

# CASE COMPETITION IN HEADLESS RELATIVES

Inauguraldissertation

zur Erlangung des Grades eines Doktors der Philosophie

im Fachbereich Neuere Philologien

der Johann Wolfgang Goethe-Universität

zu Frankfurt am Main

vorgelegt von

Fenna Bergsma

aus

Boarnsterhim, Niederlande

2020



# Acknowledgements

thanks

# Contents

<b>Contents</b>	<b>ii</b>
<b>List of tables</b>	<b>iii</b>
<b>List of figures</b>	<b>iv</b>
<b>List of abbreviations</b>	<b>v</b>
<b>I The case</b>	<b>1</b>
<b>II The base</b>	<b>3</b>
<b>1 Constituent containment</b>	<b>5</b>
1.1 The basic idea . . . . .	5
1.2 Deriving the internal-only type . . . . .	20
1.3 Deriving the matching type . . . . .	41
1.4 Deriving the unrestricted type . . . . .	49
1.5 Technical details . . . . .	60
1.6 Summary . . . . .	60
1.7 Aside: a larger syntactic context . . . . .	60
<b>Primary texts</b>	<b>73</b>
<b>Bibliography</b>	<b>75</b>

# List of tables

1.1	Options for the surface pronoun . . . . .	7
1.2	Light head and relative pronoun per language . . . . .	8
1.3	Light head and relative pronoun in Modern German . . . . .	20
1.4	Modern German relative pronouns . . . . .	26
1.5	Modern German demonstrative pronouns . . . . .	27
1.6	Modern German relative pronouns . . . . .	27
1.7	Modern German strong adjectives . . . . .	28
1.8	Modern German personal pronouns . . . . .	28
1.9	Light head and relative pronoun in Polish . . . . .	41
1.10	Light head and relative pronoun in Old High German . . . . .	49
1.11	Base comparison in Old High German . . . . .	52
1.12	Relative/demonstrative pronouns in Old High German (Braune 2018: 339)	55
1.13	Adjectives on <i>-a/-ō-</i> in Old High German Braune 2018: 300 . . . . .	55

# List of figures

1.1	Two descriptive parameters generate three language types . . . . .	6
1.2	Delete REL/LH as parameters . . . . .	9
1.3	NOM vs. ACC = ACC . . . . .	10
1.4	NOM vs. ACC after extraction $\neq$ ACC . . . . .	11
1.5	Light head and relative pronoun . . . . .	13
1.6	Light head and relative pronoun . . . . .	13
1.7	NOM relative pronoun and NOM light head . . . . .	14
1.8	NOM light head and ACC relative pronoun . . . . .	15
1.9	NOM relative pronoun and ACC light head . . . . .	15
1.10	Syncretism: relative pronoun deletes light head . . . . .	17
1.11	Syncretism: light head deletes relative pronoun . . . . .	18
1.12	Modern German EXT <sub>NOM</sub> vs. INT <sub>NOM</sub> = <i>wer</i> . . . . .	37
1.13	Modern German EXT <sub>NOM</sub> vs. INT <sub>ACC</sub> = <i>wen</i> . . . . .	38
1.14	Modern German EXT <sub>ACC</sub> vs. INT <sub>NOM</sub> $\neq$ <i>wer/æn</i> . . . . .	40
1.15	Polish EXT <sub>ACC</sub> vs. INT <sub>ACC</sub> = <i>kogo</i> . . . . .	65
1.16	Polish EXT <sub>ACC</sub> vs. INT <sub>DAT</sub> $\neq$ <i>tego/komu</i> . . . . .	66
1.17	Polish EXT <sub>DAT</sub> vs. INT <sub>ACC</sub> $\neq$ <i>temu/kogo</i> . . . . .	67
1.18	Old High German EXT <sub>NOM</sub> vs. INT <sub>NOM</sub> = <i>dher</i> . . . . .	68
1.19	Old High German EXT <sub>NOM</sub> vs. INT <sub>ACC</sub> = <i>then</i> . . . . .	69
1.20	Old High German EXT <sub>ACC</sub> vs. INT <sub>NOM</sub> = <i>dhen</i> . . . . .	70
1.21	Two theoretical parameters generate three language types . . . . .	71

# List of abbreviations

<b>ACC</b>	accusative
<b>AN</b>	animate
<b>DAT</b>	dative
<b>DEM</b>	demonstrative
<b>GEN</b>	genitive
<b>INF</b>	infinitive
<b>M</b>	masculine
<b>NOM</b>	nominative
<b>N</b>	neuter
<b>PL</b>	plural
<b>PRES</b>	present tense
<b>PST</b>	past tense
<b>PTCP</b>	participle
<b>REL</b>	relative
<b>SG</b>	singular





## **Part I**

### **The case**



## **Part II**

# **The base**



# Chapter 1

## Constituent containment

In Chapter ?? I introduced two descriptive parameters that generate the attested languages, as shown in Figure 1.1. 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.

“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)<sup>147</sup>

In this chapter I show how the typology can be derived from the morphology of the languages.

This chapter is structured as follows.

### 1.1 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. I start with my

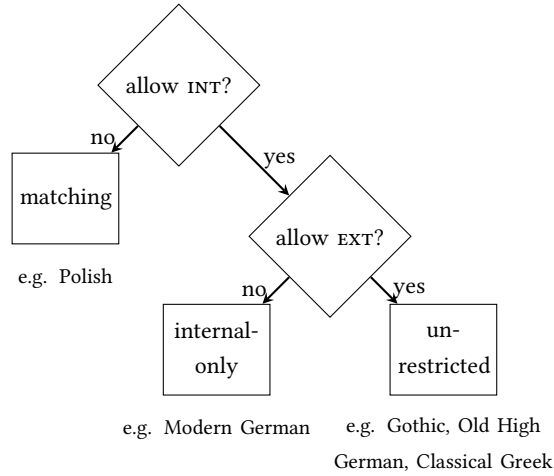


Figure 1.1: Two descriptive parameters generate three language types

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, as illustrated in (1).

- (1) light head<sub>EXT</sub> [relative pronoun<sub>INT</sub> ... ]

In a headless relative, either the light head or the relative pronoun is absent. This happens under the following condition: a light head or a relative pronoun is absent when each of its constituents is contained in a constituent of the other element (i.e. the light head or the 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?’

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. I propose headless relatives are derived from light-headed relatives (the same is argued for headless relatives with D-pronouns in Modern German by Fuß and Grewendorf 2014; Hanink 2018 and for Polish by Citko 2004<sup>1</sup>, several others claim there is a phonologically empty head, cf. XX ). 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 1.1 lists the two options that I just laid out plus an additional one. The first option is that the relative pronoun, which bears the internal case, can appear as the surface pronoun. The second option is that 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.

Table 1.1: Options for the surface pronoun

surface pronoun
light head <sub>EXT</sub>
relative pronoun <sub>INT</sub>
*

Table 1.2 shows per language type which of the three options in Table 1.1 is chosen when the internal and external case differ.

<sup>1</sup>A difference with Modern German and Polish 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.

Table 1.2: Light head and relative pronoun per language

	INT > EXT	INT < EXT	
unrestricted	relative pronoun <sub>INT</sub>	light head <sub>EXT</sub>	Old High German
internal-only	relative pronoun <sub>INT</sub>	*	Modern German
matching	*	*	Polish
external-only	*	light head <sub>EXT</sub>	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 asterix (\*) indicates that there is no grammatical form for the surface pronoun. The fourth column gives the 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. A language of the matching type (like 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.<sup>2</sup> 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 pa-

<sup>2</sup>That is, in the unrestricted cases. Later on I show that the relative pronoun surfaces in matching contexts.



rameters from Figure 1.1 into two other descriptive parameters. Whether 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 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 1.2.

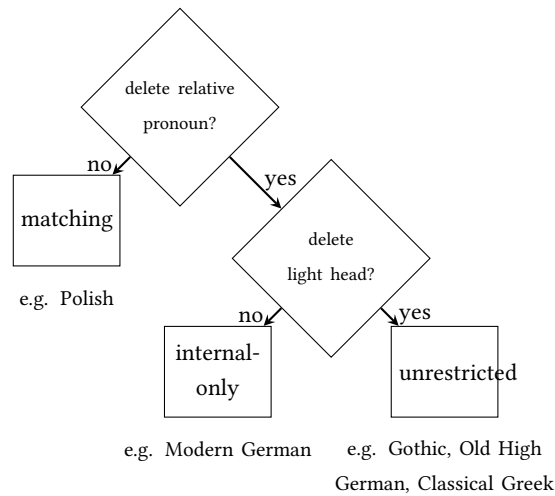


Figure 1.2: Delete REL/LH as parameters

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 light head and the relative pronoun) that bear the internal and external cases. The difference between languages lies in whether or not it is possible to delete the light head and the relative pronoun and with them respectively the external and internal case.

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 1.2.

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 1.3 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.

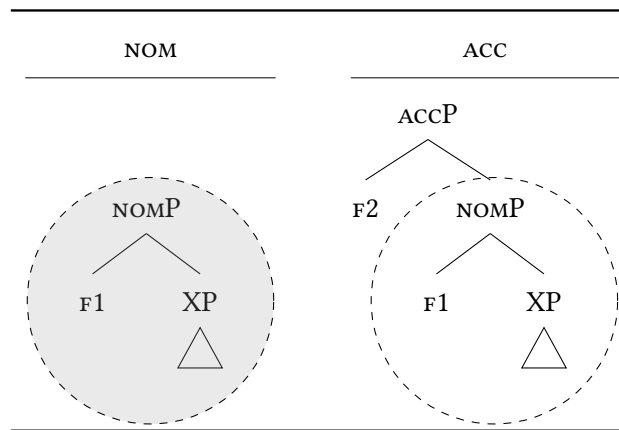


Figure 1.3: NOM vs. ACC = ACC

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 1.3 is also compatible with a stronger requirement than feature containment: constituent containment. Under this view, the accusative wins over the nominative because the ACCP contains the NOMP.

In Figure 1.4 I show the same picture as in Figure 1.3 except for that the XP has moved out of the ACCP. I draw a dashed circle around the constituent that is a constituent 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.

