CASE COMPETITION IN HEADLESS RELATIVES

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List of abbreviations

ACC	accusative
AN	animate
AOR	aorist
CL	clitic
CMPR	comparative
COMP	complementizer
DAT	dative
DEM	demonstrative
EXT	external case
F	feminine
GEN	genitive
INF	infinitive
INT	internal case
MOD	modal marker
M	masculine
NMLZ	nominalization
NOM	nominative
N	neuter
PL	plural
PRES	present tense

PST past tense

PTCP participle

REL relative

SBJV subjunctive mood

SG singular

SUBJ subject

Chapter 1

A typology

In Part **??** 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 **??** in (1).

(1) NOM < ACC < DAT

In Chapter **??** within Part **??**, 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 **??**, 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 **??** and the subset requirement of the external head, to be discussed in Chapter 2. 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 1.2 to Section 1.5, I discuss the patterns one by one, and I give examples when the pattern is attested. In Section 1.7, I make a sidestep to languages that do not show any case competition, and I give a typology of headless relatives.

1.1 Four possible patterns

Case competition has two aspects. The first aspect is the topic of Part **??** 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 **??** 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 1.1, 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 unrestricted 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 **??**. Table 1.1 (repeated from Table **??**) 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 1.1: 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 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 1.2 illustrates what the pattern for such a language looks like. Compared to the unrestricted 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 unrestricted 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 1.2: 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 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 1.3 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 unrestricted type and the 'unrestricted — 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 unrestricted type and the 'unrestricted — 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 unrestricted type but unlike in the 'unrestricted — internal-only' type, these instances are grammatical.

Table 1.3: 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 1.4 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 'unrestricted — external-only' type, but unlike the unrestricted type and the 'unrestricted — 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 'unrestricted — internal-only' type, but unlike the unrestricted type and the 'unrestricted — 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 1.4 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 1.7 I discuss languages in which the internal and external case are not compared to each other.

Table 1.4: 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 1.2 shows that the unrestricted type, in which either the internal case or the external case can surface, is exemplified by Gothic (repeated from Chapter **??**) and by Old High German. The 'unrestricted — internal-only' type, in which only the internal case can surface, is illustrated by Modern German in Section 1.3. 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 1.4. Section 1.5 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.

1.2 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 1.1 in Table 1.5.

Table 1.5: 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 **??**), and I present the data for Old High German, which is the result of my own research.

In Chapter **??**, I discussed case competition in Gothic headless relatives, based on the work of Harbert (1978). I repeat the results from Section **??** in Table 1.6. 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 1.6 can be found in Section **??**.

Table 1.6: 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 **??** 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 1.7. 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 1.7: Old High German headless relatives (matching)

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

In Table 1.7, 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 1.8. 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 1.8: 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 1.9. 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 1.9: 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 1.10. 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 1.10: 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.

1.3 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 1.1 in Table 1.11.

Table 1.11: 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 1.12. 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 1.12: Modern German headless relatives (matching)

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

In Table 1.12, 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**
1SG.NOM invite.PRES.1SG$_{[ACC]}$ REL.AN.NOM 1SG.DAT nice
ist.
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 1.13. 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**
1SG.NOM love.1SG$_{[ACC]}$ REL.AN.NOM good.NMLZ do.3SG$_{[NOM]}$ and hate.1SG$_{[ACC]}$ REL.AN.NOM
mich verletzt.
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 1.13: 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 1.14. 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 1.14: 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 mag**.
1SG.NOM trust.PRES.1SG$_{[DAT]}$ REL.AN.DAT also Maria.NOM 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 mag**.
1SG.NOM trust.PRES.1SG$_{[DAT]}$ REL.AN.ACC also Maria.NOM 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 1.15. 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 1.15: 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.

1.4 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 1.1 in Table 1.16.

Table 1.16: 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 1.16 from the beginning of this section as Table 1.17, 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 1.17: 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 unrestricted type. I repeat Table 1.5 from Section 1.2 as Table 1.18, and I mark the cell that corresponds to the example in (27) in gray.

Table 1.18: 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 1.17 and Table 1.18 apart is the bottom-left corner of the table. These are cases in which the internal case wins the case competition. In Table 1.17 these examples are not allowed to surface, and in Table 1.18 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 1.17, but is has to be of the type shown in Table 1.18. 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 1.19, 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 1.19: 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.

1.5 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 1.1 in Table 1.20.

Table 1.20: 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 1.21. 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 1.21: Polish headless relatives (matching)

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

In Table 1.21, 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 1.22. 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 1.22: 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.

1.6 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 **??**. 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 1.23. 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 1.23: 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 unrestricted type: the internal and the external case are allowed to surface when either of them wins the case competition

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

iii. The 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 1.24. 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 unrestricted

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 'unrestricted — internal-only' type in (36ii). In this language, relative pronouns in the unmarked and light gray cells are grammatical. To my knowledge, the 'unrestricted — 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 1.24: Relative pronoun follows case competition

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

Figure 1.1 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 'unrestricted — internal-only' type is generated. If a language allows the internal and the external case to surface, the unrestricted type is generated.[9]

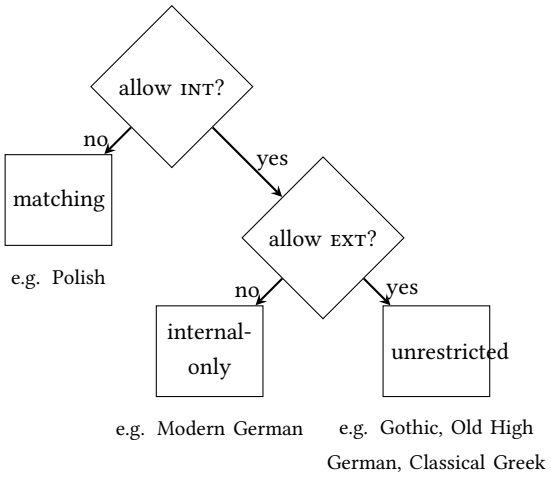


Figure 1.1: Attested patterns in headless relatives with case competition

The main focus of Chapter 2 is the linguistic counterpart of the second parameter. I show with general properties of relative clauses how the difference between the unrestricted and the 'unrestricted — internal-only' type can be modeled, and how the exclusion of the 'unrestricted — external-only' type follows from these particular properties. I also introduce a linguistic counterpart for the first parameter, which distinguishes matching from unrestricted 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 2, 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 2 I propose separate mechanisms for each of the parameters in Figure 1.1. The first one distinguishes matching languages from unrestricted (i.e. unrestricted and internal-only) languages, and the second one distinguishes unrestricted from internal-only languages.

1.7 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 1.25 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 1.25: Always internal case

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

Table 1.26 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 1.26: Always external case

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

Section 1.7.1 discusses two languages that let their relative pronouns in headless relatives always surface in the external case: Old English and Modern Greek. In Section 1.7.2 I extend the typology from Section 1.6 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.

1.7.1 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 1.26 and not of the type I discussed in Section 1.4 (or of the one in Section 1.2).

Table 1.27: 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 1.16 from Section 1.4 as Table 1.28, and I mark the cell that corresponds to example

(37) in gray.

Table 1.28: 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 1.5 from Section 1.2 as Table 1.29, and I mark the cell that corresponds to example (37) in gray.

Table 1.29: 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 1.27 from the beginning of this section as Table 1.30, and I mark the cell that corresponds to example (37) in gray.

Table 1.30: 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 1.28, Table 1.29 and Table 1.30 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 1.28 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 1.4 I claimed did not exist. In Table 1.29 and in Table 1.30 there is a relative pronoun that can surface, but the case of the relative pronouns differs. In Table 1.29, the relative pronoun surfaces in the most complex case that wins the case competition: the internal case. In Table 1.30, 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 1.30. 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 1.4, in which only the external case is allowed to surface, nor is it an instance of the pattern in Section 1.2, in which the internal case and external case are allowed to surface. Instead, as illustrated by Table 1.31, 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 1.31: 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 1.16 from Section 1.4 as Table 1.32, and I mark the cell that corresponds to example (39) in gray.

Table 1.32: Modern Greek headless relatives possibility 1

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

Second, Modern Greek could be a case competition language that allows the internal case and external case to surface. I repeat Table 1.5 from Section 1.2 as Table 1.33, and I mark the cell that corresponds to example (39) in gray.

Table 1.33: Modern Greek headless relatives possibility 2

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

Third, Modern Greek could be a language without case competition that lets the relative pronoun appear in the external case. I repeat Table 1.27 from the beginning of this section as Table 1.34, and I mark the cell that corresponds to example (39) in gray.

Table 1.34: Modern Greek headless relatives possibility 3

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

What sets Table 1.32, Table 1.33 and Table 1.34 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 1.32 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 1.4 I claimed did not exist. In Table 1.33 and in Table 1.34 there is a relative pronoun that can surface, but the case of the relative pronouns differs. In Table 1.33, the relative pronoun surfaces in the most complex case that wins the case competition: the internal case. In Table 1.34, 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 1.34. 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 1.4, in which only the external case is allowed to surface, nor is it an instance of the pattern in Section 1.2, in which the internal case and external case are allowed to surface. Instead, as illustrated by Table 1.35, 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 1.35: Summary of Modern Greek headless relatives

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

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.

1.7.2 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 1.6. 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 1.2 to 1.5, I discussed four different patterns. These four patterns are all based on a single table, shown in Table 1.36 (repeated from Section 1.2). 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 1.2 to 1.5, the cells are filled by a case different from what is given in 1.36.

Table 1.36: 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 1.37 (repeated from Table 1.26).

Table 1.37: 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 1.38 (repeated from Table 1.26).

Table 1.38: 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 1.6 in Figure 1.2. 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 1.36 is generated. The two parameters that follow then ('INT as winner?' and 'EXT as winner?') are described in Section 1.6. 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 1.37 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 1.38 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.

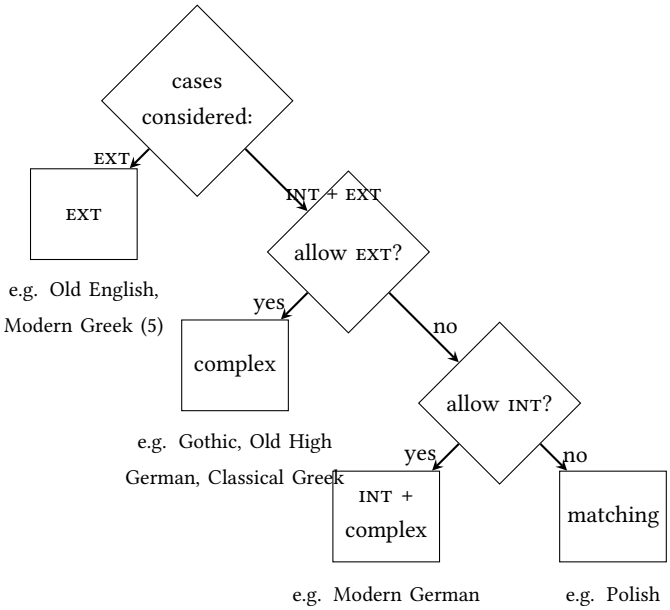


Figure 1.2: Attested patterns in headless relatives

In Table 1.39, 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 1.39.

Table 1.39: 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 1.2 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 1.2, which is number 1 in Table 1.39. 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 1.2 is number 5 in Table 1.39. 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 1.2 is number 9 in Table 1.39. 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 1.2 is number 3 in Table 1.39. 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 1.2 is number 2 in Table 1.39. 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 1.39. These patterns cannot be generated by the diagram in Figure 1.2. 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 **??**.

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 1.2. The next chapter, Chapter **??**, discusses the linguistic counterpart of this ordering.

feature

Chapter 2

Constituent containment

In Chapter 1 I introduced two descriptive parameters that generate the attested languages, as shown in Figure 2.1. The first parameter concerns whether the external case is allowed to surface when it wins the case competition (allow EXT?). This parameter distinguishes between unrestricted 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 unrestricted languages (e.g. Polish) on the other hand.

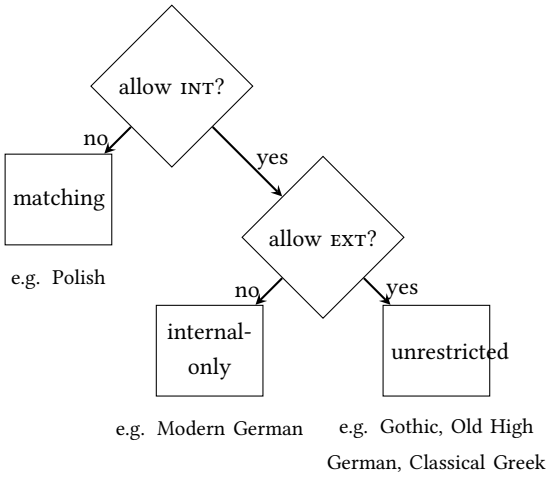


Figure 2.1: Two descriptive parameters generate three language types

"A natural question at this point is whether this typology needs to be fully stipulative, or is to some extent derivable from independent properties of individual languages" Grosu (2003)147

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.

2.1 The basic idea

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. First I introduce the assumption that headless relatives are derived from light-headed relatives. The light head bears the external case, and the relative pronoun bears the internal case, illustrated in (1).

(1) light head$_{\text{EXT}}$ [relative pronoun$_{\text{INT}}$ ...]

In a headless relative, either the light head or the relative pronoun is absent. This happens under the following condition: an element (i.e. light head or relative pro-

noun) is absent when each of its constituents is contained in a constituent of the other element (i.e. light head or relative pronoun).

Consider the light-headed relative in (2). *Thér* 'DEM.SG.M.NOM' is the light head of the relative clause. This is the element that appears in the external case, the case that reflects the grammatical role in the main clause. *Then* 'REL.SG.M.ACC' is the relative pronoun of the relative clause. This is the element that appears in the internal case, the case that reflects the grammatical role within the relative clause.

(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?'

In my proposal, the difference between a light-headed relative and a headless relative is that in a headless relative either the light head or the relative pronoun does not surface.[1] The surfacing element is the one that bears the winning case, and the absent element is the one that bears the losing case. This means that what I have so far been glossing as and calling the relative pronoun is sometimes actually the light head and sometimes the relative pronoun. To reflect that, I call the surfacing element from now on the surface pronoun.

