TOP Ayaka-NOM apple-ACC peel-PST that apple-ACC eat-PST
'Junya ate the apples that Ayaka peeled.'
(Japanese, Erlewine and Gould 2016: 2)

In sum, the external element is a copy of a subset of the features of the relative pronoun. Definiteness and case are not copied. New features can be merged onto the external element.

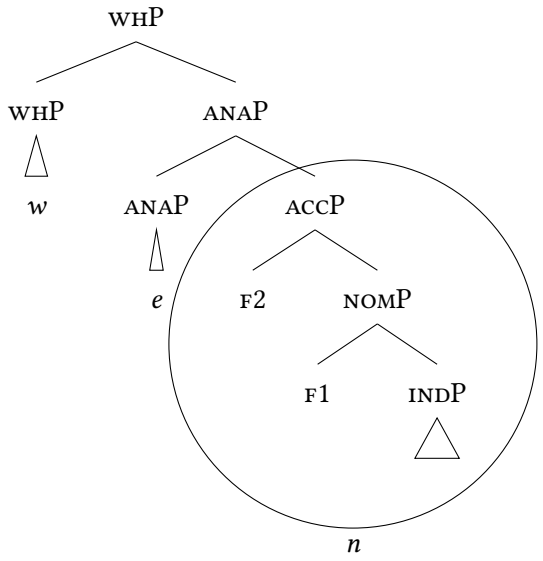
5.3.3 Relative pronoun

Table 5.13: Relative pronouns in headless relatives in Modern German

	AN
NOM	w-e-r
ACC	w-e-n
DAT	w-e-m

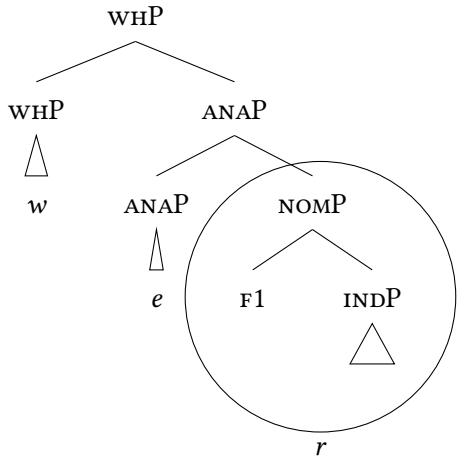
three morphemes: WH, ANA, number+gender+case
accusative relative pronoun

(24)



nominative relative pronoun

(25)



5.3.4 External element

I copy the IND and I only merge the cases.

Modern German has two types of demonstratives: the strong one and the weak one.

The strong article is used when there is an anaphoric relation. Often there is a

linguistic antecedent that is referred back to.

(26) Hans hat heute **einen Freund** zum Essen mit nach Hause gebracht.
Hans has today a friend to the dinner with to home brought
Er hat uns vorher ein Foto **vom**/ **von dem** **Freund**
he has us beforehand a photo of the$_{\text{WEAK}}$ of the$_{\text{STRONG}}$ friend
gezeigt.
shown
'Hans brought a friend home for dinner today. He had shown us a photo of the friend beforehand.'

Weak articles are used when situational uniqueness is involved. Uniqueness can be global or within a restricted domain. The discourse participants mutually shared knowledge that uniqueness holds.

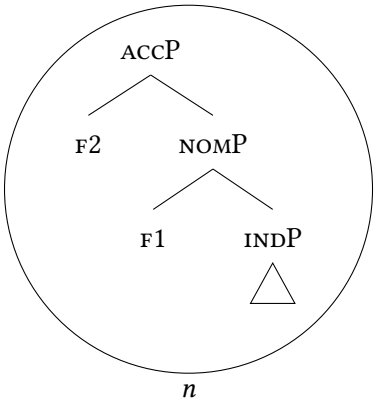
(27) a. Der Einbrecher ist zum Glück vom /von dem Hund
the burglar is luckily by the$_{\text{WEAK}}$ by the$_{\text{STRONG}}$ dog
verjagt worden.
chased away been
'Luckily, the burglar was chased away by the dog.'
b. Armstrong flog als erster zum Mond.
Armstrong flew as first one to the$_{\text{WEAK}}$ moon
'Armstrong was the first one to fly to the moon.'
(Modern German, Schwarz 2009: 40)

In the headless relatives, there is uniqueness. Show?