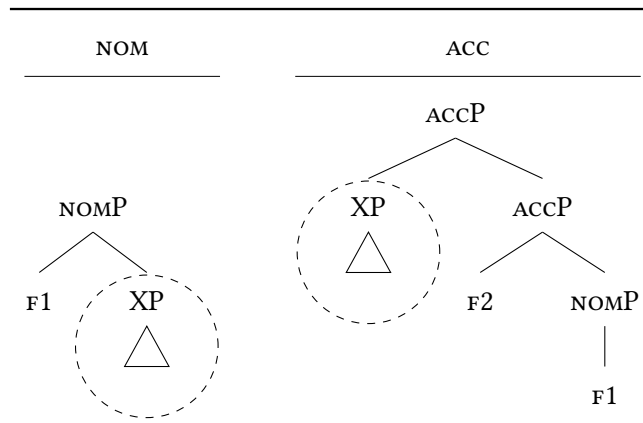


Figure 1.4: NOM vs. ACC after extraction  $\neq$  ACC

I use constituent containment to explain why the deletion of the light head or relative pronoun is sometimes possible and sometimes not. In Section 1.3 I show that only the stronger requirement of constituent containment is able to distinguish the internal-only from the matching type of language, and that the weaker requirement of feature containment is not.

I apply the constituent containment reasoning to comparing the light head and relative pronoun. This time the most complex structure is not the winner of the case competition. Instead, the most complex structure 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 structures. In Section 1.2 to 1.4 I give arguments to support

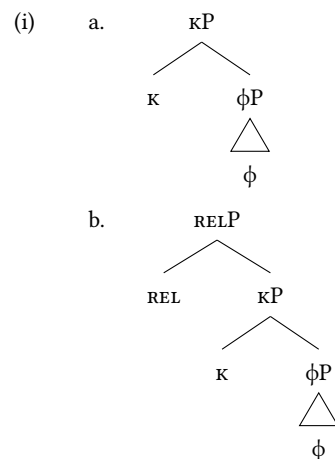
the structures I am assuming here. Figure 1.5 gives a simplified representation of them.<sup>3</sup> The light head and the relative pronoun partly contain the same syntactic features. The features they have in common are case ( $\kappa$ ) and what I here simplify as phi-features ( $\phi$ ). The light head and the relative pronoun differ from each other in that the relative pronoun in addition has a relative feature ( $\text{REL}$ ).

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 1.6. I draw a dashed circle around the constituent that is a constituent in both the light head and the relative pronoun. The  $\text{REL P}$  contains the  $\kappa\text{P}$ , so the relative pronoun can delete the light head. I illustrate this by marking the content of the dashed circle for the  $\kappa\text{P}$  gray.

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 feature content of light heads and relative pronouns is stable for all languages types. That is, also in the

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<sup>3</sup>The structures in Figure 1.5 are not base structures but derived ones. I assume the base structure of the light head to be as in (ia) and the base structure of the relative pronoun to be as in (ib).



In Section 1.2 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.

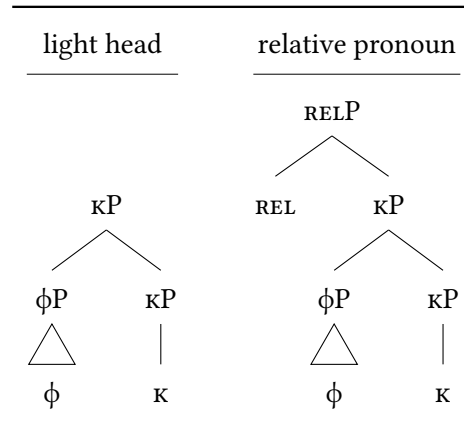


Figure 1.5: Light head and relative pronoun

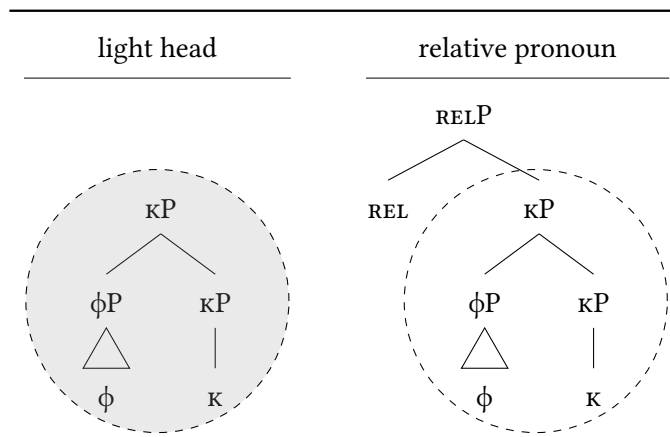


Figure 1.6: Light head and relative pronoun

other languages types, the relative pronoun contains at least one feature more (REL) than the light head. The differences between languages lies in how light heads and relative pronouns are spelled out. This is what causes the languages to be of different types. Before I come back to how the other language types deviate in their spellout and how this leads to different language types, I show how the internal-only type fares with differing internal and external cases.

I start with an example with matching cases in Figure 1.7. The relative pronoun

appears in the nominative, and the light head does too.

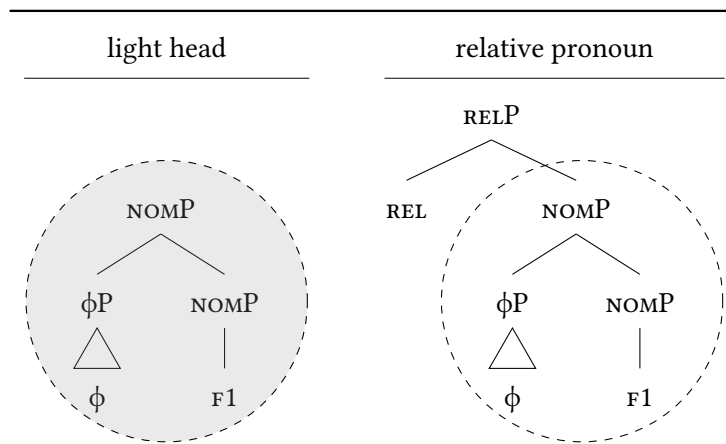


Figure 1.7: NOM relative pronoun and NOM light head

I draw a dashed circle around the 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.

I continue with the example in Figure 1.8, 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 1.7, 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 phiP. 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.

I end with the example in Figure 1.9, in which the light head bears a more com-

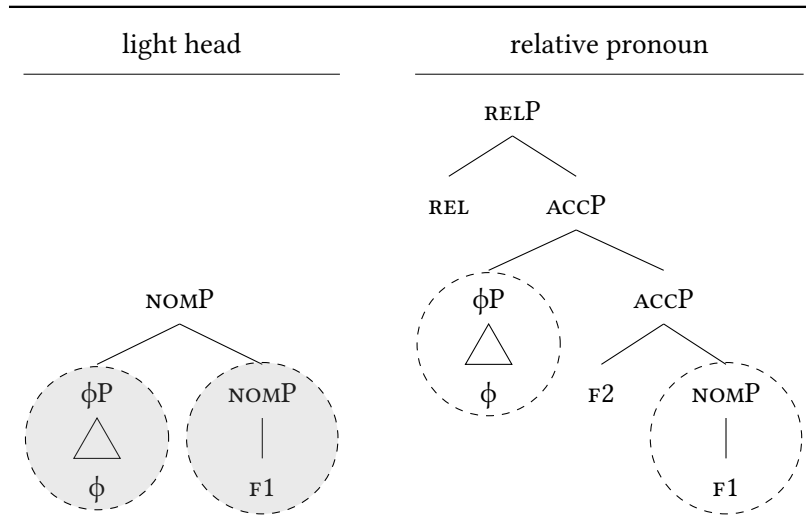


Figure 1.8: NOM light head and ACC relative pronoun

plex case than the relative pronoun.

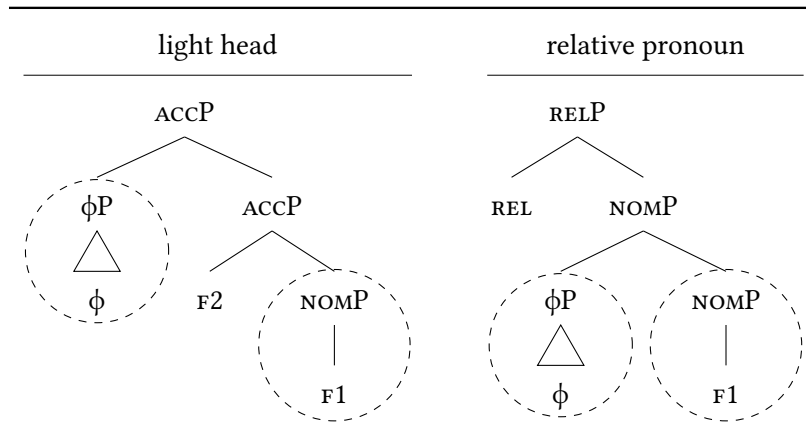


Figure 1.9: NOM relative pronoun and ACC light head

I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. Different from the previous two examples in Figure 1.7 and Figure 1.8, 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 *r2* 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 top node of the relative pronoun: *relP*. This constituent is not a constituent in the light head: the light head has a constituent *nomp*, but it does not contain *rel* to make it a *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.

Now I return to the point of crosslinguistic differences. I do not derive the differences between the languages from changing the feature content of the light head and relative pronoun per language.<sup>4</sup> Instead, the differences come from how the light heads and relative pronouns are spelled out. In Sections 1.2 to Section 1.4, I show how I implement this idea.

For matching languages like Polish the intuition is that they package their features together differently from internal-only languages like Modern German. The packaging happens in such a way that the constituents of the relative pronoun do not contain the constituents of the light head. As a result, the relative pronoun cannot delete the light head anymore. In Section 1.3, I show that the different packaging of the features is a consequence of how the lexical entries for Polish light head and relative pronoun are specified in the lexicon.