Table 2.1 lists the two possibilities that I just laid out plus an additional one. First, the relative pronoun, which bears the internal case, can appear as the surface pronoun. Second, the light head, which bears the external case, can appear as the surface pronoun. The third option is that there is no grammatical form for the surface pronoun.

[1] Others say this too. Citko for Polish, Hanink for light-headed relatives.

Table 2.1: Options for the surface pronoun

surface pronoun
light head_{EXT}
relative $\text{pronoun}_{\text{INT}}$
*

Table 2.2 gives an overview per language type of which of the three options in Table 2.1 is chosen when the internal and external case differ.

Table 2.2: Light head and relative pronoun per language

	INT > EXT	INT < EXT	
unrestricted	relative $\text{pronoun}_{\text{INT}}$	light head_{EXT}	Old High German
internal-only	relative $\text{pronoun}_{\text{INT}}$	*	Modern German
matching	*	*	Polish
external-only	*	light head_{EXT}	not attested

The first column list the types of languages. The second column shows the situation in which the internal case is the most complex. The potential surface pronoun is the relative pronoun that bears the internal case. The third column shows the situation in which the external case is the most complex. The potential surface pronoun is the light head that bears the external case. The checkmark (✓) and asterix (*) indicate whether the potential surface pronoun appears or whether there is no grammatical form for the surface pronoun. The fourth column gives an example of the language type that I discuss in this chapter. A language of the unrestricted type, like Old High German, allows both the internal case and the external case to surface when either of them wins the case competition. The surface pronoun can be either the light head or the relative pronoun. A language of the internal-only type, like Modern German, allows only the internal case to surface when it wins the case competition, and it does not allow the external case to do so. The surface pronoun can only be the relative pronoun and not the light head. The matching type

of language, as Polish, allows neither the internal nor the external case to surface when either of them wins the case competition. The surface pronoun can neither be the relative pronoun nor the light head.[2] The language type that is not attested is the external-only type. That means that there is no language that allows only the external case to surface when it wins the case competition, and it does not allow the internal case to do so. In other words, there exist no language, in which the surface pronoun can only be the light head and not the relative pronoun.

What I have done in this section so far is reformulate the two descriptive parameters from Figure 2.1 into two other descriptive parameters. Whether the the internal case is allowed to surface corresponds to whether the relative pronoun surfaces. That implicates that the light head is absent, so it has been deleted. Similarly, whether the the external case is allowed to surface corresponds to whether the light head surfaces. That implicates that the relative pronoun is absent, so it has been deleted. I show this in Figure 2.2.

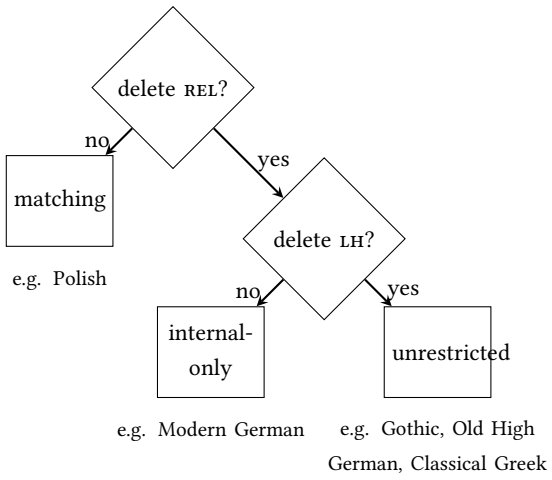


Figure 2.2: Allow REL/LH as parameters

Reformulating these parameters is not just restating the generalization in different terms. With this new formulation, I am able to identify the elements (i.e. the

[2] That is, in the unrestricted cases. Later on I show that the relative pronoun surfaces in matching contexts.

light head and the relative pronoun) that bear the cases and indicate whether it is possible to delete them in a particular language type. In my analysis, it is the relative pronoun that is sometimes able to delete the light head or the light head that is able to delete the relative pronoun.

I propose that whether or not a light head or relative pronoun) can delete the other follows from the comparison between the light head and relative pronoun. Light heads and relative pronouns namely do not only correspond to case features, but also to other features (having to do with number, gender, etc.). In this chapter I show that light heads and relative pronouns differ between the languages I describe. I illustrate how these differences in light heads and relative pronouns lead to the different language types in Figure 2.2.

In the comparison between light heads and relative pronouns, I rely on containment, just as I did in Chapter **??** when comparing cases. For case competition, I reasoned as follows. 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 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.

Figure 2.3 illustrates this for the accusative and the nominative. The XP here can be any type of case marked element. I draw a dashed circle around the features that are features in both the accusative and the nominative. As each feature of the accusative is also a feature within the nominative, the accusative wins the case competition. I illustrate this by marking the content of the dashed circle for the nominative gray.

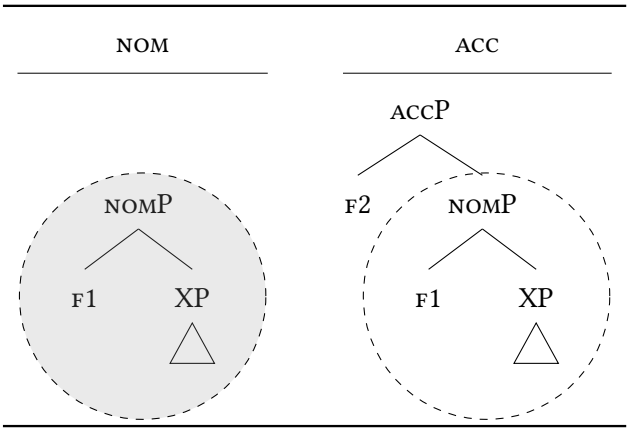


Figure 2.3: NOM vs. ACC = ACC

I formulated case containment in terms of feature containment. The accusative wins over the nominative because the accusative contains all features that the nominative contains. The image in Figure 2.3 is also compatible with a stronger requirement than feature containment: constituent containment. The accusative wins over the nominative because it contains the NOMP.

In Figure 2.4 I show the same picture as in 2.3 except for that the XP has moved out of the ACCP. I draw a dashed circle around the constituents that are constituents in both the accusative and the nominative. There is still feature containment: the nominative contains F1 and XP and so does the accusative. However, there is no longer constituent containment: the NOMP constituent containing F1 and XP is no longer a constituent in the ACCP.

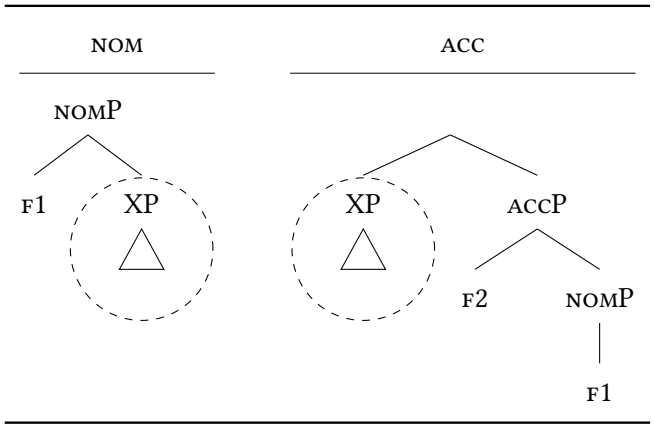


Figure 2.4: NOM vs. modified ACC ≠ ACC

I use constituent containment to explain why deletion of the light head or relative pronoun is sometimes possible and sometimes not. In Section 2.3 I show that only this stronger constituent containment requirement (and not the weaker feature containment requirement) is able to distinguish the internal-only from the matching type.

I apply the constituent containment reasoning to comparing the light head and relative pronoun. This time the most complex one is not the winner of the case competition. Instead, the most complex one is the element that can delete the other element. The relative pronoun can delete the light head, when the relative pronoun contains all constituents of the light head. The light head can delete the relative pronoun, when the light head contains all constituents of the relative pronoun.

In order to be able to compare the light head and the relative pronoun, I zoom in on their syntactic structure. In Section 2.2 to 2.4 I give arguments to support the structures I am assuming here. Figure 2.6 gives a simplified representation of them.[3] The light head and the relative pronoun partly contain the same syntactic features. The features they have in common are case (κ) and what I here call phi-features (ϕ). The light head and the relative pronoun differ from each other in that the relative pronoun in addition has a relative feature (REL).

[3]The structures in Figure 2.6 are not base structures but derived ones. I assume the base structure to be as in Figure 2.5.

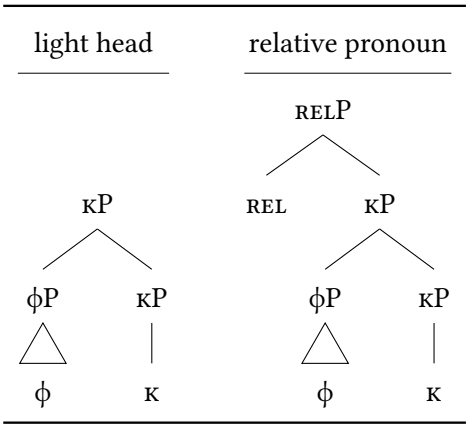


Figure 2.6: Light head and relative pronoun

I compare the light head and the relative pronoun in terms of constituent containment. The relative pronoun can delete the light head because the relative pronoun contains all constituents the light head contains. I illustrate this in Figure 2.7.

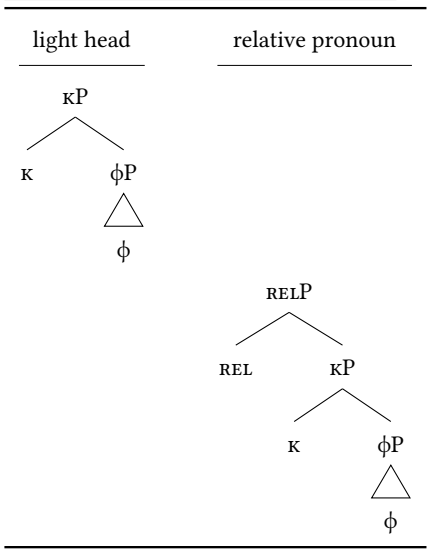


Figure 2.5: Light head and relative pronoun (base structure)

In Section 2.2 I show how I reach the derived structure. I work with the derived structure in the main text because this is the configuration in which the containment relations under discussion hold.

I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. The RELP contains the KP, so the relative pronoun can delete the light head. I illustrate this by marking the content of the dashed circle for the KP gray.

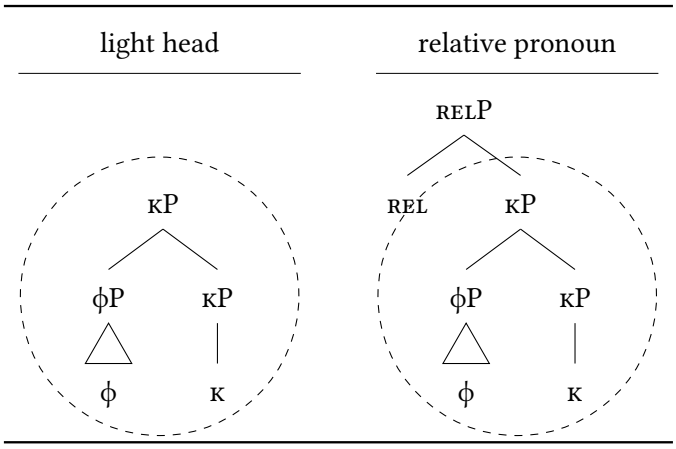


Figure 2.7: Light head and relative pronoun

Not all constituents of the relative pronoun are contained in the light head, so the light head cannot delete the relative pronoun. The language type that I describe here is the internal-only type, the one that Modern German shows. However, not all language are of the internal-only type. I assume that the structures in Figure 2.6 hold for all languages types, but that they differ in how they are spelled out, which causes the languages to be of different types. Before I come back to how the other language types deviate, I show how the internal-only type fares with different internal and external cases.

I start with an example with matching cases in Figure 2.8. The relative pronoun appears in the nominative, and the light head does too. I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. Consider the light head. The constituent NOMP is also a constituent in the relative pronoun, contained in the RELP. As the constituent of the light head is also a constituent within the relative pronoun, the light head can be absent. I illustrate this by marking the content of the dashed circles for the light head gray.

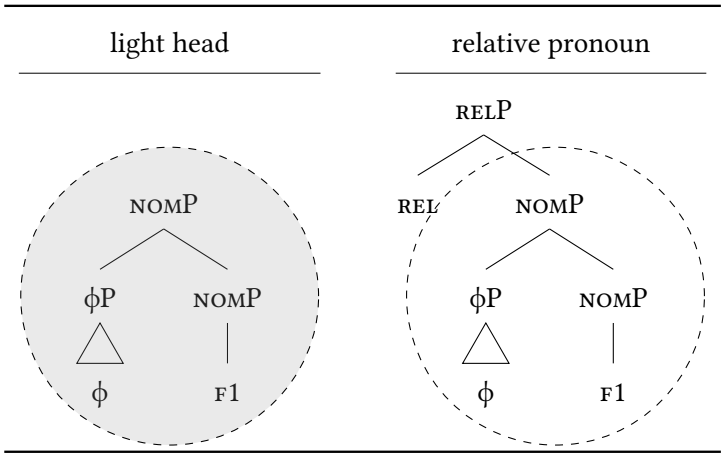


Figure 2.8: NOM relative pronoun and NOM light head

I continue with the example in Figure 2.9, in which the relative pronoun bears a more complex case than the light head. I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. Different from the example in Figure 2.8, there are now two separate constituents. I start with the right-most constituent of the light head: NOMP. This constituent is also a constituent in the relative pronoun, contained in the lower ACCP. I continue with the left-most constituent of the light head: the ϕP. This constituent is also a constituent in the relative pronoun, contained in the higher ACCP. As each constituent of the light head is also a constituent within the relative pronoun, the light head can be absent. I illustrate this by marking the content of the dashed circles for the light head gray.