The strong article cannot be used because it does not go together with the free choice interpretation of WH-relatives (say something about Hanink).

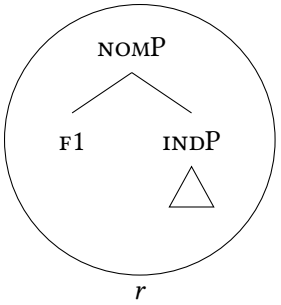
The weak article is used. accusative:

(28)



nominative:

(29)

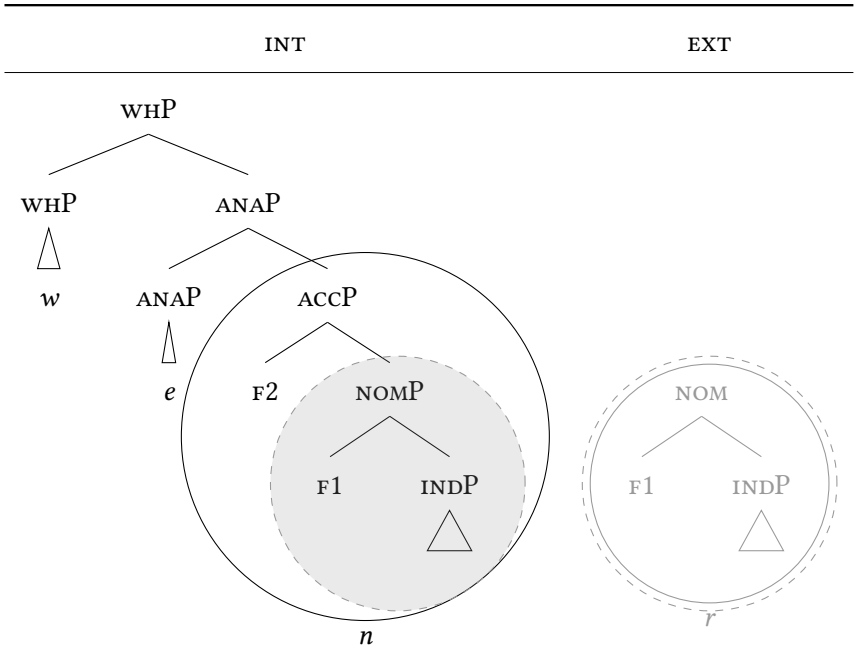


5.3.5 Comparison

(30) Uns besucht **wen** **Maria** **mag**.
we.ACC visit.3SG$_{[NOM]}$ REL.ACC.AN Maria.NOM like.3SG$_{[ACC]}$
'Who visits us, Maria likes.' (adapted from Vogel 2001: 343)

the internal case is more complex than the external case, and the internal base part is more complex than the external non-cas part

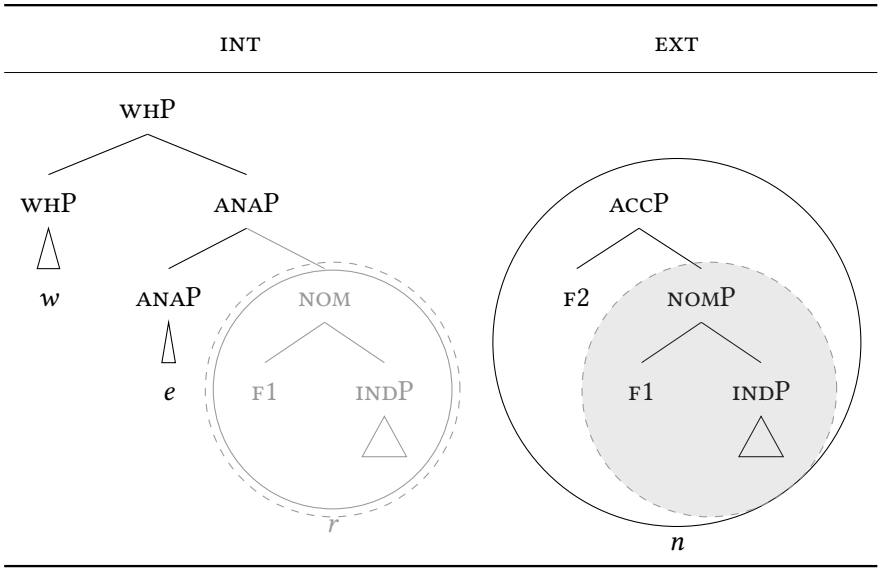
Table 5.14: Modern German: INT > EXT



(31) *Ich lade ein, wen **mir** **sympathisch** **ist**.
1SG.NOM invite.PRES.1SG$_{[ACC]}$ REL.AN.ACC 1SG.DAT nice be.PRES.3SG$_{[NOM]}$
'I invite who I like.' (Modern German, adapted from Vogel 2001: 344)

the external case is more complex than the internal case, but the external base part is not more complex than the internal base part