What is special about unrestricted languages like Old High German is that their light heads and relative pronouns are syncretic. If there is no constituent containment, but the two forms are syncretic, one element can still delete the other. This

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<sup>4</sup>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.



means that the relative pronoun can not only delete the light head, but the light head can also delete the relative pronoun. Consider Figure 1.10, in which the relative pronoun deletes the light head.<sup>5</sup>

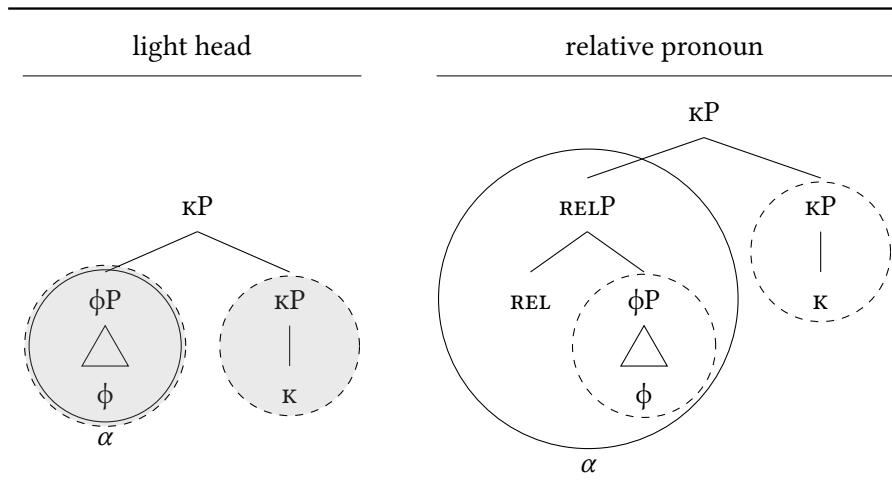


Figure 1.10: Syncretism: relative pronoun deletes light head

The  $\phi P$  in the light head is spelled out as  $\alpha$ , illustrated by the circle around the  $\phi P$  and the  $\alpha$  under it. The RELP in the relative pronoun is spelled out as  $\alpha$  too, illustrated in the same way. I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun.

I start with the right-most constituent of the light head:  $\kappa P$ . This constituent is also a constituent in the relative pronoun. I continue with the left-most constituent of the light head: the  $\phi P$ . This constituent is also a constituent in the relative pronoun, contained in the RELP. 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.

Consider Figure 1.11, in which the light head deletes the relative pronoun.

Just as in Figure 1.10, the  $\phi P$  in the light head is spelled out as  $\alpha$  and the RELP in the relative pronoun is spelled out as  $\alpha$  too. I draw a dashed circle around each

<sup>5</sup>These structures cannot be derived from the base structures in (ia) and (ib). The structures I give here are simplifications of a more complex situation for which I give the intuition here.

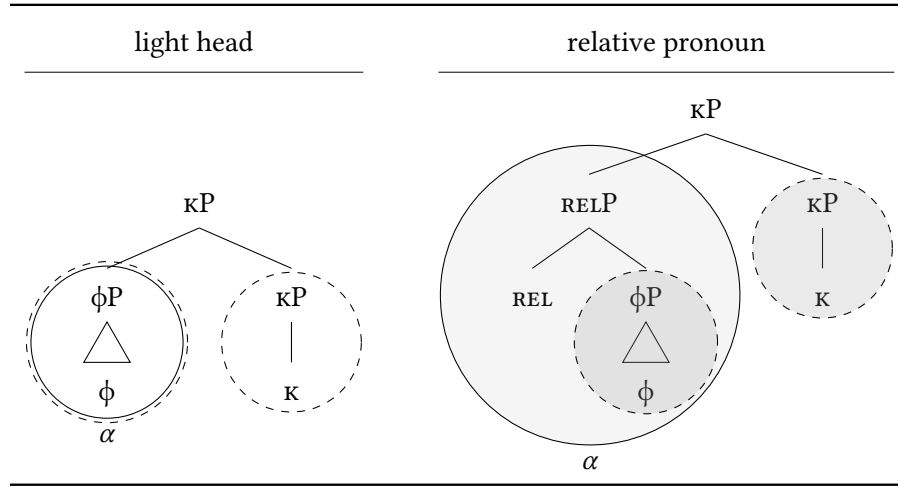


Figure 1.11: Syncretism: light head deletes relative pronoun

constituent that is a constituent in both the light head and the relative pronoun.

I start with the right-most constituent of the relative pronoun:  $\kappa P$ . This constituent is also a constituent in the relative pronoun. I continue with the left-most constituent of the relative pronoun: the  $REL P$ . This constituent is not contained in the light head, but it is syncretic with it. The  $\phi P$  is also spelled out as  $\alpha$ . Each constituent of the relative pronoun is either also a constituent within the light head or it is syncretic with a constituent within the light head. Therefore, the relative pronoun can be absent. I illustrate this by marking the content of the dashed circles for the relative pronoun gray and the portion that is deleted by syncretism in a lighter shade of gray.

The fact that syncretism also licenses deletion is not specific to the portion of the structure corresponding to  $\phi$  and  $REL$ . Syncretic cases can have the same effect, for instance inanimate nominatives and accusatives in Modern German. In Section 1.4 I give examples from that, and I show the detailed derivations for unrestrictive languages like Old High German.

The system I set up excludes the external-only type of language. An external-only type of language would be one in which the light head can delete the relative pronoun, but the relative pronoun cannot delete the light head. In my proposal, an

element can delete the other one if it contains all of the other's constituents. Relative pronouns always contain one more feature than light heads: *REL*. Therefore, it is impossible for a light head to contain all constituents of the relative pronoun. The light head namely does not even contain all features that the relative pronoun contains. If it does not meet the weaker requirement of feature containment, it is not possible to meet the stronger requirement of constituent containment.

I return to the metaphor with the committee that I introduced in Chapter ?? . 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 that can either approve the winning case or not approve it. How I formulated it in Chapter ?? is that 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). I showed in this section that the approval relies on the same mechanism as case competition, namely constituent comparison. A relative pronoun corresponds to a particular set of constituents and so does the light head. If one contains all constituents the other contains, the former can delete the latter. When the element can delete the other element it is 'allowed to surface'.

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, the grammaticality of a sentence can differ within a language depending on the internal and external case. The part of the light head and relative pronoun that does not involve case features is stable within a language. Therefore, whether the internal or external case is 'allowed to surface' cannot differ 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 1.7 I discuss existing proposals on these topics and to what extent 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 constituents of the other element. This set of assumptions derives that only the most complex case can surface and that there is no language of the external-only type.

## 1.2 Deriving the internal-only type

In the internal-only pattern..

Table 1.3: Light head and relative pronoun in Modern German

		INT > EXT	INT < EXT	Modern German
internal-only	relative pronoun <sub>INT</sub>		*	

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 into 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 ist 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 headless relatives corresponds to the relative pronoun.

I give the light head - relative pronoun combination.

Modern German has two types of relative pronouns: WH-pronouns that appear

in headless relatives and D-pronouns that appear in headed relatives.<sup>6</sup> (7a) is an example of a WH-pronoun in a headless relative, and (7b) is an example of a D-pronoun in a headed relative.

- (7) a. Jan umarmt **wen** **er mag**.  
 Jan hugs REL.AN.ACC he likes  
 ‘Jan hugs who he likes.’  
 b. Jan umarmt den Mann **den** **er mag**.  
 Jan hugs D.M.SG.ACC man REL.M.SG.ACC he likes  
 ‘Jan hugs the man that he likes.’

Both of these relative pronouns seem to be compatible with light-headed relatives.

- (8) a. Jan umarmt den **wen** **er mag**.  
 Jan hugs D.M.SG.ACC REL.M.SG.ACC he likes  
 ‘Jan hugs the man that he likes.’  
 b. Jan umarmt den **den** **er mag**.  
 Jan hugs D.M.SG.ACC REL.M.SG.ACC he likes  
 ‘Jan hugs the man that he likes.’

At first sight, it seems like a possibility to assume that headless relatives are derived from the light-headed relative in (8a). This is also exactly what Hanink (2018) does. In what follows, I motivate why I do not follow this proposal. The motivation comes from the interpretation of headless relatives.

Headless relatives differ from headed relatives in that they can be combined with the particle *auch immer* ‘ever’.

- (9) a. Jan unarmt **wen** **auch immer er mag**.  
 Jan hugs REL.AN.ACC ever he likes  
 ‘Jan hugs whoever he likes.’

---

<sup>6</sup> At first sight it seems like Fuß and Grewendorf (2014) discuss a counterexample to this generalization, namely headless relatives with D-pronouns. However, they claim that these headless relatives are actually light-headed relatives in which one of two syncretic elements is deleted by haplology.

- b. \*Jan unarmt den Mann **den** auch immer er mag.  
 Jan hugs D.M.SG.ACC man REL.M.SG.ACC ever he likes  
 intended: ‘Jan hugs the man whoever he likes.’

The sentence in (9a) has two main interpretations (see Šimík (2020) for a recent elaborate overview on the semantics of free relatives). The first interpretation is described as universal-like and the second is described as definite-like. The universal-like interpretation corresponds to a universal quantifier: Jan hugs everybody that he likes. The definite-like interpretation corresponds to a definite description: Jan hugs the person that he likes.

Šimík (2020)<sup>4</sup> notes that some languages do not readily allow for the definite-like interpretation of headless relatives with an *ever*-morpheme. There is no language documented that does not allow for the universal-like interpretation, but it does allow the definite-like interpretation. Along the same lines, informants have reported to me headless relatives with case mismatches seem to become more acceptable in the universal-like interpretation compared to the definite-like interpretation. What I take away from that, is that the universal-like interpretation of headless relatives is the main interpretation to account for.

The headed relative in (8a) has as its light head *den*. This is what Schwarz (2009) calls a strong demonstrative, which is used when there is an anaphoric relation. Often there is a linguistic antecedent that is referred back to. I give an example in (10). The strong demonstrative is *dem* that precedes *Freund*, which refers back to the linguistic antecedent *einen Freund*.

- (10) Hans hat heute einen Freund zum Essen mit nach Hause gebracht. Er  
 Hans has today a friend to the dinner with to home brought he  
 hat uns vorher ein Foto von dem Freund gezeigt.  
 has us beforehand a photo of the<sub>STRONG</sub> friend shown  
 ‘Hans brought a friend home for dinner today. He had shown us a photo of  
 the friend beforehand.’

In headless relatives, there is no anaphoric relation or linguistic antecedent to refer back to.

What Schwarz (2009) calls a weak demonstrative is more compatible with the





- b. Ich habe n                   gesehen.  
     I    have DEM.ACC<sub>WEAK</sub> seen  
     ‘I have been him.’
- c. Ich folge m                   nach Hause.  
     I    follow DEM.DAT<sub>WEAK</sub> to    house  
     ‘I follow him home.’

Now I turn to Modern German relative pronouns. Table 1.4 gives the animate and inanimate forms in three cases: nominative, accusative and dative. I decompose them in three morphemes: a *w*, a vowel and a final consonant. For each morpheme I show which syntactic features they correspond to. Then I form the complete relative pronouns with them.