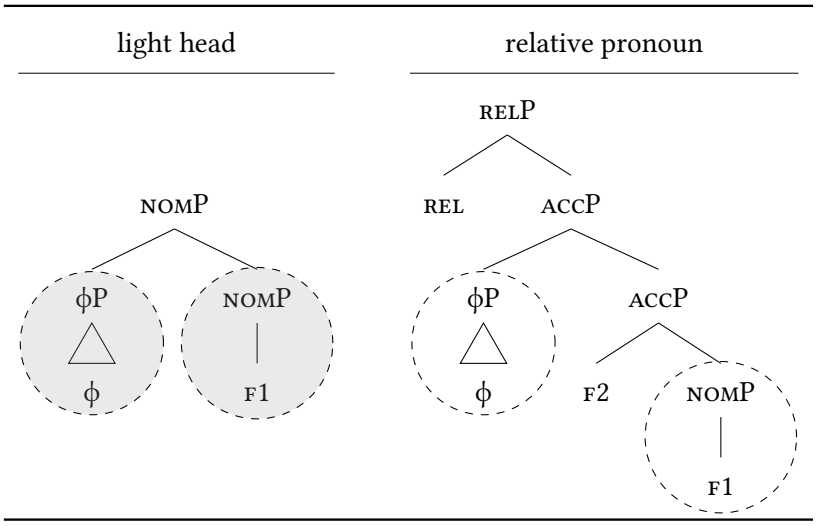


Figure 2.9: NOM light head and ACC relative pronoun

I end with the example in Figure 2.10, in which the light head bears a more complex case than the relative pronoun. I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. Different from the previous two examples in Figure 2.8 and Figure 2.9, neither of the elements contains all constituents of the other element. The relative pronoun does not contain all constituents that the light head contains, and the light head does not contain all constituents that the relative pronoun contains. As a result, none of the elements can be absent.

I start by showing that the light head cannot be absent. Consider the right-most constituent of the light head: ACCP. This constituent is not a constituent in the relative pronoun: the relative pronoun has a constituent NOMP, but it does not contain F2 to make it an ACCP. The light head has a constituent that is not a constituent in the relative pronoun, so the light head cannot be absent.

The relative pronoun can also not be absent. Consider the left-most constituent of the relative pronoun: RELP. This constituent is not a constituent in the light head: the light head lacks the features the RELP. The relative pronoun has a constituent that is not a constituent in the light head, so the relative pronoun cannot be absent. In sum, neither of the elements contains all constituents that the other element

contains, so none of the elements can be absent, and none of them is marked gray.

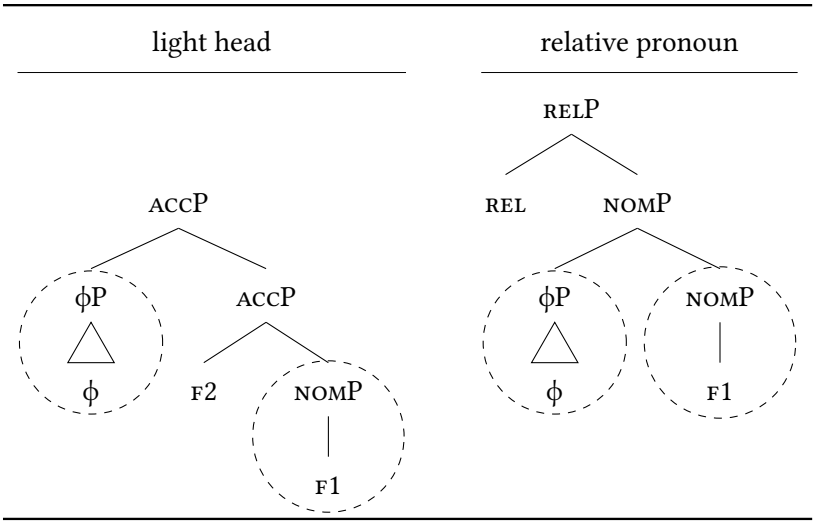


Figure 2.10: NOM relative pronoun and ACC light head

I return to the point of crosslinguistic differences. I do not derive the difference between the languages from changing the feature content of the light head and relative pronoun per language.[4] Instead, the difference comes from how the light heads and relative pronouns are spelled out. In Sections 2.2 to Section 2.4, I show how I implement this idea. For matching languages like Polish the intuition is that they package their features together differently in such a way that the constituents of the relative pronoun do not contain the constituents of the light head.

unrestricted languages like Old High German have a syncretism between light heads and relative pronouns. It seems that syncretism can fix that. I draw a parallel with case syncretism in headless relatives, but also syncretism outside of case and headless relatives.

The structures in Figures 2.8 to 2.10 exclude the external-only pattern. There is no way that each constituent of the light head contains a constituent of the relative

[4]The feature content of the unrestricted languages differs slightly from that of the internal-only and matching languages. This is due to the fact that this language type uses a different type of relative pronoun. The basic idea of the relative pronoun having at least one more feature than the light head remains the same.

pronoun but not the other way around.

I return to the metaphor with the committee that I introduced in Section 1.1. I wrote that first case competition takes place, in which a more complex case wins over a less complex case. This case competition can now be reformulated into a more general mechanism, namely constituent comparison. A more complex case corresponds to a constituent that contains the constituent that corresponds to a less complex case. Subsequently, I noted that there is a committee it can either approve this case or not approve it. The 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). The information that the committee uses for the approval of the case relies on the same mechanism as case competition, namely constituent comparison. A relative pronoun corresponds to a constituent that contains the constituent that corresponds to a light head. In other words, the grammaticality of a headless relative depends on several instances of constituent comparison. The constituents that are compared are those of the light head and the relative pronoun, which both elements bear their own case. Case is special in that it can differ from sentence to sentence within a language. Therefore, its effect can be observed within a particular language. The part of the light head and relative pronoun that does not involve case features is stable within a language.

In this dissertation I describe different language types in case competition in headless relatives. In my account, the different language types are a result of a comparison of the light head and the relative pronoun in the language. The larger syntactic context in which this takes place should be kept stable. The operation that deletes the light head or the relative pronoun is the same for all language types. In this work, I do not specify on which larger syntactic structure and which deletion operation should be used. In Section 2.7 I discuss existing proposals on these topics and to what extend they are compatible with my account.

To summarize, in this section I introduced the assumptions that headless relatives are derived from light-headed relatives and that relative pronouns contain at least one more feature than light heads. A headless relative is grammatical when either the light head or the relative pronoun contains all features of the other element. This set of assumptions derives that only a more complex case can surface and that there is no language of the external-only type.

2.2 Deriving the internal-only type

In the internal-only pattern..

Table 2.3: Light head and relative pronoun per language

	INT > EXT	INT < EXT	
internal-only	relative pronoun$_{INT}$	*	Modern German

Because of the case facts it is already clear that the relative pronoun is the surface pronoun. I independently show this with data from extraposition. Then I decompose the relative pronouns intro three morphemes and I show which features each of the morphemes corresponds to. I propose that the light head is .. (Schwarz). Finally, I compare the constituents of the light head and the relative pronoun. I show that the relative pronoun surfaces when the internal and external case match and when the internal case is more complex. The light head cannot delete the relative pronoun, so there is no grammatical form to surface when the external case is more complex.

I show that the surface pronoun in Modern German headless relatives is the relative pronoun. The evidence comes from extraposition data. 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.

The sentences in (3) show that it is possible to extrapose a CP. In (3a), 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 (3b).

(3) 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)

(4) illustrates that it is impossible to extrapose a DP. The clausal object of (3) is replaced by the simplex noun phrase *die Sache* 'that matter'. In (4a) the object, marked in bold, appears in its base position. In (4b) it is extraposed, and the sentence is no longer grammatical.

(4) 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 (5) 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 (5a), the relative clause and its head appear in base position. In (5b), the relative clause is extraposed. This is grammatical, because it is possible to extrapose CPs in Modern German. In (5c), the relative clause and the head are extraposed. This is ungrammatical, because it is possible to extrapose DPs.

(5) 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. (6) is the same sentence as in (5) only without the overt head. The relative clause is marked in bold again. In (6a), the relative clause appears in base position. In (6b), the relative clause is

extraposed. This is grammatical, because it is possible to extrapose CPs in Modern German. In (6c), 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.

(6) 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 surface pronoun in Modern German is the relative pronoun.

Table 2.4: Modern German relative pronouns

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

Table 2.5: Modern German demonstrative pronouns

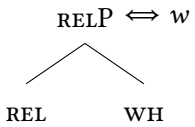
	M	N	F
NOM	d-er	d-as	d-ie
ACC	d-en	d-as	d-ie
DAT	d-em	d-em	d-er

Interesting that there is no feminine headless relative pronoun. This happens more often btw.

The wh is used as interrogative and as relative pronoun.

(7) Wer ist da?
who is there
'Who is there?'

Hachem describes it as set of alternatives etc. etc. Lander and Baunaz have this containment between REL, WH, DEM etc. I adopt the REL/WH part.

(8) 

This leaves the suffix. I split this up in two parts. I see the final consonant in different places.

Table 2.6: Modern German relative pronouns

	AN	INAN
NOM	w-e-r	w-a-s
ACC	w-e-n	w-a-s
DAT	w-e-m	(w-e-m)

In strong adjectives.

Table 2.7: Modern German strong adjectives

	M	N	F
NOM	neu-ə-r	neu-ə-s	neu-ə
ACC	neu-ə-n	neu-ə-s	neu-ə
DAT	neu-ə-m	neu-ə-m	neu-ə-r

In pronouns, in the non-suppletives.

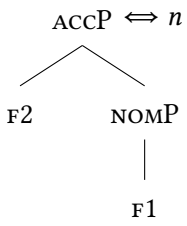
Table 2.8: Modern German personal pronouns

	M	N	F
NOM	er	es	sie
ACC	ih-n	es	sie
DAT	ih-m	ih-m	ih-r

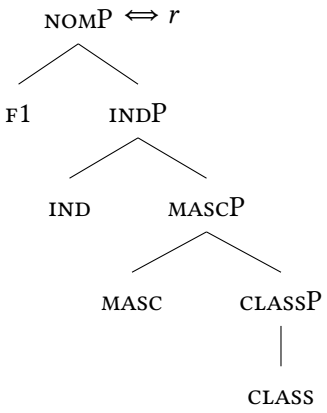
Zooming in on *r* and *n*, one knows for sure that the consonants express case. In a second I show how they interact with gender.

I use the case features introduced by Caha (2009), which I already discussed in Chapter **??**. F1 refers to a nominative, and F1 and F2 refers to an accusative.

(9)



(10)



For now, this leaves the vowel to express features having to do with referentiality, gender, number and deixis.

I use pronominal features that are distinguished by Harley and Ritter (2002): 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.

In addition, I use the Lander/Haegeman features for deixis. In WH-elements the distal is used. This can be shown in English.

(11) a. th-is
DEM-PROX

b. th-at
DEM-DIST

c. wh-at
WH-PROX

5

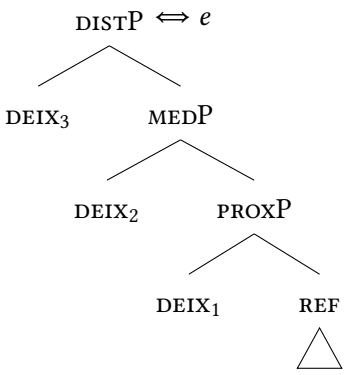
I give the lexical entries for the morphemes.

[5]Conceptually, this can be made sense of if you see distal as something far away from you as a speaker, because it is unknown to you. Something that is known to you is expressed with a proximal.

(i) a. Yesterday I talked to this woman, and she told me all I needed to know.
b. Please tell me about that thing later.

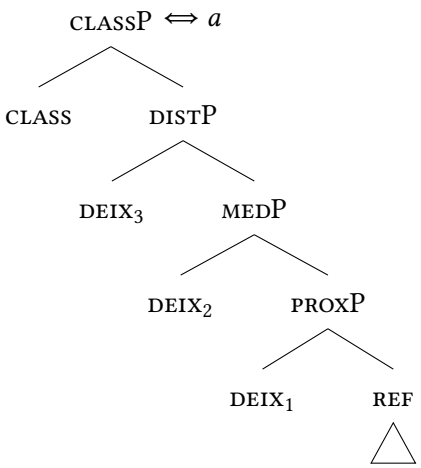
cite Wiltschko.

(12)

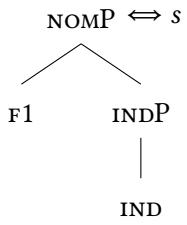


Now I come back to the interaction between gender and case. For the neuter relative pronoun the vowel is different: *a*. So, this needs to be reflected in the features: I left out MASC. However, there also needs to be a difference in lexical entries between the final consonant for the neuter and for the masculine. Therefore, I let the *s* spell out the IND feature.