Table 5.15: Modern German: INT > EXT



5.4 Deriving matching

Radek: Czech distinguishes between accidental uniqueness and inherent uniqueness. Accidental uniqueness: with DEM, inherent uniqueness: without DEM.

Radek's situation:

Two student assistants A and B are at their shared workdesk, which they share with other student assistants and where there's a computer and a couple of other things, including a book (it doesn't really matter to whom the book belongs). A is looking for a pencil, B says

(32) Nějaká tužka je vedle počítače /#toho počítače.
some pencil is next to computer DEM computer
'There's a pencil next to the computer.'

All situations like the topic situation – A and B's shared office (desk)– have exactly one computer in it.

(33) Nějaká tužka je vedle té knížky /#knížky
some pencil is next to DEM book book
'There's a pencil next to the book.'

There is exactly one book in the topic situation – A and B's shared office (desk) – and it does not hold that all situation like the topic situation have exactly one book in it

Florian showed that this is different for Modern German:

	anaphoric	situational uniqueness	inherent uniqueness
Polish	DEM	DEM	∅
German	$\text{DEM}_{\text{STRONG}}$	DEM_{WEAK}	DEM_{WEAK}

to is incompatible with *ever*, because *to* makes it accidentally uniqueness and *ever* requires inherent uniqueness

5.5 Excluding external-only

5.6 Summary

The linguistic counterpart of 'allow EXT?' is whether the internal base and the external base are syncretic (base_{INT} = base_{EXT}?). The linguistic counterpart of 'allow INT?' is whether the external base is a clitic (base_{EXT} = clitic?).

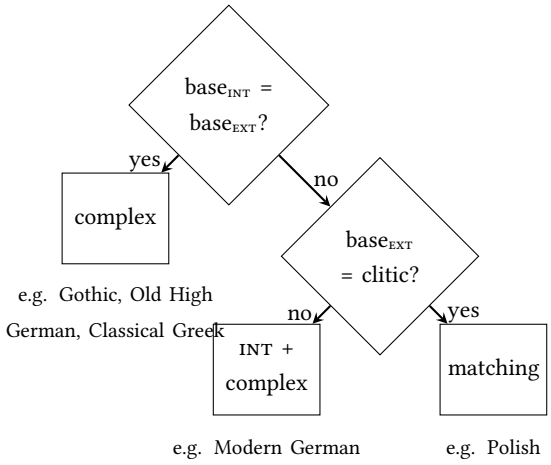


Figure 5.2: Two theoretical parameters generate three language types

5.7 Alternative analyses

5.7.1 Himmelreich

She specific languages for having different types of agree (up, down) and different types of probes (active, non-active). Doing that, she successfully derived free relatives and parasitic gaps in different languages.

5.7.2 Grosu

Grosu 1994 linked richness of inflection to liberality. He actually talked about the richness of pro.

5.7.3 Grafting story

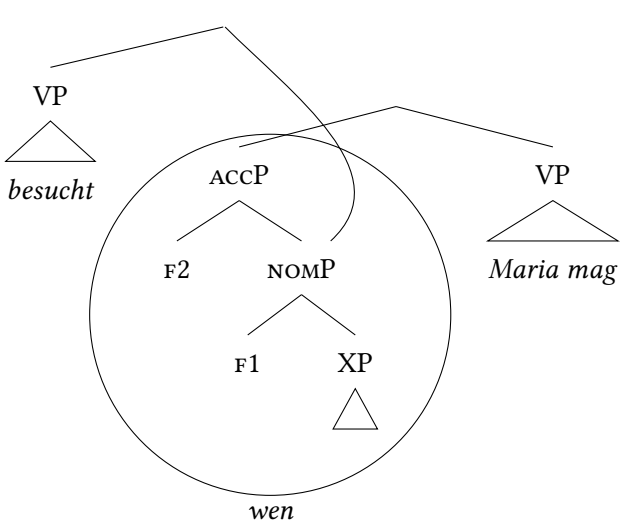
For this pattern a single element analysis seems intuitive, if you assume that case is complex and that syntax works bottom-up. First you built the relative clause, with the big case in there. Then you build the main clause and you let the more complex case in the embedded clause license the main clause predicate.