Table 1.4: 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)

I start with the morpheme *w*.

The *w* combines with the same endings as the *d* does in demonstratives in Modern German. Table ?? gives the singular forms in three gender and three cases.<sup>7,8</sup>

<sup>7</sup>These demonstratives are also used as relative pronouns of headed or regular light-headed relative clauses. To keep them apart, I keep referring to the *D*-pronouns as demonstratives and only to the *WH*-pronouns as relative pronouns.

<sup>8</sup>Note here that the relative pronouns, unlike the demonstratives, do not have a feminine form for the relative pronouns in Table 1.4. Demonstratives also have plural forms (which are not given here), and relative pronouns do not. As far as I know, this holds for all relative pronouns in languages of the internal-only type (cf. also for Finnish, even though it has lots of morphology) and of the matching type. Relative pronouns in languages of the unrestricted type do inflect for feminine, as well as always-external languages. In Chapter ?? I return to this observation in relation with the always-external languages.

Table 1.5: 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

This identifies the *d* and, more importantly for the discussion here, the *w* as morpheme. The morpheme *w* appears besides in headless relatives, also as interrogative pronouns. An example is given in (14).

- (14) 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.

- (15)
- $$\begin{array}{c}
 \text{REL} \Leftrightarrow w \\
 \swarrow \quad \searrow \\
 \text{REL} \quad \text{WH}
 \end{array}$$

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

Table 1.6: 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 1.7: 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

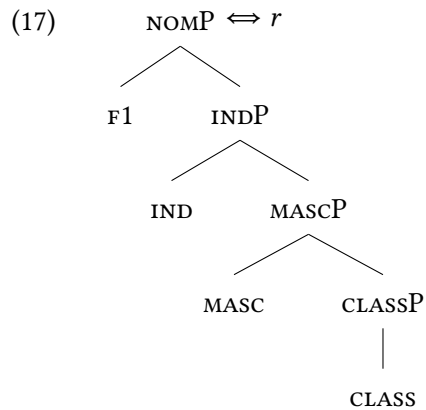
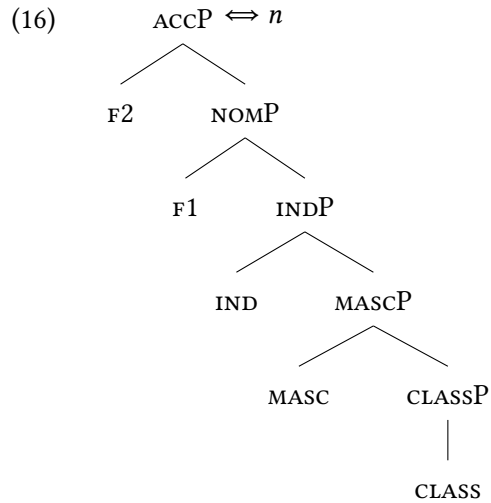
In pronouns, in the non-suppletives.

Table 1.8: 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.



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

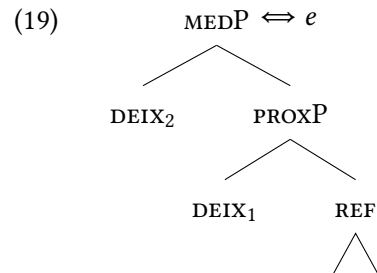
I use pronominal features that are distinguished by Harley and Ritter (2002): CLASS, MASC and IND. REF refers to a referring expression, which all pronouns contain. The feature CLASS refers to gender features, which is neuter if it is not combined with any other features. Combining CLASS with the feature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

- (18) a. th-is  
DEM-PROX
- b. th-at  
DEM-MED/DIST
- c. wh-at  
WH-MED/DIST

9

I give the lexical entries for the morphemes.



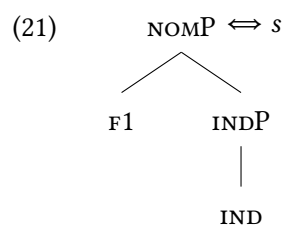
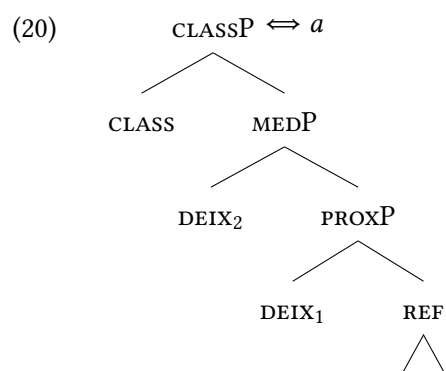
Now I come back to the interaction between gender and case. For the neuter relative pronoun the vowel is different: *a*. So, this needs to be reflected in the features: I left out MASC. However, there also needs to be a difference in lexical entries between the final consonant for the neuter and for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

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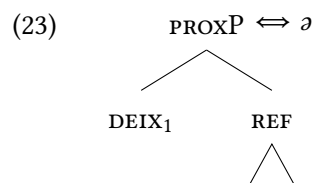
<sup>9</sup>Conceptually, this can be made sense of if you see distal as something far away from you as a speaker, because it is unknown to you. Something that is known to you is expressed with a proximal.

- (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.

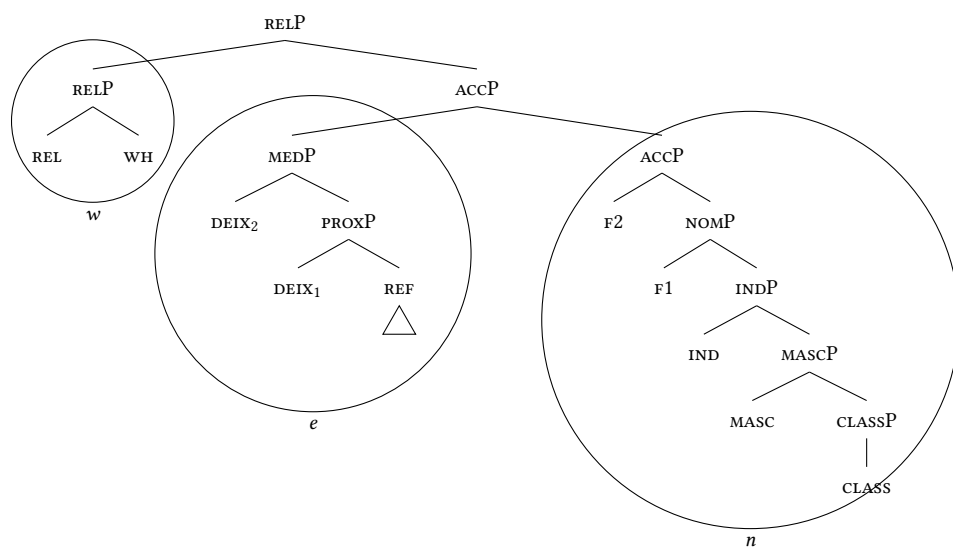


- (22)
- a. d-er            Baum dort/#hier  
      D-DEM<sub>STRONG</sub> tree    there/here  
      ‘that tree there’
- b. d-ies-ər            Baum hier/#dort  
      D-EMPH-DEM<sub>WEAK</sub> tree    here/there  
      ‘this tree here’

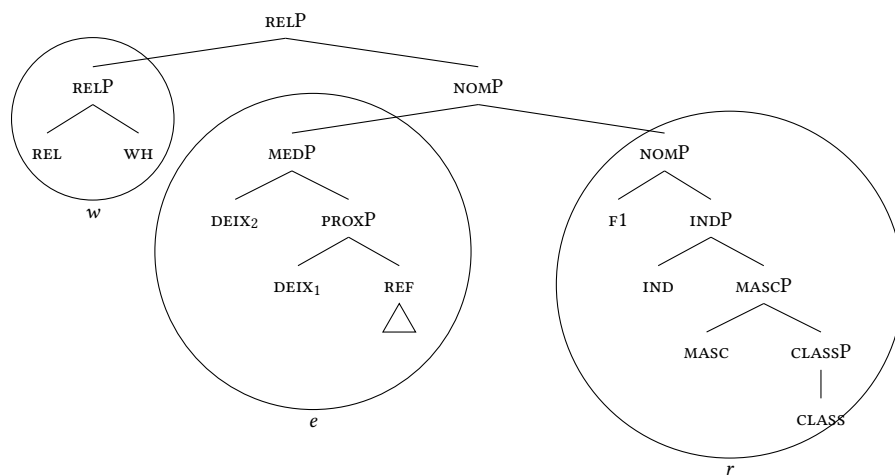


Now I show how the relative pronoun are built.

(24)

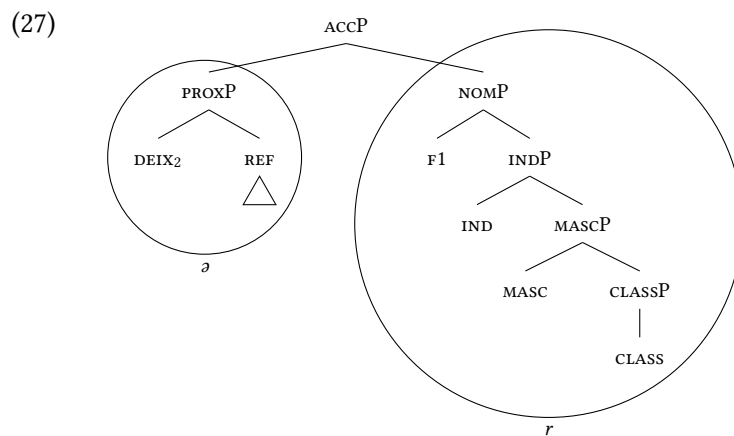
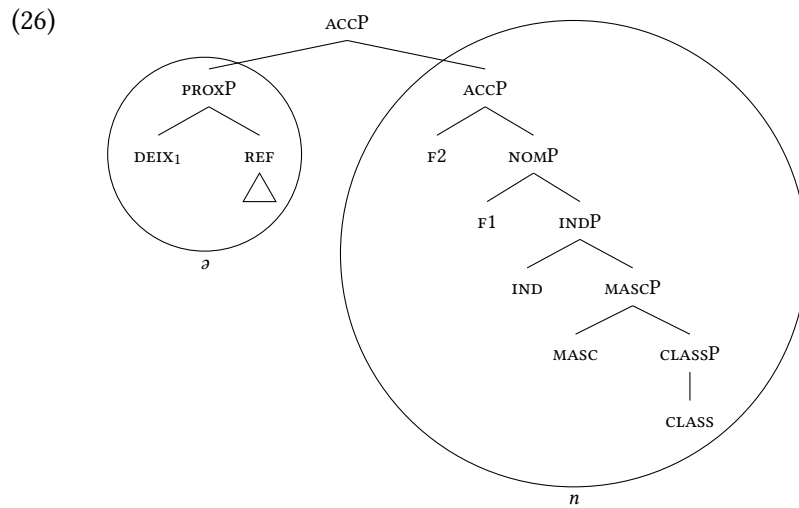