(13)

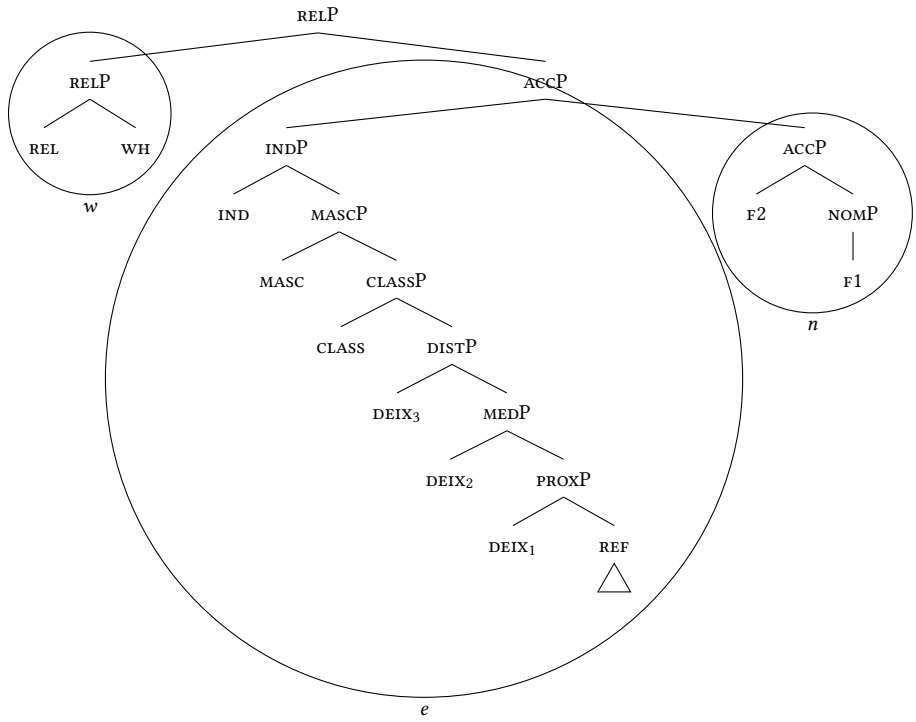


(14)

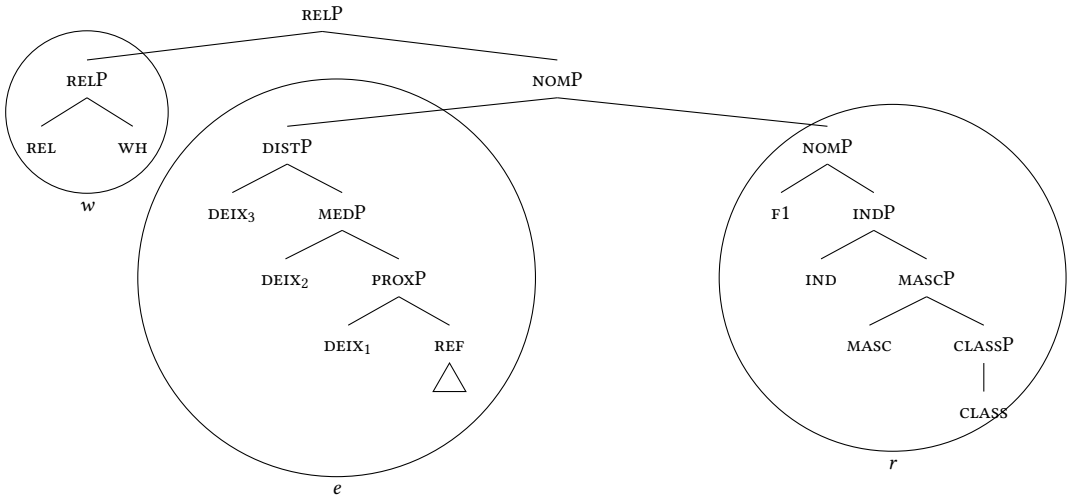


Now I show how the relative pronoun are built.

(15)



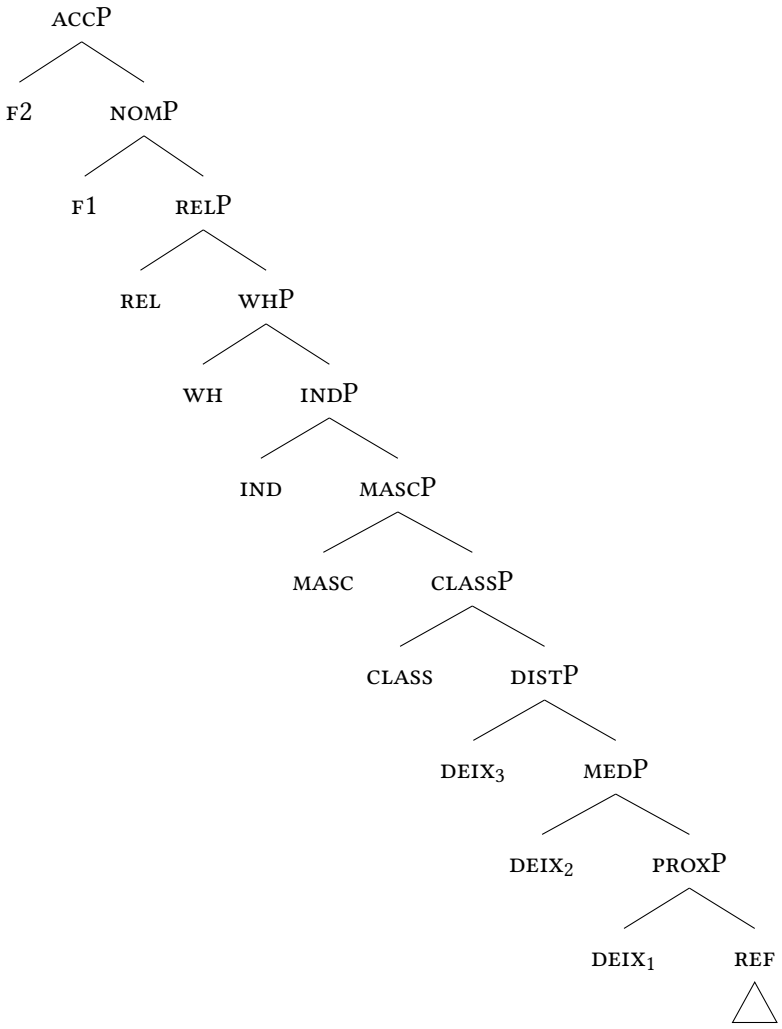
(16)



But how are these relative pronouns formed, how are the features packaged together the way they are? The basis of these relative pronouns are a functional sequence, and there is a spellout algorithm that drives the moving around of elements.

The functional sequence is this:

(17)



The spellout algorithm is this.

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

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

c. If (b) fails, move the complement of F, and retry (a).

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

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

If the spellout procedure in (18) fails, backtracking takes place.

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

(21) **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.

difference between suffix and prefix

Note here that the functional sequence is identical for all languages. The spellout algorithm is also the same for all languages. It is only the lexical entries that differ per language. It is these lexical entries that lead to different constituents within the relative pronoun, which in turn lead to different grammaticality patterns in headless relatives.

The different constituency, that is crucial for my proposal, is driven by the lexical entries. Features are merged one by one and they are attempted to be realized. If that does not work phrasally, we do the first movement, the second movement, we try backtracking or we build a complex spec.

The constituent for *w* in Modern German arises because a complex spec was created. The constituent with *r*/*n* arises because they are suffixes onto the whole structure.

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.

(22) 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.

(23) 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)

I propose that it is the weak one that is the head of the relative clause. Give reasons from Schwarz?cThe strong article cannot be used because it does not go together with the free choice interpretation of WH-relatives
6

[6]Hanink says it is actually the strong one that is the head of the relative clause. My informants claim that the interpretation of *der wer* is very different from *wer.* although she does say that the feature specification of d is exactly the same as that of w..

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..

but why not in Polish? It then cannot be because of some feature.. or ə cannot realize a focus feature while the Polish counterpart can..

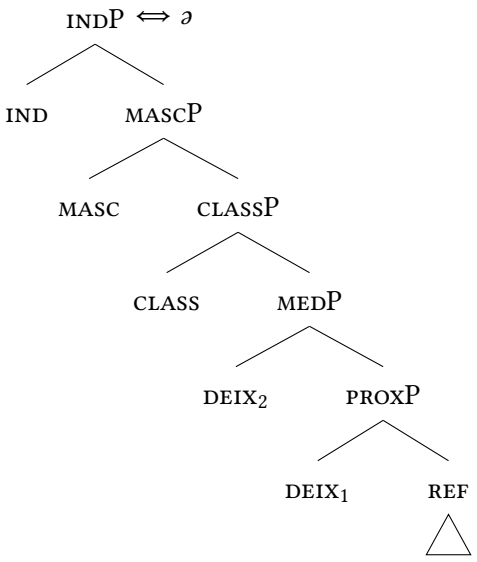
(24) *Sie ist vom Mann, mit dem sie gestern ausgegangen ist, versetzt worden.

Lexical entry for the light head

(25) a. d-er Baum dort
D-DEM$_{\text{STRONG}}$ tree there
'that tree there'

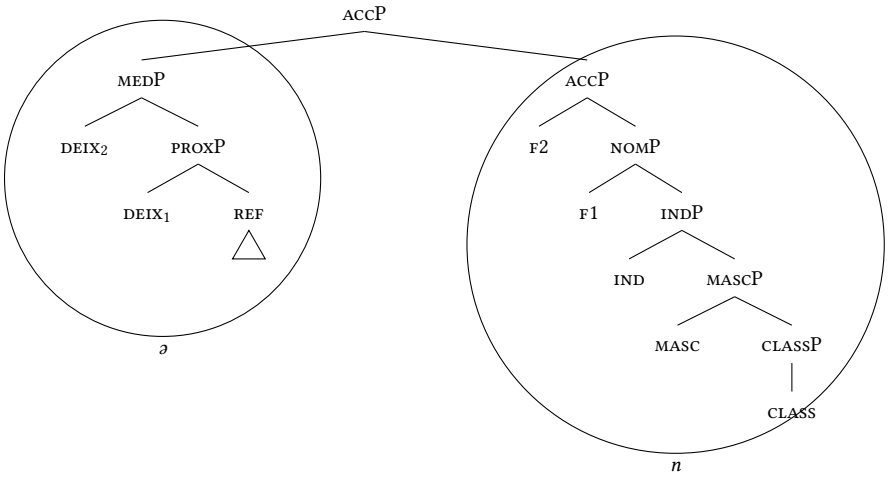
b. d-ies-ər Baum hier
D-EMPH-DEM$_{\text{WEAK}}$ tree here
'this tree here'

(26)

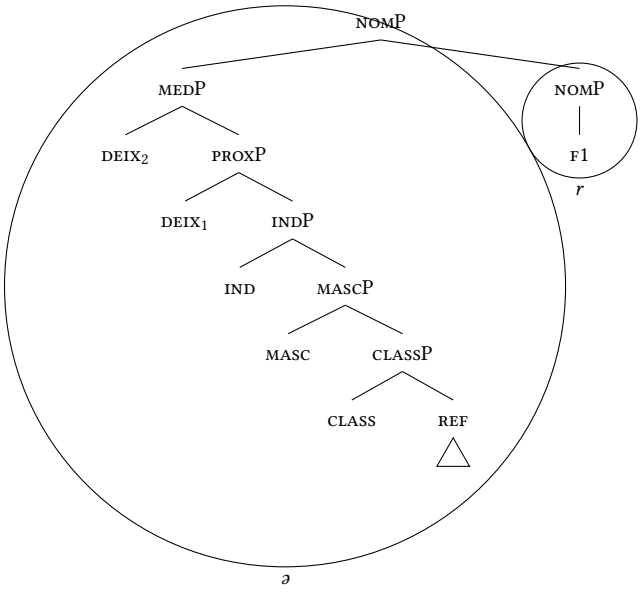


I show how the light heads are built.

(27)



(28)



Consider the example in (29), in which the internal nominative case competes against the external nominative case. The relative clause is marked in bold, and the light head and the relative pronoun are underlined. The internal case is nominative, as the predicate *mögen* 'to like' takes nominative subjects. The relative pronoun *wer* 'REL.AN.NOM' appears in the nominative case. This is the element that surfaces. The external case is nominative as well, as the predicate *besuchen* 'to visit' also takes nominative subjects. The light head *ər* 'DEM.AN.NOM' appears in the nominative

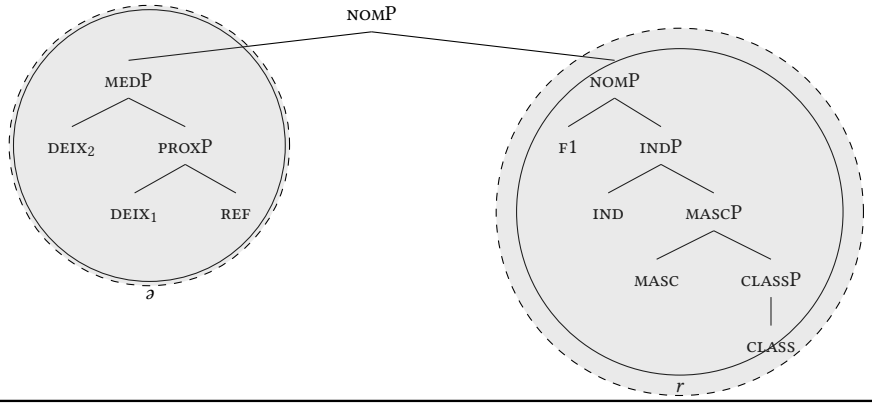
case. It is placed between square brackets because it does not surface.

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

In Figure 2.11, I give the syntactic structure of the light head at the top and the syntactic structure of the relative pronoun at the bottom. The relative pronoun consists of three morphemes: *w*, *e* and *r*. The light head consists of two morphemes: *ə* and *r*. As usual, I circle the part of the structure that corresponds to a particular lexical entry, and I place the corresponding phonology under it. I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. As each constituent of the light head is also a constituent within the relative pronoun, the light head can be absent. I illustrate this by marking the content of the dashed circles for the light head gray.

I explain this constituent by constituent. I start with the right-most constituent of the light head that spells out as *r* (NOMP). This constituent is also a constituent in the relative pronoun. I continue with the left-most constituent of the light head that spells out as *ə* (MEDP). This constituent is also a constituent in the relative pronoun, contained in DISTP. Both constituent of the light head are also a constituent within the relative pronoun, and the light head can be absent.