Consider the example in (34). Here the internal case is accusative and the external one nominative.

(34) Uns besucht **wen** **Maria** **mag**.
we.ACC visit.3SG$_{[NOM]}$ REL.ACC.AN Maria.NOM like.3SG$_{[ACC]}$
'Who visits us, Maria likes.' (adapted from Vogel 2001: 343)

The relative clause is built, including the accusative relative pronoun. Now the main clause predicate can merge with the nominative that is contained within the accusative.

(35)

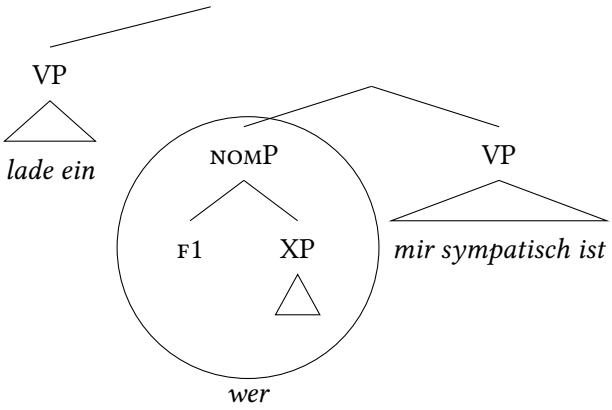


The other way around does not work. Consider (36). This is an example with nominative as internal case and accusative as external case.

(36) *Ich lade ein, wen **mir** **sympathisch** **ist**.
I.NOM invite.1SG$_{[ACC]}$ REL.ACC.AN I.DAT nice be.3SG$_{[NOM]}$
'I invite who I like.' (adapted from Vogel 2001: 344)

Now the relative clause is built first again, this time only including the nominative case. There is no accusative node to merge with for the external predicate. Instead, the relative pronoun would need to grow to accusative somehow and then the merge could take place. This is the desired result, because the sentence is ungrammatical.

(37)



So, this seems to work fine. The assumptions you have to do in order to make this are the following. First, case is complex. Second, you can remerge an embedded node (grafting). For the first one I have argued in Chapter 3. The second one could use some additional argumentation. It is a mix between internal remerge (move) and external merge, namely external remerge. Other literature on multidominance and grafting, other phenomena. Problems: linearization, .. But even if fix all these theoretical problems, there is an empirical one.

That is, I want to connect this behavior of Modern German headless relatives to the shape of its relative pronouns. These pronouns are WH-elements. The OHG and Gothic ones are not WH, they are D. Their relative pronouns look different, and so their headless relatives can also behave differently.

Chapter 6

Discussion

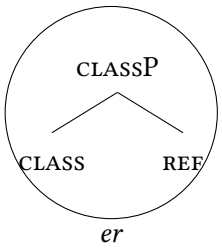
6.1 D between K and ϕ

How can cases and number/gender be packaged together to the exclusion of D? Because D is actually merged below K. Let me illustrate this.

(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).

(2)

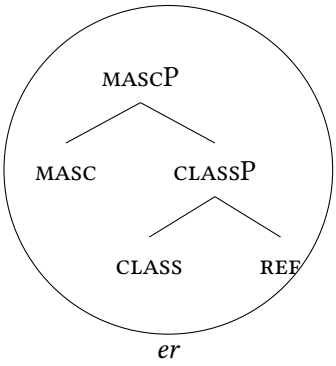


When a new match is found, it overrides previous spellouts.

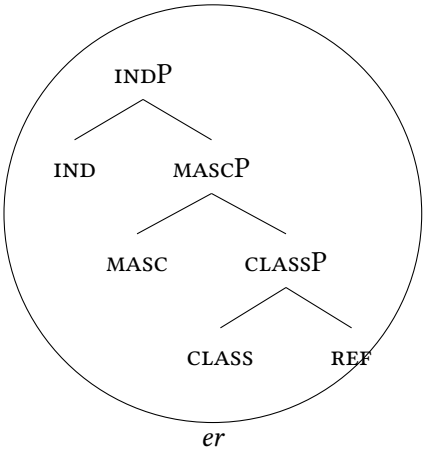
(3) **Cyclic Override** (Starke, 2018):
Lexicalisation at a node XP overrides any previous match at a phrase con-

tained in XP.