(25)



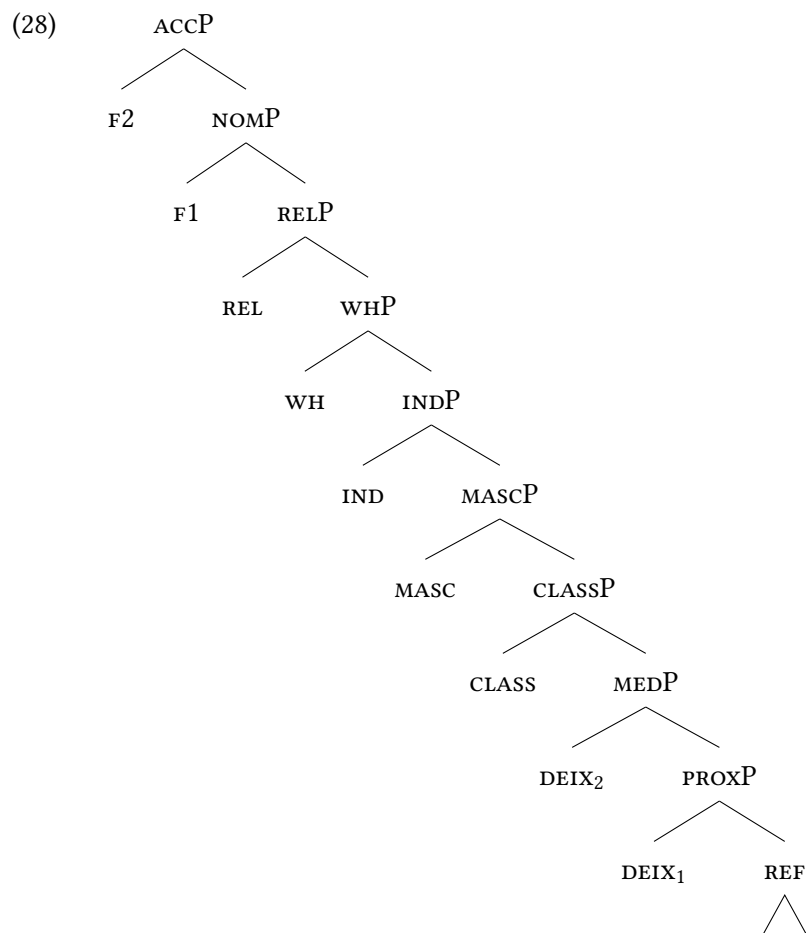
I show how the light heads are built.





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:



The spellout algorithm is this.

(29) **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.

(30) **Cyclic Override** (Starke, 2018):

Lexicalisation at a node XP overrides any previous match at a phrase contained in XP.

If the spellout procedure in (29) fails, backtracking takes place.

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

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

(32) **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.

Consider the example in (33), 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  $\varnothing r$  ‘DEM.AN.NOM’ appears in the nominative case. It is placed between square brackets because it does not surface.

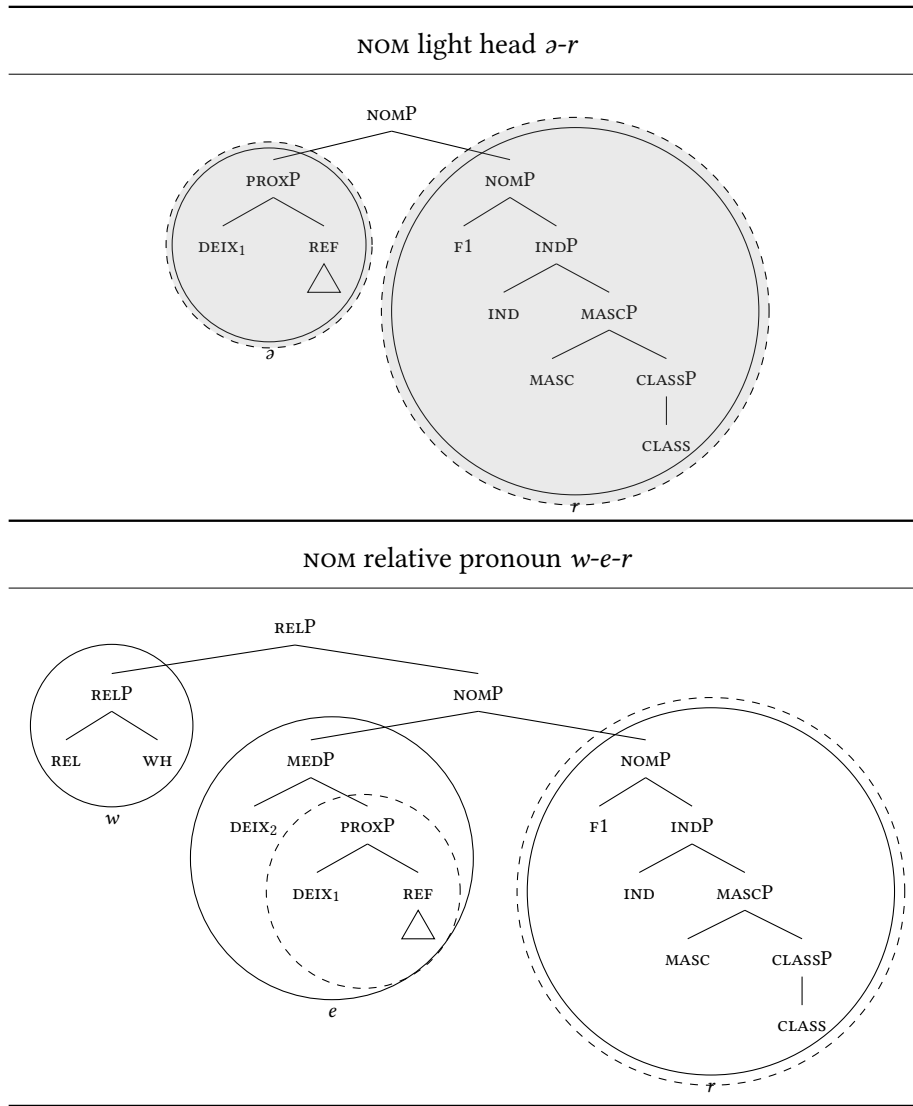
- (33) Uns besucht [ $\varnothing r$ ], wer **Maria**  
 2PL.ACC visit.PRES.3SG<sub>[NOM]</sub> DEM.AN.NOM REL.AN.NOM Maria.ACC  
**mag.**  
 like.PRES.3SG<sub>[NOM]</sub>  
 ‘Who visits us likes Maria.’  
 (Modern German, adapted from Vogel 2001: 343)

In Figure 1.18, 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:  $\varnothing$  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  $\varnothing$  (PROXP). This constituent is also a constituent in the relative pronoun, contained in MEDP. Both constituent of the light head are also a constituent within the relative pronoun, and the light head can be absent.

Consider the example in (34), 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  $\varnothing r$  ‘DEM.AN.NOM’ appears in the nominative case. It is placed between square brackets because it does not surface.

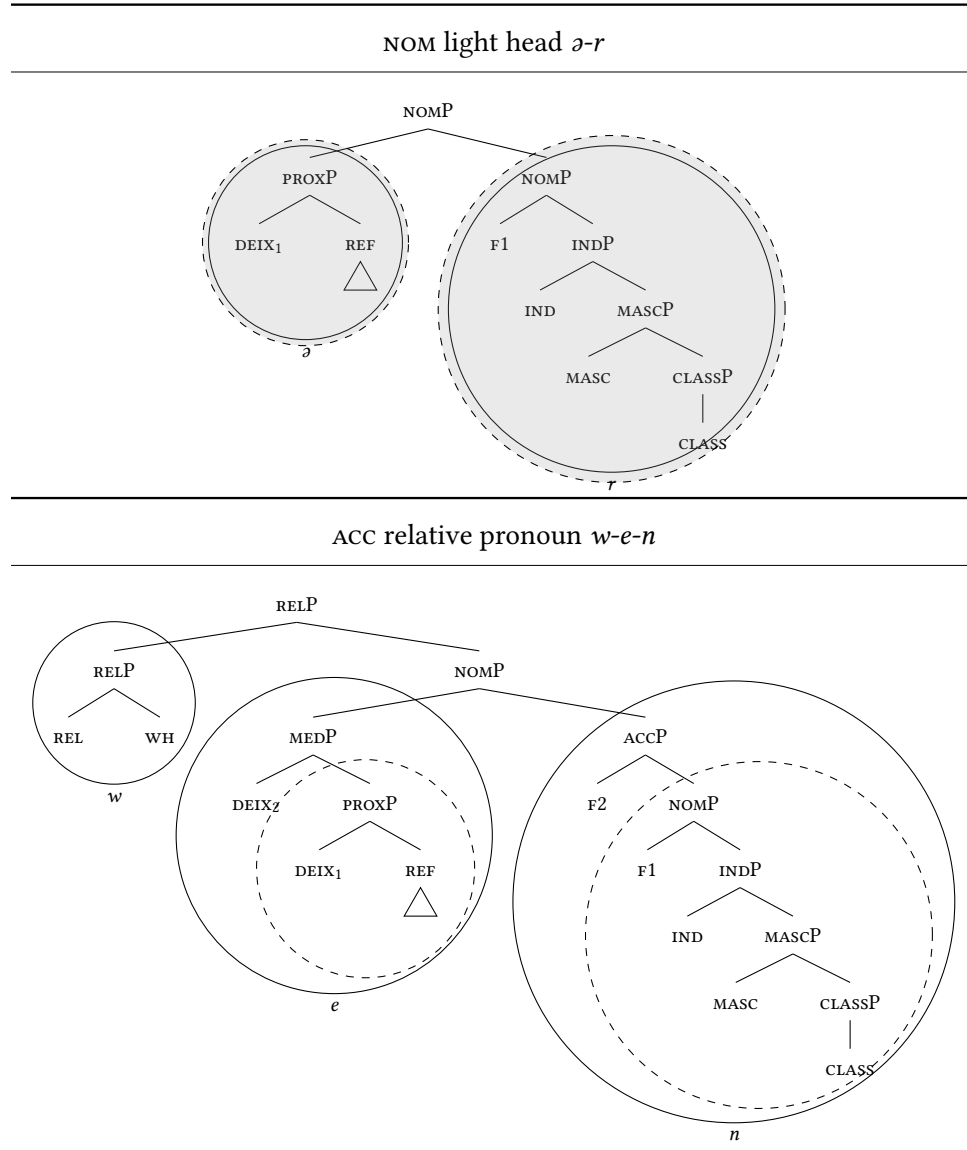
Figure 1.12: Modern German  $EXT_{NOM}$  vs.  $INT_{NOM} = wer$ 

- (34) Uns besucht  $[\partial r]$  wen Maria mag.  
 we.ACC visit.3SG<sub>[NOM]</sub> DEM.NOM.AN REL.ACC.AN Maria.NOM like.3SG<sub>[ACC]</sub>  
 ‘Who visits us, Maria likes.’ (adapted from Vogel 2001: 343)

In Figure 1.13, I give the syntactic structure of the light head at the top and the

syntactic structure of the relative pronoun at the bottom.