NOM light head *ə-r*



NOM relative pronoun *w-e-r*

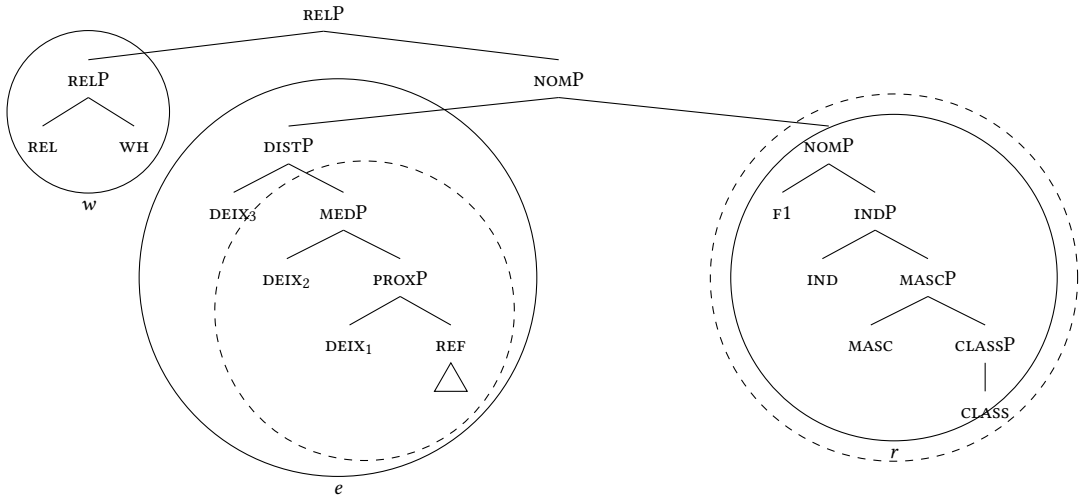


Figure 2.11: Modern German EXT_{NOM} vs. INT_{NOM} = *wer*

Consider the example in (30), in which the internal accusative case competes against the external nominative case. The relative clause is marked in bold, and the light head and the relative pronoun are underlined. The internal case is accusative, as the predicate *mögen* 'to like' takes accusative objects. The relative pronoun *wen* 'REL.AN.ACC' appears in the accusative case. This is the element that surfaces. The

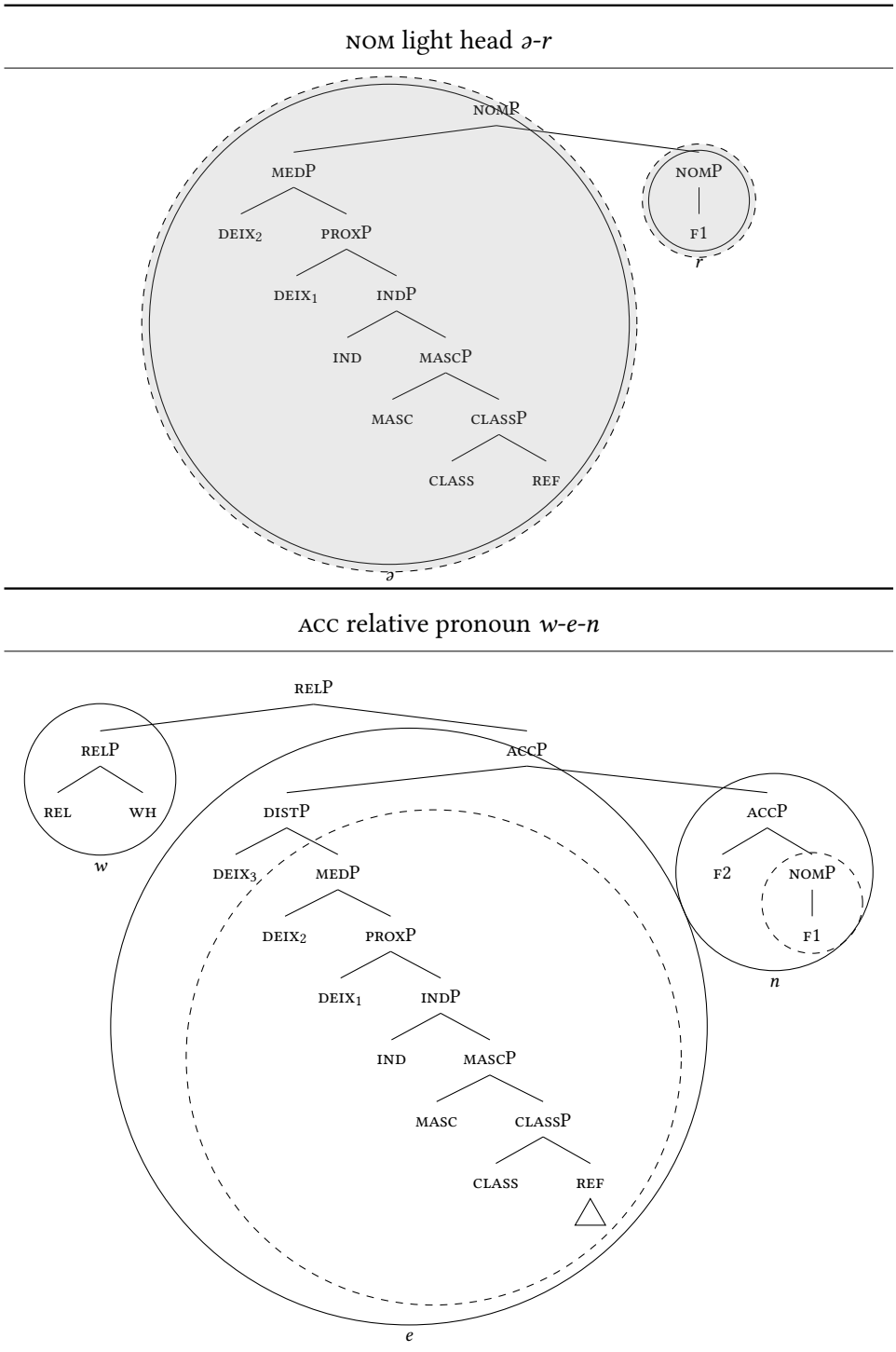
external case is nominative, as the predicate *besuchen* 'to visit' takes nominative subjects. The light head *ər* 'DEM.AN.NOM' appears in the nominative case. It is placed between square brackets because it does not surface.

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

In Figure 2.12, I give the syntactic structure of the light head at the top and the syntactic structure of the relative pronoun at the bottom. The relative pronoun consists of three morphemes: *w*, *e* and *n*. The light head consists of two morphemes: *ə* and *r*. Again, I circle the part of the structure that corresponds to a particular lexical entry, and I place the corresponding phonology under it. I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. As each constituent of the light head is also a constituent within the relative pronoun, the light head can be absent. I illustrate this by marking the content of the dashed circles for the light head gray.

I explain this constituent by constituent. I start with the right-most constituent of the light head that spells out as *r* (NOMP). This constituent is also a constituent in the relative pronoun, contained in ACCP. I continue with the left-most constituent of the light head that spells out as *ə* (MEDP). This constituent is also a constituent in the relative pronoun, contained in DISTP. Both constituent of the light head are also a constituent within the relative pronoun, and the light head can be absent.

Figure 2.12: Modern German EXT_{NOM} vs. INT_{ACC} = *wen*



Consider the examples in (31), in which the internal nominative case competes against the external accusative case. The relative clauses are marked in bold, and the light heads and the relative pronouns are underlined. It is not possible to make a grammatical headless relative in this situation. The internal case is nominative, as the predicate *sein* 'to be' takes nominative subjects. The relative pronoun *wer* 'REL.AN.NOM' appears in the nominative case. The external case is accusative, as the predicate *einladen* 'to invite' takes accusative objects. The light head *ən* 'DEM.AN.ACC' appears in the accusative case. (31a) is the variant of the sentence in which the light head is absent (indicated by the square brackets) and the relative pronoun surfaces, and it is ungrammatical. (31b) is the variant of the sentence in which the relative pronoun is absent (indicated by the square brackets) and the light head surfaces, and it is ungrammatical too.

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

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

In Figure 2.13, I give the syntactic structure of the light head at the top and the syntactic structure of the relative pronoun at the bottom. The relative pronoun consists of three morphemes: *w*, *e* and *r*. The light head consists of two morphemes: *ə* and *n*. Again, I circle the part of the structure that corresponds to a particular lexical entry, and I place the corresponding phonology under it. I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. Neither of the elements contains all constituents that the other element contains. The relative pronoun does not contain all constituents that the light head contains, and the light head does not contain all constituents that the

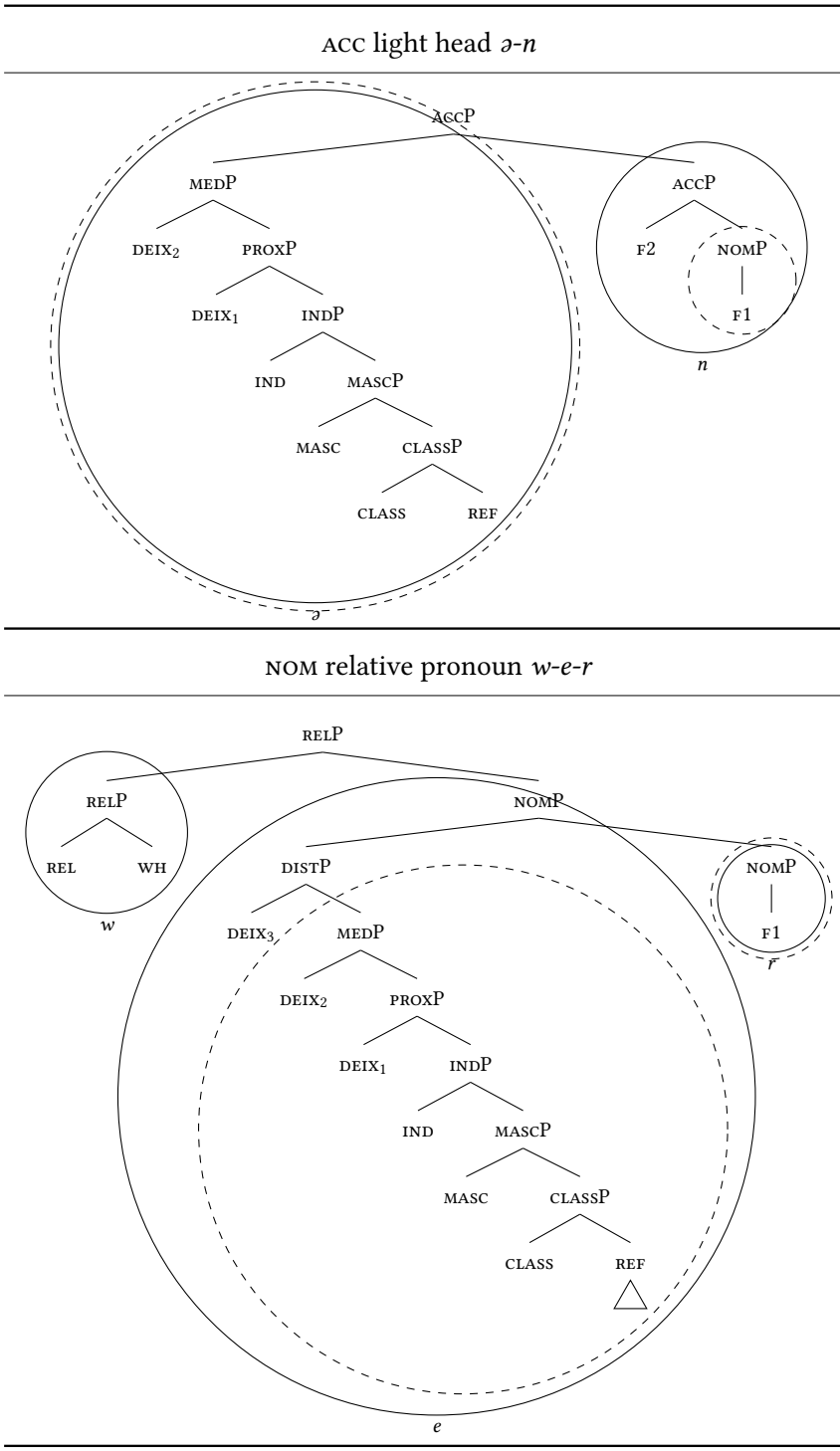
relative pronoun contains. As a result, none of the elements can be absent.[7]

I explain this constituent by constituent. I start by showing that the light head cannot be absent. Consider the right-most constituent of the light head that spells out as *n* (ACCP). This constituent is not a constituent in the relative pronoun: the relative pronoun has a constituent NOMP, but it does not contain F2 to make it an ACCP. The light head has a constituent that is not a constituent in the relative pronoun, so the light head cannot be absent.

The relative pronoun can also not be absent. Consider the middle constituent of the relative pronoun that spells out as *e* (DISTP). This constituent is not a constituent in the light head: the light head has a constituent MEDP, but it does not contain DEIX_3 to make it an DISTP. The same hold for the left-most constituent of the relative pronoun that spells out as *w* (RELP). The light head lacks the features WH and REL that form the RELP. The relative pronoun has constituents that are not constituents in the light head, so the relative pronoun cannot be absent. In sum, neither of the elements contains all constituents that the other element contains, and none of the elements can be absent, so none of them is marked gray.

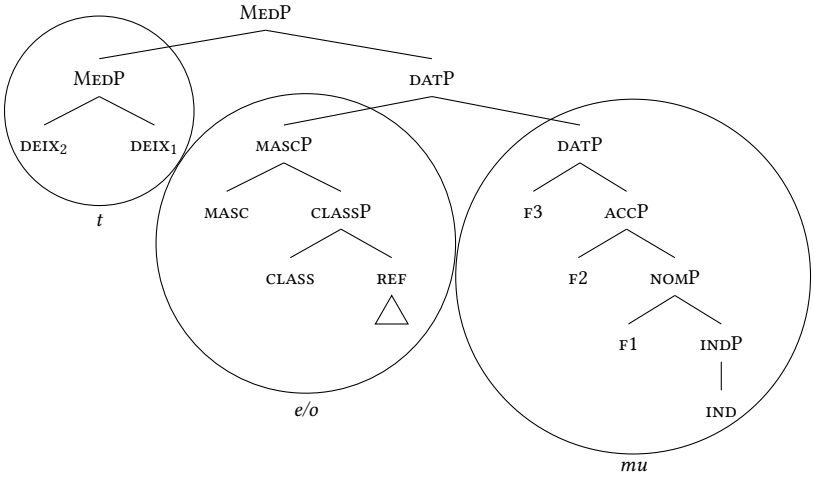
[7] Why do we not see this result surface? Very good question.