(4)

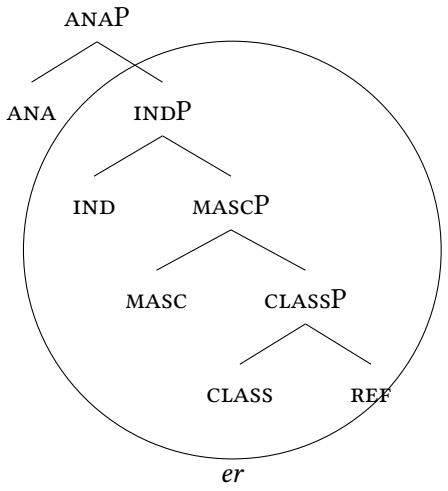


(5)



ANA cannot be spelled out together with what has been spelled out so far. Try the movements, which is not helping. I need to make a left branch.

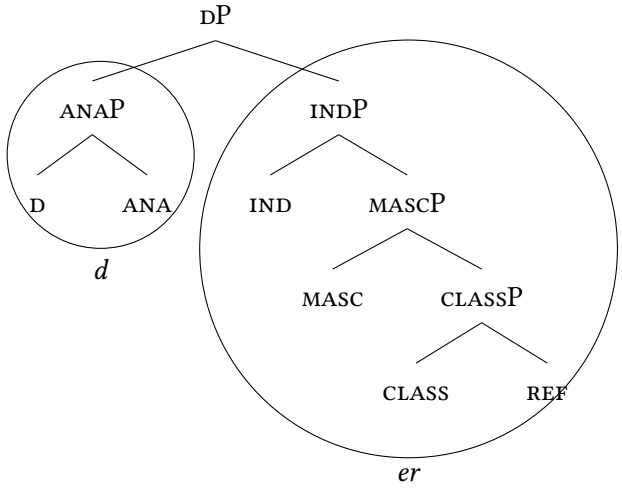
(6)



A specifier is constructed.

(7) **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.

(8)

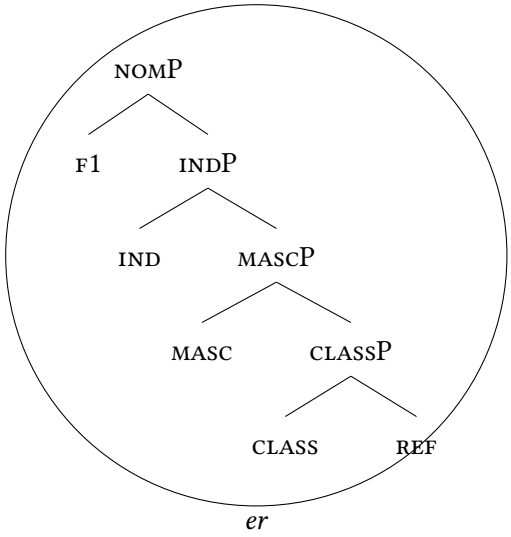


If the spellout procedure in (1) fails, backtracking takes place.

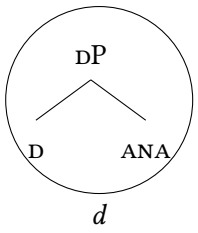
(9) **Backtracking** (Starke, 2018):

When spellout fails, go back to the previous cycle, and try the next option for that cycle.