Figure 1.13: Modern German EXT<sub>NOM</sub> vs. INT<sub>ACC</sub> = *wen*



The relative pronoun consists of three morphemes: *w*, *e* and *n*. The light head consists of two morphemes: *a* 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.

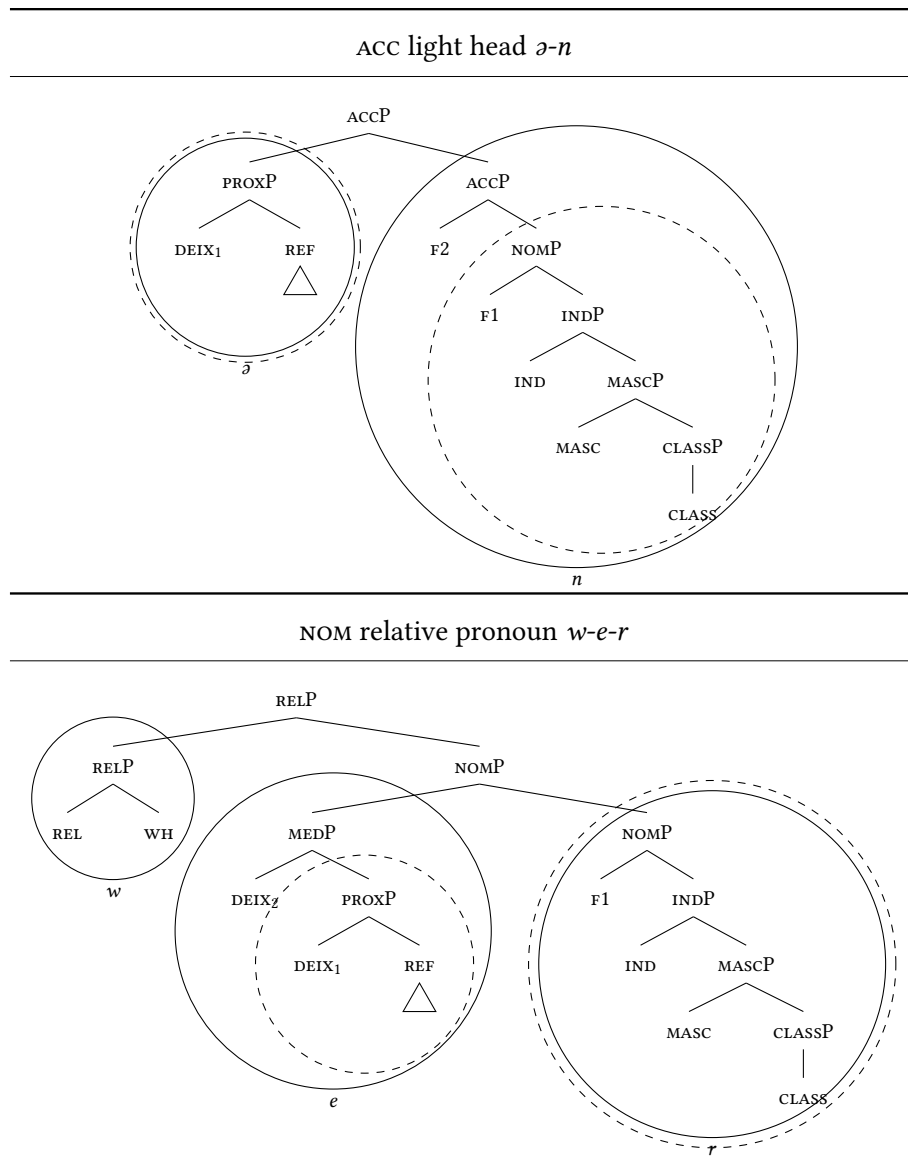
I explain this constituent by constituent. I start with the right-most constituent of the light head that spells out as *r* (NOMP). This constituent is also a constituent in the relative pronoun, contained in ACCP. I continue with the left-most constituent of the light head that spells out as *a* (PROXP).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

Consider the examples in (35), 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 *an* ‘DEM.AN.ACC’ appears in the accusative case. (35a) 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. (35b) 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.

- (35) a. \*Ich lade ein, [an] **wer** **mir**  
 1SG.NOM invite.PRES.1SG<sub>[ACC]</sub> REL.AN.NOM 1SG.DAT nice  
**sympathisch ist.**  
 be.PRES.3SG<sub>[NOM]</sub>  
 ‘I invite who I like.’ (Modern German, adapted from Vogel 2001: 344)
- b. \*Ich lade ein, an [**wer**] **mir**  
 1SG.NOM invite.PRES.1SG<sub>[ACC]</sub> REL.AN.NOM 1SG.DAT nice  
**sympathisch ist.**  
 be.PRES.3SG<sub>[NOM]</sub>  
 ‘I invite who I like.’ (Modern German, adapted from Vogel 2001: 344)

In Figure 1.20, I give the syntactic structure of the light head at the top and the syntactic structure of the relative pronoun at the bottom.

Figure 1.14: Modern German EXT<sub>ACC</sub> vs. INT<sub>NOM</sub> ≠ *wer/an*



The relative pronoun consists of three morphemes: *w*, *e* and *r*. The light head consists of two morphemes: *a* 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.<sup>10</sup>

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* (MEDP). This constituent is not a constituent in the light head: the light head has a constituent MEDP, but it does not contain DEIX<sub>3</sub> to make it an MEDP. 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.

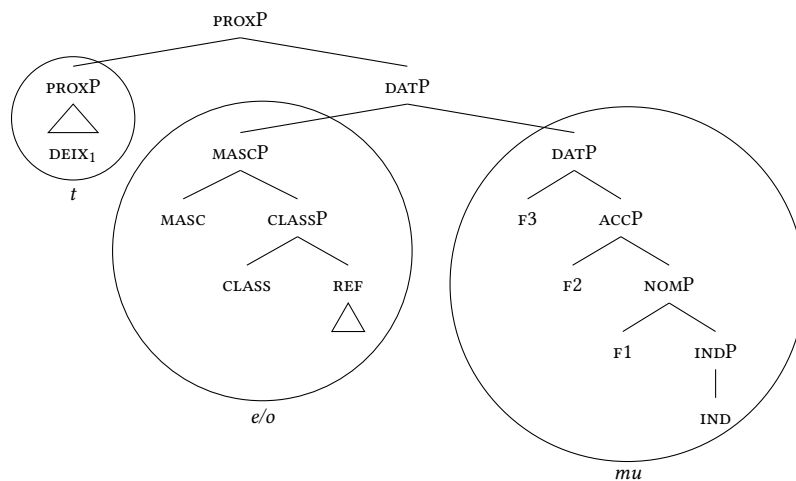
### 1.3 Deriving the matching type

Table 1.9: Light head and relative pronoun in Polish

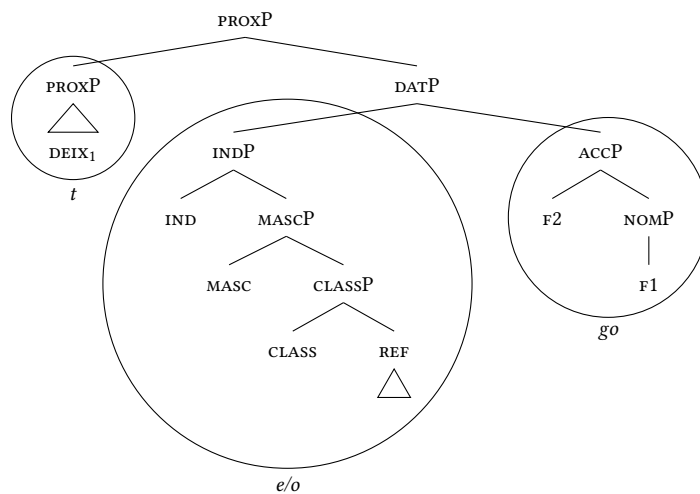
	INT > EXT	INT < EXT	
matching	*	*	Polish

<sup>10</sup>Why do we not see this result surface? Very good question.