Figure 2.13: Modern German EXT_{ACC} vs. $\text{INT}_{\text{NOM}} \neq$ *wer*/*ən*

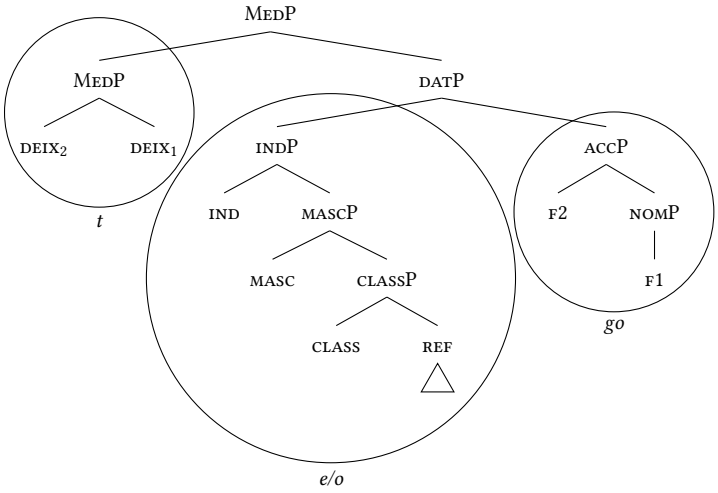


2.3 Deriving the matching type

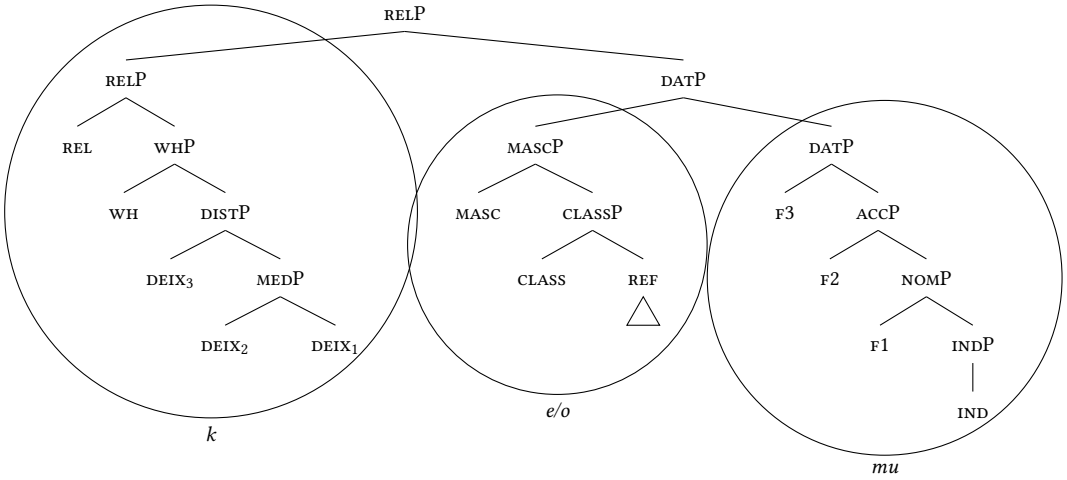
(32) Polish: EXT DAT



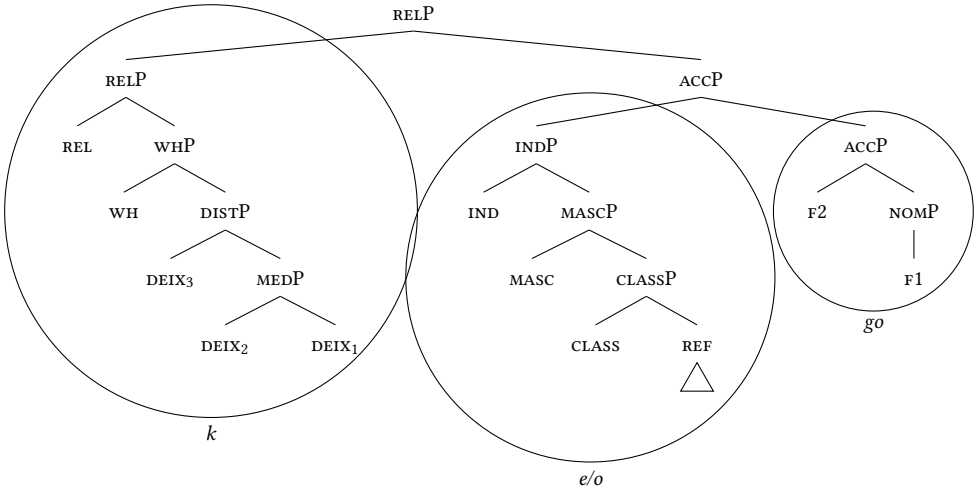
(33) Polish: EXT ACC



(34) Polish: INT DAT



(35) Polish: INT ACC



Consider the example in (36), in which the internal accusative case competes against the external accusative case. The relative clause is marked in bold, and the light head and the relative pronoun are underlined. The internal case is accusative, as the predicate *lubić* 'to like' takes accusative objects. The relative pronoun *kogo* 'REL.AN.ACC' appears in the accusative case. This is the element that surfaces. The external case is accusative as well, as the predicate *lubić* 'to like' also takes accusative objects. The light head *tego* 'DEM.AN.ACC' appears in the accusative case. It is placed between square brackets because it does not surface.

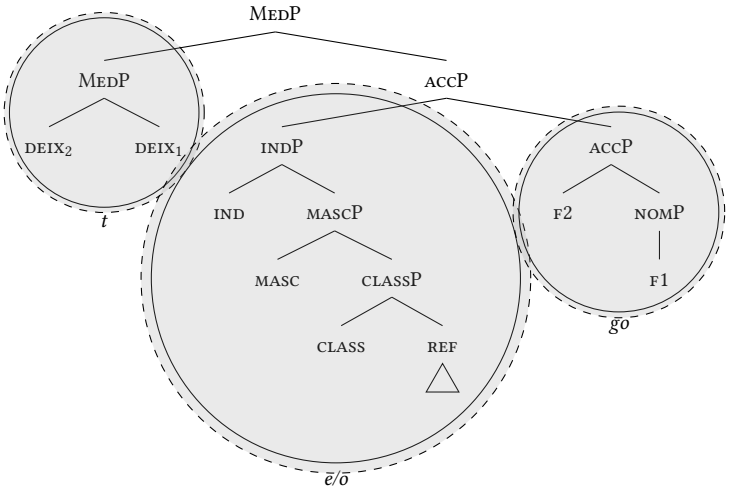
(36) Jan lubi [tego] **kogo -kolkwiek**
Jan like.3SG$_{[ACC]}$ DEM.ACC.AN.SG REL.ACC.AN.SG ever Maria
Maria lubi.
like.3SG$_{[ACC]}$
'Jan likes whoever Maria likes.'
(Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

In Figure **??**, I give the syntactic structure of the light head at the top and the syntactic structure of the relative pronoun at the bottom. The relative pronoun consists of three morphemes: *k*, *o* and *go*. The light head consists of three morphemes: *t*, *e* and *go*. As usual, I circle the part of the structure that corresponds to a particular lexical entry, and I place the corresponding phonology under it. I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. As each constituent of the light head is also a constituent within the relative pronoun, the light head can be absent. I illustrate this by marking the content of the dashed circles for the light head gray.

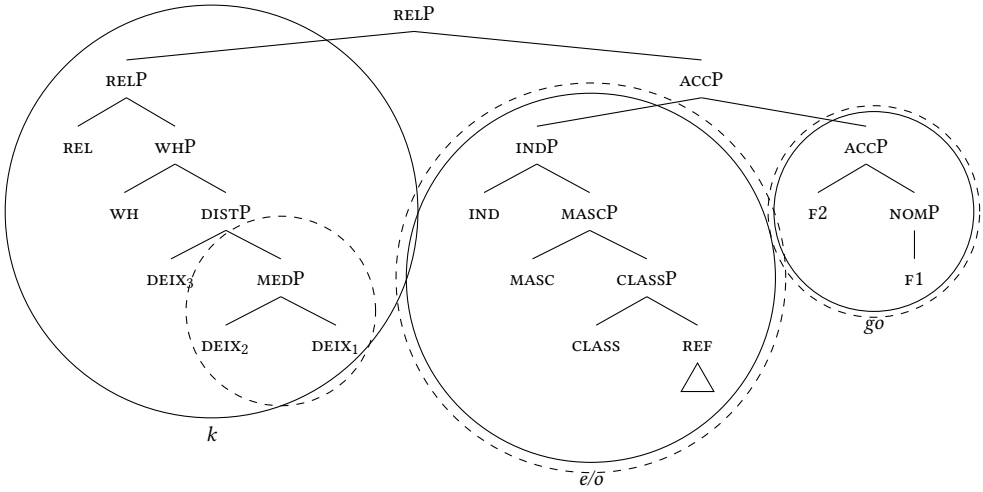
I explain this constituent by constituent. I start with the right-most constituent of the light head that spells out as *go* (ACCP). This constituent is also a constituent in the relative pronoun. I continue with the middle constituent of the light head that spells out as *e* (INDP). This constituent is also a constituent in the relative pronoun. I continue with the left-most constituent of the light head that spells out as *t* (MEDP). This constituent is also a constituent in the relative pronoun, contained in RELP. All three constituent of the light head are also a constituent within the relative pronoun, and the light head can be absent.

Figure 2.14: Polish EXT_{ACC} vs. INT_{ACC} = *kogo*

ACC light head *t-e-go*



ACC relative pronoun *k-o-go*



Consider the examples in **??**, in which the internal dative case competes against the external accusative case. The relative clauses are marked in bold, and the light

heads and the relative pronouns are underlined. It is not possible to make a grammatical headless relative in this situation. The internal case is dative, as the predicate *dokuczać* 'to tease' takes dative objects. The relative pronoun *komu* 'REL.AN.DAT' appears in the nominative case. The external case is accusative, as the predicate *lubić* 'to like' takes accusative objects. The light head *tego* 'DEM.AN.ACC' appears in the accusative case. **??** is the variant of the sentence in which the light head is absent (indicated by the square brackets) and the relative pronoun surfaces, and it is ungrammatical. **??** is the variant of the sentence in which the relative pronoun is absent (indicated by the square brackets) and the light head surfaces, and it is ungrammatical too.

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

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

In Figure 2.15, I give the syntactic structure of the light head at the top and the syntactic structure of the relative pronoun at the bottom. The relative pronoun consists of three morphemes: *k*, *o* and *mu*. The light head consists of three morphemes: *t*, *e* and *go*. Again, I circle the part of the structure that corresponds to a particular lexical entry, and I place the corresponding phonology under it. I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. Neither of the elements contains all constituents that the other element contains. The relative pronoun does not contain all constituents that the light head contains, and the light head does not contain all constituents that the

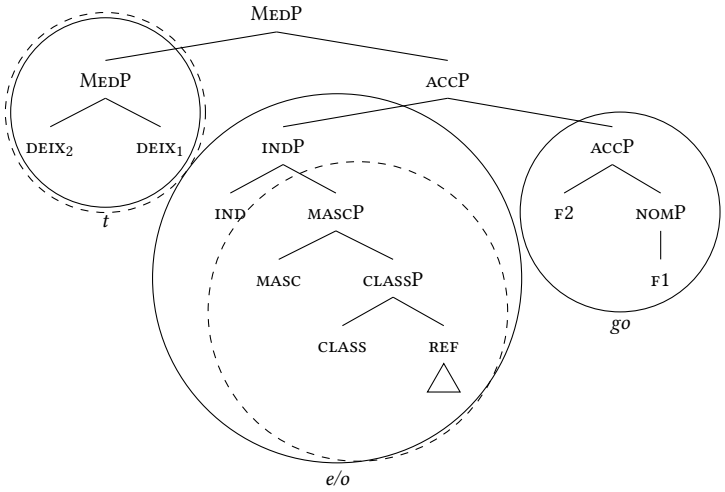
relative pronoun contains. As a result, none of the elements can be absent.

I explain this constituent by constituent. I start by showing that the light head cannot be absent. Consider the right-most constituent of the light head that spells out as *go* (ACCP). This constituent is not a constituent in the relative pronoun: the relative pronoun has a constituent ACCP, contained in DATP, but that constituent also contains *ind*P. Consider the middle constituent of the light head that spells out as *e* (INDP). This constituent is not a constituent in the relative pronoun: the relative pronoun has a constituent INDP, contained in DATP, but that constituent does not contain REF, CLASS and MASC. Note here that there is feature containment: the relative pronoun contains all features that the light head contains. It is here crucial to use the stronger constituent containment requirement. The light head has a constituent that is not a constituent in the relative pronoun, so the light head cannot be absent.

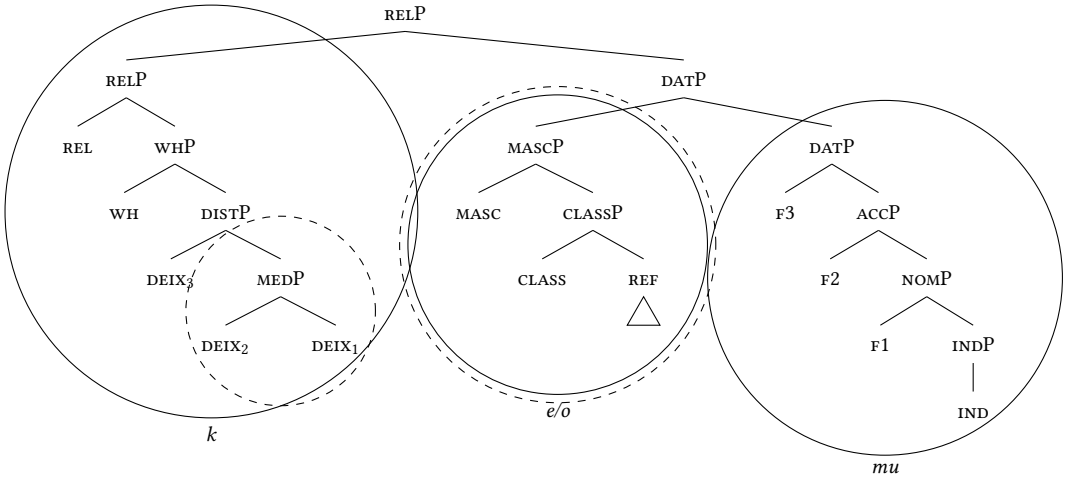
The relative pronoun can also not be absent. Consider the right-most constituent of the relative pronoun that spells out as *mu* (DATP). This constituent is not a constituent in the light head: the light head has a constituent ACCP, but it does not contain INDP and also not F3 to make it a DATP. The same hold for the left-most constituent of the relative pronoun that spells out as *k* (RELP). The light head lacks the features DIST, WH and REL that form the RELP. The relative pronoun has constituents that are not constituents in the light head, so the relative pronoun cannot be absent. In sum, neither of the elements contains all constituents that the other element contains, and none of the elements can be absent, so none of them is marked gray.