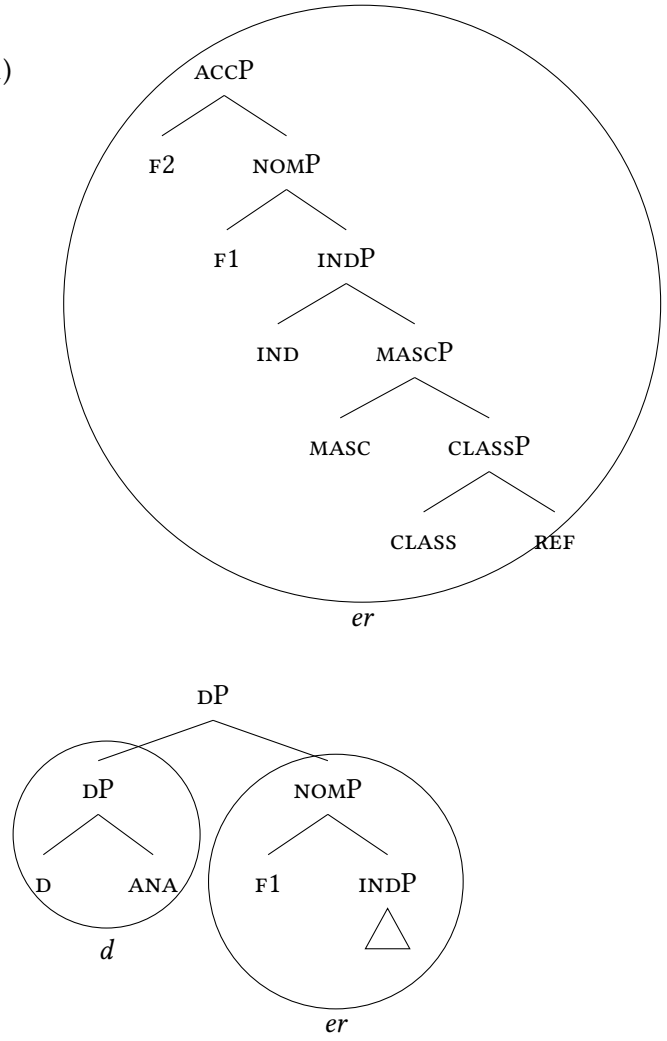
(10) a.



b.



(11)



6.2 Optionality

The deletion in Old High German is optional. You can also have two light heads.

(12) Innan dhiu dher quhimit,
bis dass der.MASC.SG.NOM kommen.IND.PRES.SG.3
dher chisendit uuirdhit
der.MASC.SG.NOM senden,schicken werden.IND.PRES.SG.3
‘’ (Old High German, Isid.)

The deletion in Modern German is not optional, but obligatory. The reason for that is that the weak demonstrative is phonologically(?) not heavy enough to be the head of a relative clause. Maybe not only phonologically, because *vom* also does not work..

are free relatives restrictive or non-restrictive? > restrictive, and restrictive and weak are incompatible :) » this is why we have deletion!

(13) Sie ist vom Mann, mit dem sie gestern ausgegangen ist, versetzt worden.

Polish only allows the deletion of the light head in the matching situation. It is not obligatory there, you can just as well have a light-headed relative. The deletion is possible, because you have two elements that are pretty similar?

(14) Jan czyta to, co Maria czyta.
Jan read this what Maria reads
‘Jan reads what Maria reads.’ (Polish, Citko 2004: 96)

6.3 Diachronic part

First, German only had the d-pronoun and attraction. The pattern of attraction that came with that pronoun is ext only. At some point, German invented the wh-pronoun. Helmut showed how it emerged. With that came the other pattern: int only. Some people lost the attraction (but everybody kept the d-pronoun) and with that the pattern disappeared. So the patterns in headless relatives follow from the relative pronouns in the language.

Why are all languages of the ‘matching’ type dead languages? Was it a common thing that wh-pronouns were not used as relative pronouns?

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.

First there was only the relative pronoun with a D. Then we did case competition with this one, in both directions. Later, we only did it with the wh, and we only had internal left. Because this competitor was introduced, the case competition with D disappeared.

Eric Fuß with definite readings of d-relatives etc.

6.4 Why FEM does not have WH-pronouns

Another language that only allows the internal case to surface after it wins the case competition.

valita 'choose' takes a partitive object

(15) Valitsen mista sina piddt. choose-I.el what-el you like-you.part 'I choose what you like.'

pitää 'like' takes elative objects

(16) *Pidan mista sind valitset.
like-I.part what-el you choose-you.el
'I like what you choose.'

(17) *Pidan mita sind valitset.
like-I.part what-el you choose-you.el
'I like what you choose.'

x

Primary texts

Col.	Colossians, New Testament
Hel.	Heliand
Isid.	Der althochdeutsche Isidor
John	John, New Testament
Luke	Luke, New Testament
Mark	Mark, New Testament
Men. DD.	Menander, The Double Deceiver
Mons.	The Monsee fragments
Nib.	Das Nibelungenlied
Otfrid	Otfrid's Evangelienbuch
Pl. Men.	Plato, Menexenus
Rom.	Romans, New Testament
Tatian	Tatian

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