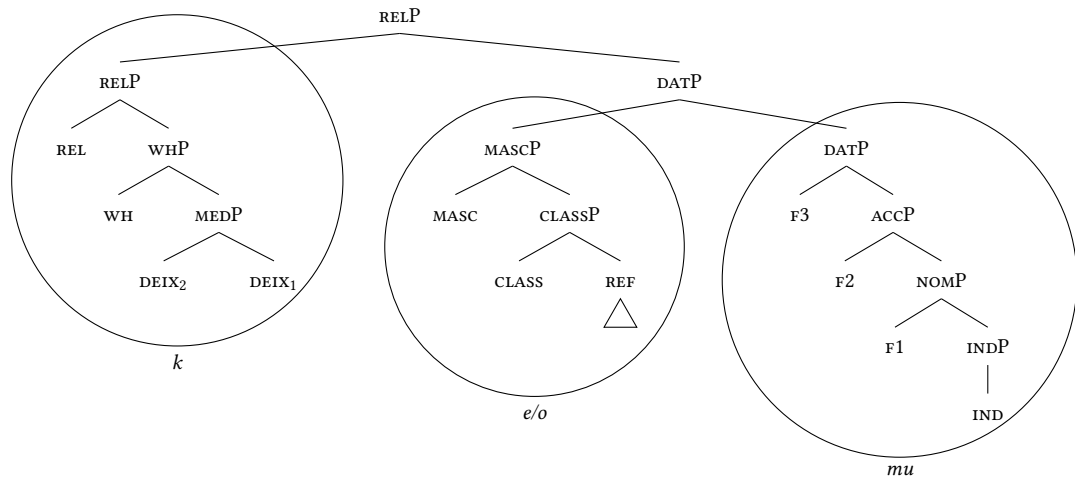
(36) Polish: EXT DAT



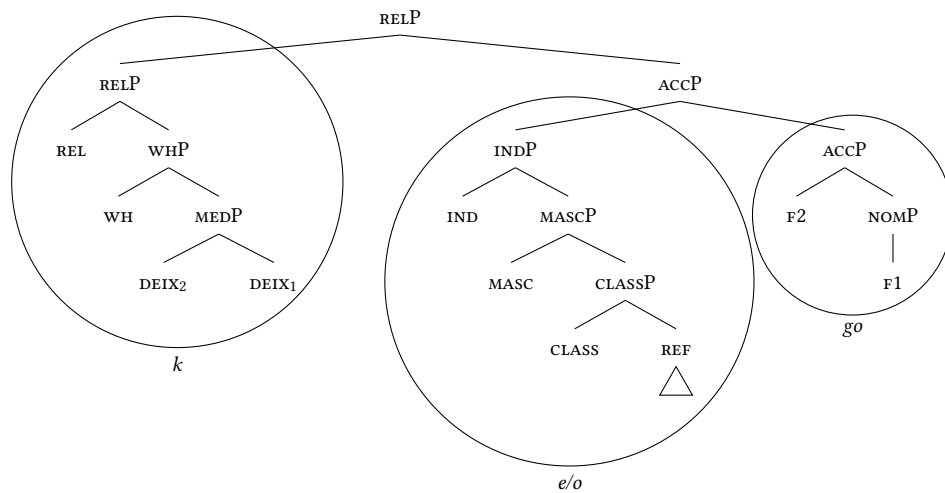
(37) Polish: EXT ACC



(38) Polish: INT DAT



(39) Polish: INT ACC



Consider the example in (40), 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.

- (40) Jan lubi [tego] **kogo -kolkwiek**  
 Jan like.3SG<sub>[ACC]</sub> DEM.ACC.AN.SG REL.ACC.AN.SG ever Maria  
**Maria lubi.**  
 like.3SG<sub>[ACC]</sub>  
 ‘Jan likes whoever Maria likes.’  
 (Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

In Figure 1.15, 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 *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.

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.

- (41) a. \*Jan lubi            [tego]            komu            -kolkwiek  
          Jan like.3SG<sub>[ACC]</sub> DEM.ACC.AN.SG REL.DAT.AN.SG ever  
          **dokucza.**  
          tease.3SG<sub>[DAT]</sub>  
          ‘Jan likes whoever he teases.’  
          (Polish, adapted from Citko 2013 after Himmelreich 2017: 17)
- b. \*Jan lubi            tego            [komu]            -kolkwiek  
          Jan like.3SG<sub>[ACC]</sub> DEM.ACC.AN.SG REL.DAT.AN.SG ever  
          **dokucza.**  
          tease.3SG<sub>[DAT]</sub>  
          ‘Jan likes whoever he teases.’  
          (Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

In Figure 1.16, 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 *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 *indP*. 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 MED, 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.

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.

- (42) a. \*Jan ufa                      [temu]                      **kogo -kolkwiek wpuścił do**  
          Jan trust.3SG<sub>[DAT]</sub> REL.DAT.AN.SG ever let.3SG<sub>[ACC]</sub> 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 wpuścił do**  
 Jan trust.3SG<sub>[DAT]</sub> REL.DAT.AN.SG ever    let.3SG<sub>[ACC]</sub> to            home

**domu.**

‘Jan trusts whoever he let into the house.’

(Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

In Figure 1.17, 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 *indP*. Consider left-most constituent of the relative pronoun that spells out as *k* (REL<sub>P</sub>). The light head lacks the features MED, WH and REL that form the REL<sub>P</sub>. 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.

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?

- (43) 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

- (44) 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.

- (45) 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	DEM <sub>STRONG</sub>	DEM <sub>WEAK</sub>	DEM <sub>WEAK</sub>

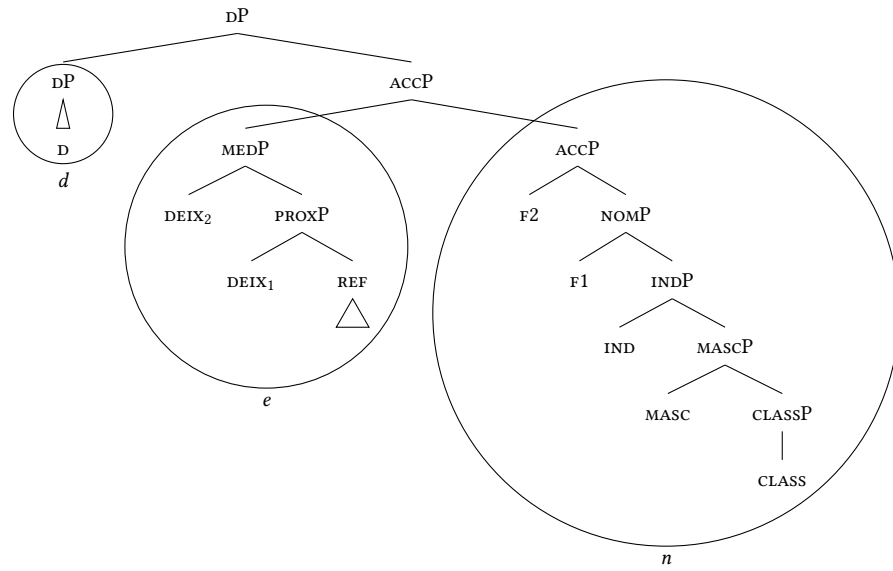
*to* is incompatible with *ever*, because *to* makes it accidentally uniqueness and *ever* requires inherent uniqueness

## 1.4 Deriving the unrestricted type

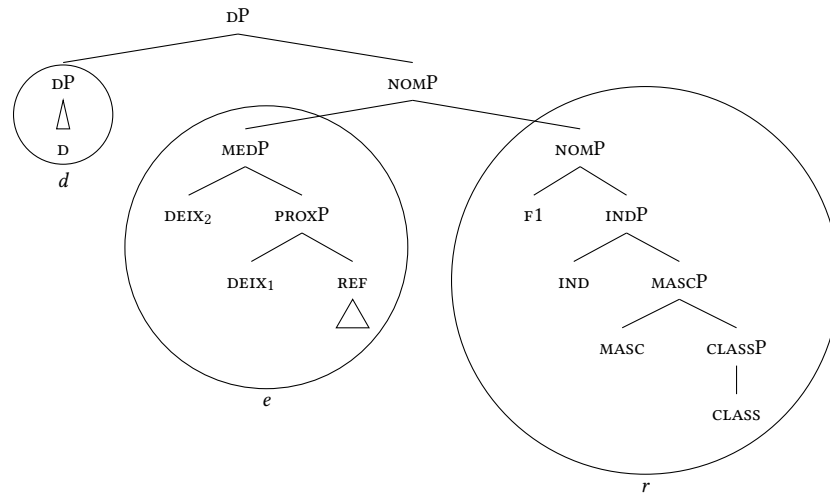
Table 1.10: Light head and relative pronoun in Old High German

	INT > EXT	INT < EXT	
unrestricted	relative pronoun <sub>INT</sub>	light head <sub>EXT</sub>	Old High German

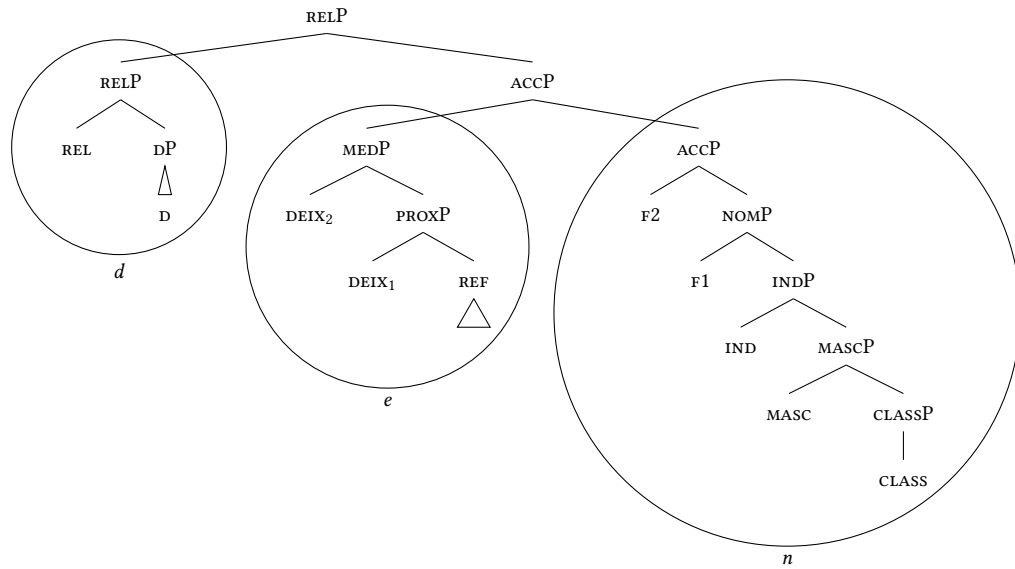
(46) Old High German: EXT ACC



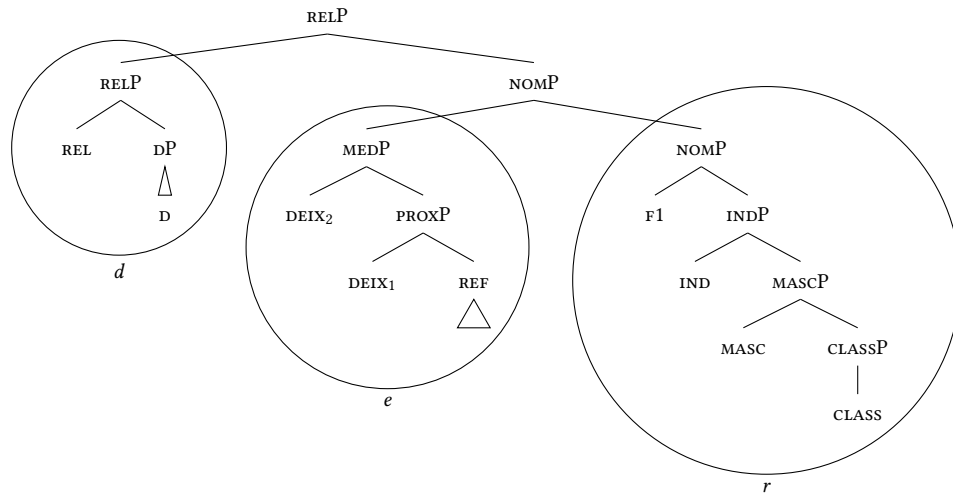
(47) Old High German: EXT NOM



(48) Old High German: INT ACC



(49) Old High German: INT NOM



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.