Figure 2.15: Polish EXT_{ACC} vs. $\text{INT}_{\text{DAT}} \neq$ *tego*/*komu*

ACC light head *t-e-go*



ACC relative pronoun *k-o-mu*



Consider the examples in **??**, in which the internal dative case competes against the external accusative case. The relative clauses are marked in bold, and the

light heads and the relative pronouns are underlined. It is not possible to make a grammatical headless relative in this situation. The internal case is accusative, as the predicate *wpuścić* 'to let' takes accusative objects. The relative pronoun *kogo* 'REL.AN.ACC' appears in the nominative case. The external case is dative, as the predicate *ufać* 'to trust' takes dative objects. The light head *temu* 'DEM.AN.DAT' appears in the accusative case. **??** is the variant of the sentence in which the light head is absent (indicated by the square brackets) and the relative pronoun surfaces, and it is ungrammatical. **??** is the variant of the sentence in which the relative pronoun is absent (indicated by the square brackets) and the light head surfaces, and it is ungrammatical too.

(38) a. *Jan ufa [temu] **kogo -kolkwiek wpuścil do**
Jan trust.3SG$_{[DAT]}$ REL.DAT.AN.SG ever let.3SG$_{[ACC]}$ to home
domu.

'Jan trusts whoever he let into the house.'
(Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

b. Jan ufa temu [**kogo**] **-kolkwiek wpuścil do**
Jan trust.3SG$_{[DAT]}$ REL.DAT.AN.SG ever let.3SG$_{[ACC]}$ to home
domu.

'Jan trusts whoever he let into the house.'
(Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

In Figure 2.16, I give the syntactic structure of the light head at the top and the syntactic structure of the relative pronoun at the bottom. The relative pronoun consists of three morphemes: *k*, *o* and *go*. The light head consists of three morphemes: *t*, *e* and *mu*. Again, I circle the part of the structure that corresponds to a particular lexical entry, and I place the corresponding phonology under it. I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. Neither of the elements contains all constituents that the other element contains. The relative pronoun does not contain all constituents that the light head contains, and the light head does not contain all constituents that the

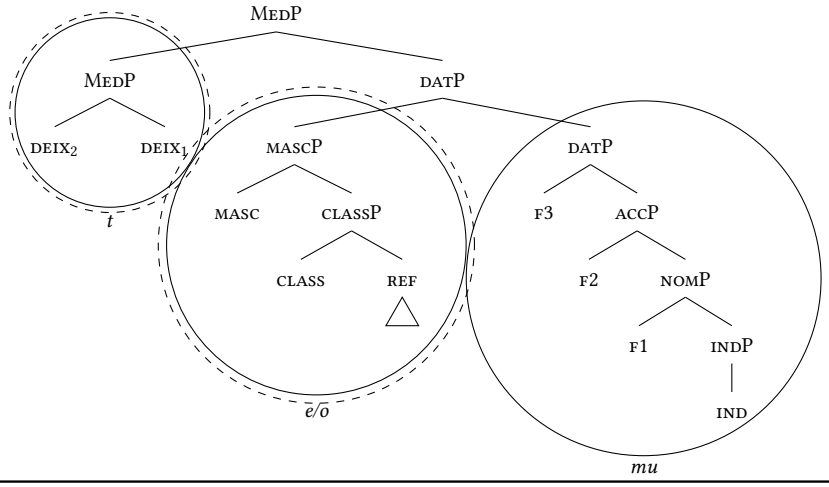
relative pronoun contains. As a result, none of the elements can be absent.

I explain this constituent by constituent. I start by showing that the light head cannot be absent. Consider the right-most constituent of the light head that spells out as *mu* (DATP). This constituent is not a constituent in the relative pronoun: the relative pronoun has a constituent ACCP, but it does not contain INDP and also not F3 to make it a DATP. Consider the middle constituent of the light head that spells out as *e* (INDP). This constituent is not a constituent in the relative pronoun: the relative pronoun has a constituent INDP, contained in DATP, but that constituent does not contain REF, CLASS and MASC. The light head has a constituent that is not a constituent in the relative pronoun, so the light head cannot be absent.

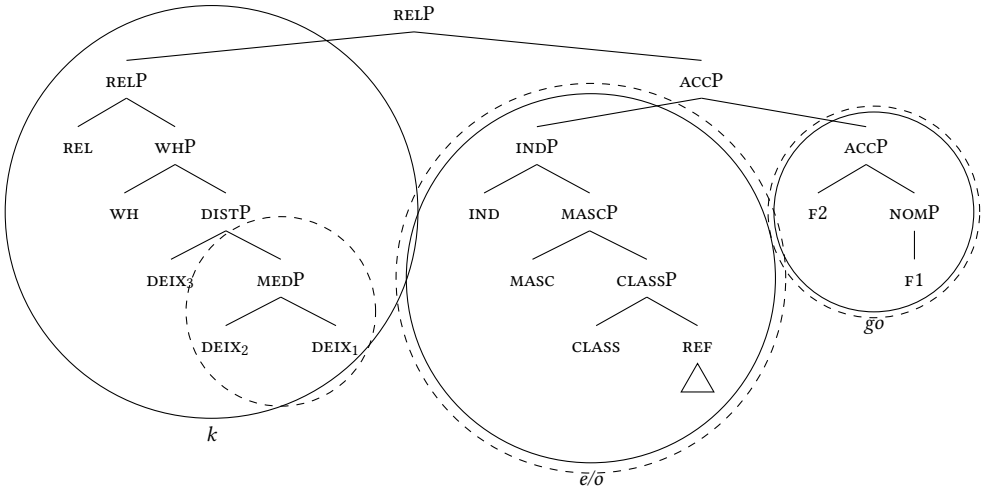
The relative pronoun can also not be absent. Consider the right-most constituent of the relative pronoun that spells out as *go* (ACCP). This constituent is not a constituent in the light head: the light head has a constituent ACCP, contained in DATP, but that constituent also contains *ind*P. Consider left-most constituent of the relative pronoun that spells out as *k* (RELP). The light head lacks the features DIST, WH and REL that form the RELP. The relative pronoun has constituents that are not constituents in the light head, so the relative pronoun cannot be absent. In sum, neither of the elements contains all constituents that the other element contains, and none of the elements can be absent, so none of them is marked gray.

Figure 2.16: Polish EXT_{DAT} vs. $\text{INT}_{\text{ACC}} \neq$ *temu*/*kogo*

DAT light head *t-e-mu*



ACC relative pronoun *k-o-go*



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?

(39) Jan czyta to, co Maria czyta.
Jan read this what Maria reads
'Jan reads what Maria reads.' (Polish, Citko 2004: 96)

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

(40) 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.

(41) 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

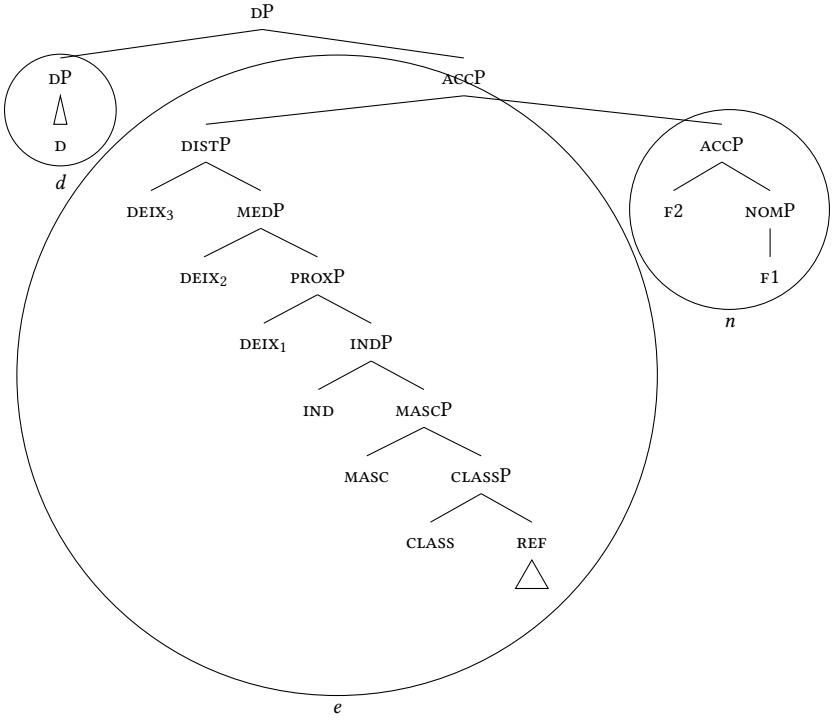
2.4 Deriving the unrestricted type

(42) 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)

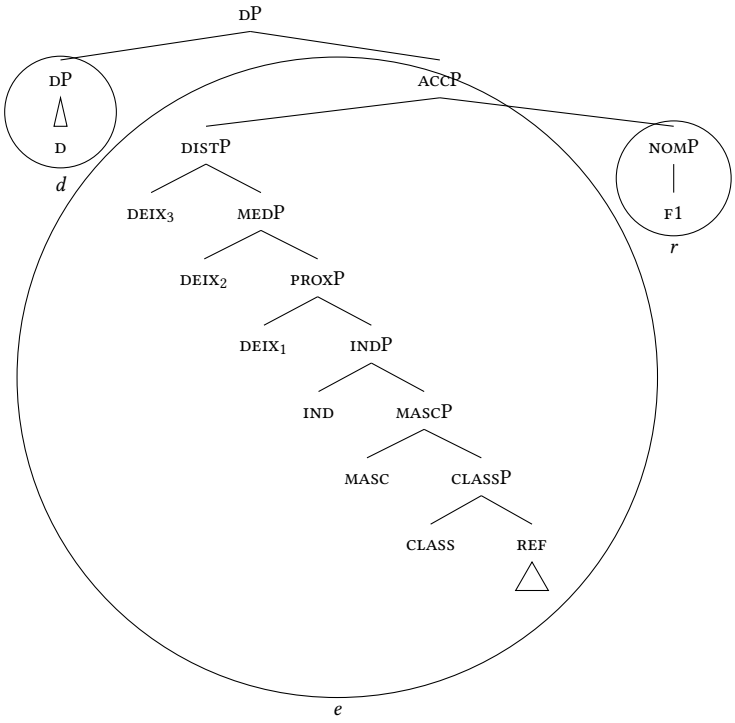
(43) Thíz ist **then** **sie** **zéllent**
DEM.SG.N.NOM be.PRES.3SG$_{[NOM]}$ REL.SG.M.ACC 3PL.M.NOM tell.PRES.3PL$_{[ACC]}$
'this is the one whom they talk about' (Old High German, Otfrid III 16:50)

(44) 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)

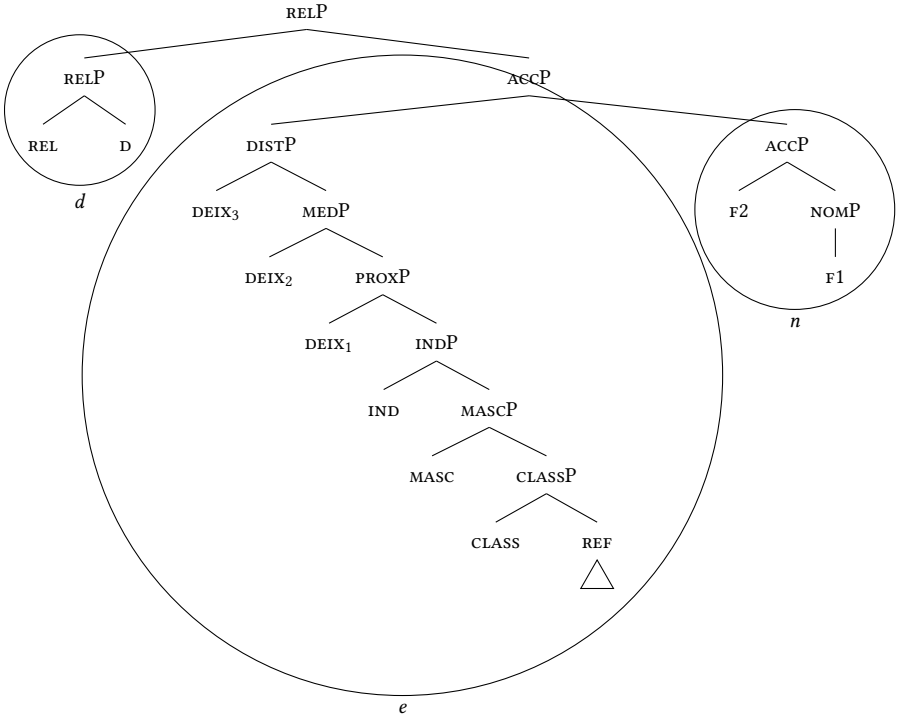
(45) Old High German: EXT ACC



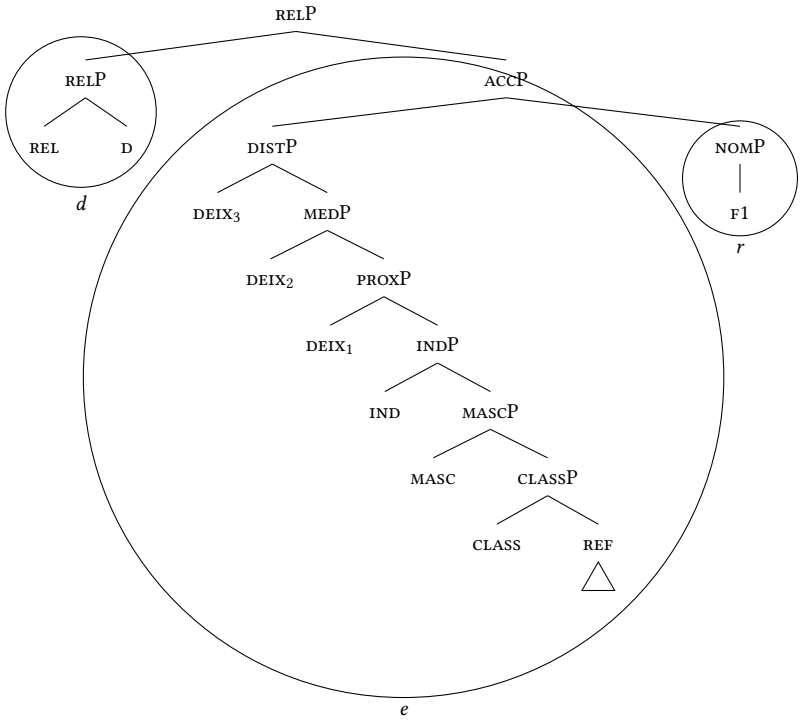
(46) Old High German: EXT NOM



(47) Old High German: INT ACC



(48) Old High German: INT ACC



The unrestricted 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 unrestricted 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 2.9, 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 2.9: 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[8]). 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 (49). *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.

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

(49) 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.[9] In Old High German, there are three possible 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 1. I assume that whether both or only one of the elements surfaces is determined by information structure. In (49), 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 1.

Consider the example in (50), repeated from Chapter 1. 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.

(50) 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)

[9]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 2.2.

Consider also the example in (50), repeated from Chapter 1. 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.

(51) 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 2.10 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.[10,11]

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

[11] 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 2.10: Relative/demonstrative pronouns in Old High German (Braune 2018: 339)

	N.SG	M.SG	F.SG
NOM	d-az	d-ër	d-iu
ACC	d-az	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 2.11.

Table 2.11: 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 defi-

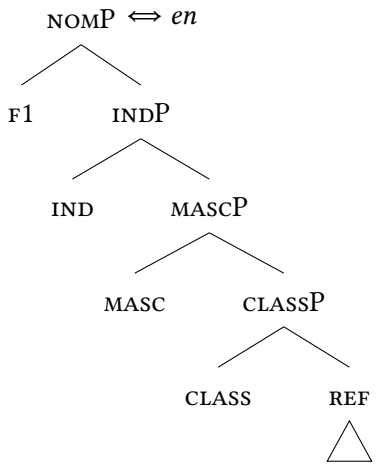
niteness. I assume that these are expressed by the morpheme *d*.

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 feature content of the morphemes *d*, *ër* and *ën*. I start with the features that are expressed by the suffixes *ër* and *ën*.

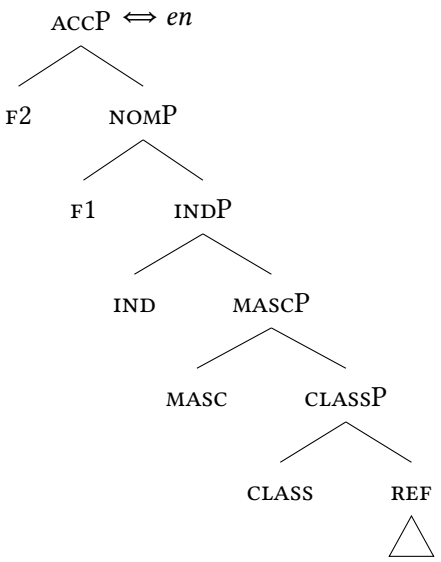
For the suffixes, I use pronominal features that are distinguished by Harley and Ritter (2002): REF, CLASS, MASC and IND. REF refers to a referring expression, which all pronouns contain. The feature CLASS refers to gender features, which is neuter if it is not combined with any other features. Combining 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 **??**. 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.

(52)

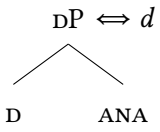


(53)



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.

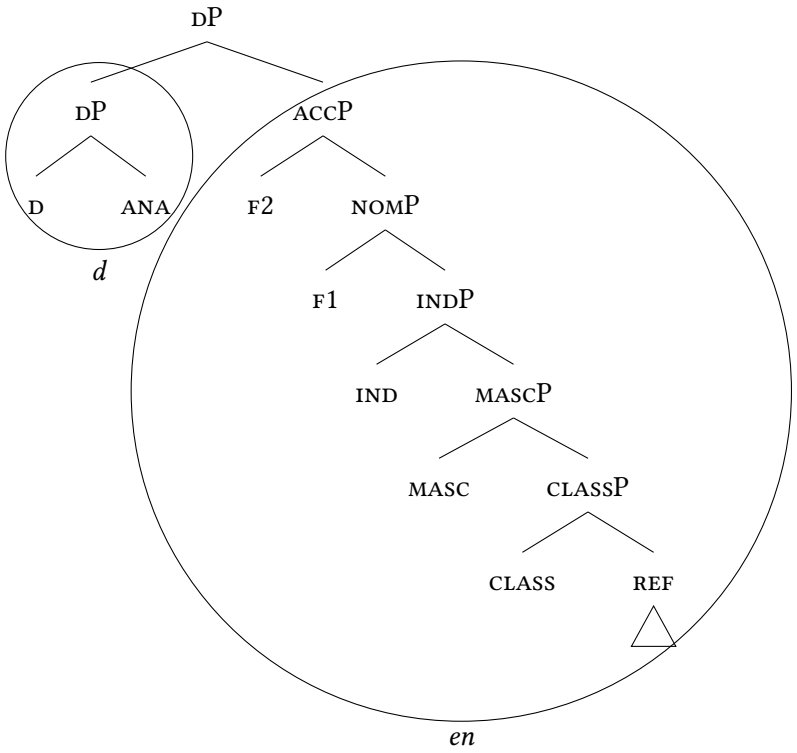
(54)



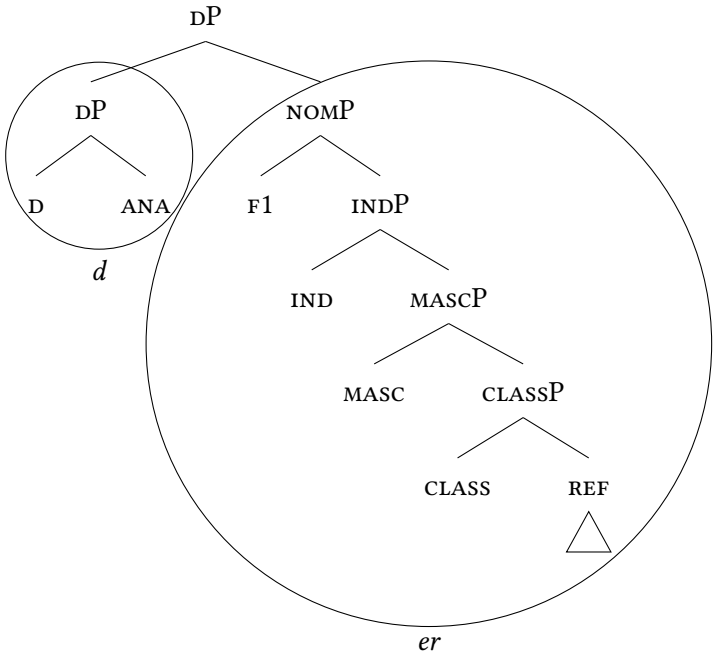
So, the two relative pronouns look like this.[12]

[12] A question that arises here is how the case features can form a constituent to the exclusion of definiteness and anaphoricity. I come back to this issue in Chapter **??**.

(55) a.


DP
DP
D
ANA
d
ACCP
F2
NOMP
F1
INDP
IND
MASCP
MASC
CLASSP
CLASS
REF
en

b.


DP
DP
D
ANA
d
NOMP
F1
INDP
IND
MASCP
MASC
CLASSP
CLASS
REF
er

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.

2.5 Technical details

Modern German:

I start at the beginning, with the REF, merging it with DEIX_1, giving a *e*.

So if then DEIX_2 is merged, it is overwritten by *e*.

I move forward a bit to when WH is merged. First the spellout driven movement happen, but this does not bring anything. Also backtracking does not help, so we build a spec.

Feature REL is merged. First try to merge it on the whole tree, then the spellout driven movements, nothing works. So, backtracking. The first step of backtracking is that the two trees are split, and the feature is merged on both parts. If the feature is spelled out on one of them, we are done. It can be phrasally spelled out with WH, so we move on.

Then feature F1 is merged. Whole tree, spellout driven movement: yes! it is spelled out as a suffix on the whole thing.

2.6 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?).

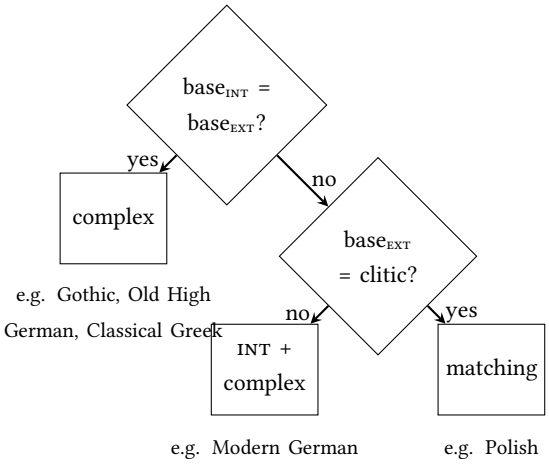


Figure 2.17: Two theoretical parameters generate three language types

2.7 Aside: a larger syntactic context

If you talk about different patterns, there can be different locations to put your parameters. Himmelreich put her parameters in the structure. I put my parameters in the elements themselves. I show what an analysis like Himmelreich looks like, and I show then that it is difficult to reduce that then to differences in the lexicon (because it has to do with agree?).

So what I do is keep the parameters that she was differing stable. I change the things that she kept constant, the internal and external element. Does her structure then work with what I want? Not entirely, because I have to do a c-command that is going in the wrong direction. Then I show a syntactic structure that could be compatible with mine, and I show why a grafting one is not.

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.

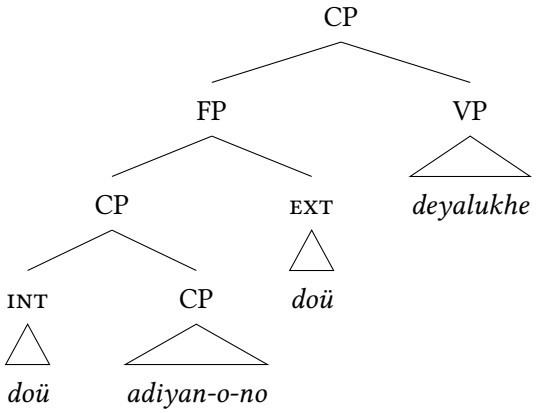
According to Cinque, every type of relative clause in every language is underlyingly double-headed. Evidence for this claim comes from languages that show this morphologically. An example from Kombai is given in (56). The head of the relative clause is *doü* 'sago', and it appears inside the relative clause and outside.

(56) [**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.

(57) shows the syntactic structure of the sentence in (56).

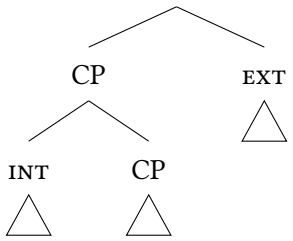
(57)



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

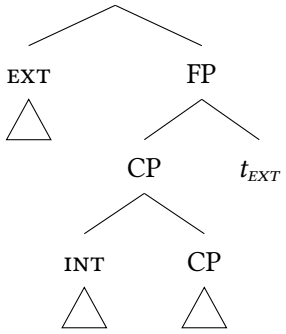
According to Cinque 2020, the internal element can delete the external element, because the internal element c-commands the external element. This is c-command according to Kayne's definition of it: the internal element is in the specifier of the specifier of the FP.

(58)



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.[13] From this position, the external element can delete the internal one, because the external element c-commands the internal one.

(59)



Also talk about D here, and that maybe Old High German deletes a thing without a D when the internal thing wins. does that also have a not so definite interpretation?

What does not work:

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 (60). Here the internal case is accusative and the ex-

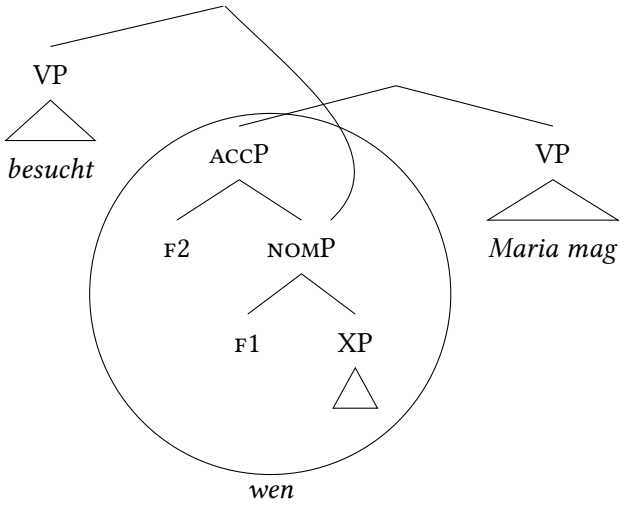
[13] What remains unclear is what the trigger is for the movement of the external element over relative clause is.

ternal one nominative.

(60) 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.

(61)

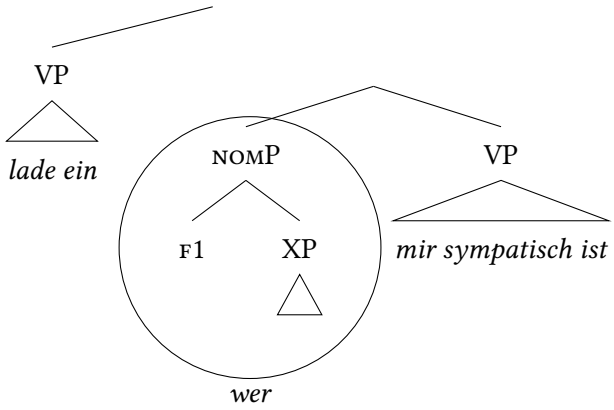


The other way around does not work. Consider (62). This is an example with nominative as internal case and accusative as external case.

(62) *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.

(63)



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 **??**. 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.

Himmelreich

there are agree relations between - V_{EXT} and EXT - V_{INT} and INT - INT and EXT

three parameters: 1 relation between V_{EXT} and EXT + V_{INT} and INT are symmetric or asymmetric 2 relation between EXT and INT are symmetric or asymmetric 3 if EXT — INT is asymmetric, EXT or INT probes

I keep the parameters she has stable, the bigger syntactic context is the same everywhere. I vary the content of EXT

Primary texts

Hel.	Heliand
Isid.	Der althochdeutsche Isidor
Men. DD.	Menander, The Double Deceiver
Mons.	The Monsee fragments
Otfrid	Otfrid's Evangelienbuch
Pl. Men.	Plato, Menexenus
Tatian	Tatian

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