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 1.11, showing per situation how the base and case parts syntactically contain the other base and case parts. This containment is crucial.

Table 1.11: Base comparison in Old High German

	INT element		EXT element		REL pronoun	
	base <sub>INT</sub>	case <sub>INT</sub>	base <sub>EXT</sub>	case <sub>EXT</sub>	base <sub>REL</sub>	case <sub>REL</sub>
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<sup>11</sup>). 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 (50). *Thér* ‘DEM.SG.M.NOM’ is the head of the relative clause, which is the external

<sup>11</sup>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.

element. *Then* ‘REL.SG.M.ACC’ is the relative pronoun of the relative clause, which is the internal element.

- (50)    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.<sup>12</sup> 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 ?? . I assume that whether both or only one of the elements surfaces is determined by information structure. In (50), 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 ?? .

Consider the example in (51), repeated from Chapter ?? . 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.

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<sup>12</sup>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 1.2.

- (51) Thíz            ist            **then**            **sie**            **zélent**  
 DEM.SG.N.NOM be.PRES.3SG<sub>[NOM]</sub> REL.SG.M.ACC 3PL.M.NOM tell.PRES.3PL<sub>[ACC]</sub>  
 ‘this is the one whom they talk about’  
 not: ‘this is whoever they talk about’ (Old High German, Otfrid III 16:50)

Consider also the example in (51), repeated from Chapter ?? 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.

- (52) enti aer            ant uurta            demo            **zaimo**  
 and 3SG.M.NOM reply.PST.3SG<sub>[DAT]</sub> REL.SG.M.DAT to 3SG.M.DAT  
**sprah**  
 speak.PST.3SG<sub>[NOM]</sub>  
 ‘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 1.12 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.<sup>13,14</sup>

The suffixes that combine with the *d* in demonstrative and relative pronouns also appear on adjectives. This is illustrated in Table 1.13.

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

<sup>13</sup>*d* can also be written as *dh* and *th*, *ē* and *ē* can also be *e* and *é* (Braune 2018: 339).

<sup>14</sup>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 1.12: Relative/demonstrative pronouns in Old High German (Braune 2018: 339)

	N.SG	M.SG	feminine.SG
NOM	d-az	d-ēr	d-iu
ACC	d-az	d-ēn	d-ea/d-ia
DAT	d-ēmu/d-ēmo	d-ēmu/d-ēmo	d-ēru/d-ēro
	N.PL	M.PL	feminine.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

Table 1.13: Adjectives on -a/-ō- in Old High German Braune 2018: 300

	N.SG	M.SG	feminine.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	feminine.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

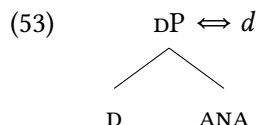
specific to being a demonstrative or relative pronoun, like anaphoricity and definiteness. I assume that these are expressed by the morpheme *d*.

In this section, I only discuss two forms: the nominative and accusative masculine singular relative and demonstrative pronoun. The nominative is *dēr* and the accusative is *dēn*. In what follows, I discuss the feature content of the morphemes *d*, *ēr* and *ēn*. I start with the features that are expressed by the suffixes *ēr* and *ēn*.

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

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

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.



So, the two relative pronouns look like this.<sup>15</sup>

Consider the examples in (54), in which the internal nominative case competes against the external nominative case. The relative clauses are marked in bold, and the light heads and the relative pronouns are underlined. As the light head and the relative pronoun are identical it is impossible to see which of them surfaces. The internal case is nominative, as the predicate *senten* ‘to send’ takes nominative subjects. The relative pronoun *dher* ‘REL.SG.M.NOM’ appears in the nominative case. The external case is nominative as well, as the predicate *queman* ‘to come’ also takes nominative subjects. The light head *dher* ‘DEM.SG.M.NOM’ appears in the nominative case. (54a) is the variant of the sentence in which the light head is absent (indicated by the square brackets) and the relative pronoun surfaces. (54b) is the variant of the sentence in which the relative pronoun is absent (indicated by the square brackets) and the light head surfaces.

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<sup>15</sup> 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 ??.



Consider the example in (55), 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 *zellen* ‘to tell’ takes accusative objects. The relative pronoun *then* ‘REL.SG.M.ACC’ appears in the accusative case. This is the element that surfaces. The external case is nominative, as the predicate *sin* ‘to be’ takes nominative objects. The light head *ther* ‘DEM.SG.M.NOM’ appears in the nominative case. It is placed between square brackets because it does not surface.

- (55)    *Thíz*            *ist*                    [*ther*]            [*then*]            *sie*  
           DEM.SG.N.NOM be.PRES.3SG<sub>[NOM]</sub> DEM.SG.M.NOM REL.SG.M.ACC 3PL.M.NOM  
           ***zélent***  
           tell.PRES.3PL<sub>[ACC]</sub>  
           ‘this is the one whom they talk about’ (Old High German, Otfrid III 16:50)

In Figure 1.19, 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: *th*, *e* and *n*. The light head consists of three morphemes: *th*, *e* 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 middle constituent of the light head that spells out as *e* (MEDP). This constituent is also a constituent in the relative pronoun. I end with the left-most constituent of the light head that spells out as *d* DP. 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.

Consider the examples in (56), 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. The internal case is nominative, as the predicate *gisizzen* ‘to possess’ takes nominative subjects. The rela-

tive pronoun *dher* ‘REL.SG.M.NOM’ appears in the nominative case. It is placed between square brackets because it does not surface. The external case is accusative, as the predicate *bibringan* ‘to create’ takes accusative objects. The light head *dhen* ‘DEM.SG.M.ACC’ appears in the accusative case. This is the element that surfaces.

- (56)    ih            bibringu            fona iacobes    samin            endi fona  
           1SG.NOM create.PRES.1SG<sub>[ACC]</sub> of    Jakob.GEN seed.SG.DAT and of  
           iuda            dhen            [**dher**]            **mina**  
           Judah.DAT REL.SG.M.ACC my.ACC.M.PL mountain.ACC.PL  
           **berga**                    **chisitzit**  
           possess.PRES.3SG<sub>[NOM]</sub>  
           ‘I create of the seed of Jacob and of Judah the one, who possess my mountains’
- (Old High German, Isid. 34:3)

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: *dh*, *e* and *r*. The light head consists of three morphemes: *dh*, *e* 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. As each constituent of the light head is also a constituent within the relative pronoun or is syncretic with one, the relative pronoun can be absent. I illustrate this by marking the content of the dashed circles for the relative pronoun gray.

I explain this constituent by constituent. I start with the right-most constituent of the relative pronoun head that spells out as *r* (NOMP). This constituent is also a constituent in the light head, contained in ACCP. I continue with the middle constituent of the relative pronoun that spells out as *e* (MEDP). This constituent is also a constituent in the light head. I end with the left-most constituent of the relative pronoun that spells out as *d* RELP. This constituent is not contained in the light head, but it is syncretic with it. The dP is also spelled out as *d*. All three constituent of the light head are also a constituent within the relative pronoun or are syncretic with

them, and the relative pronoun can be absent.

## 1.5 Technical details

Modern German:

I start at the beginning, with the REF, merging it with DEIX<sub>1</sub>, giving a *e*.

So if then DEIX<sub>2</sub> 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.

## 1.6 Summary

The linguistic counterpart of ‘allow EXT?’ is whether the internal base and the external base are syncretic ( $\text{base}_{\text{INT}} = \text{base}_{\text{EXT}}?$ ). The linguistic counterpart of ‘allow INT?’ is whether the external base is a clitic ( $\text{base}_{\text{EXT}} = \text{clitic}?$ ).

## 1.7 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.

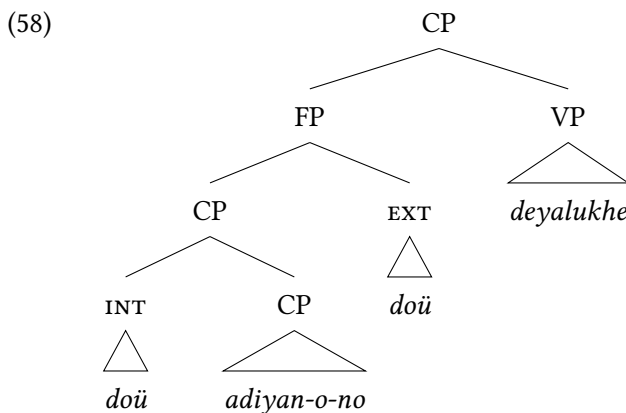
In this dissertation I focus on when languages allow the internal and external case to win the case competition. In my proposal, this depends on the comparison between the internal and external base. The larger syntactic context in which this takes place should be kept stable. For concreteness, I show 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 (57). The head of the relative clause is *doü* ‘sago’, and it appears inside the relative clause and outside.

- (57)    [**doü** adiyān-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.

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

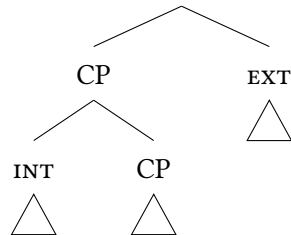


In most languages one of the two heads is deleted throughout the derivation.

According to Cinque 2020, the internal element can delete the external element,

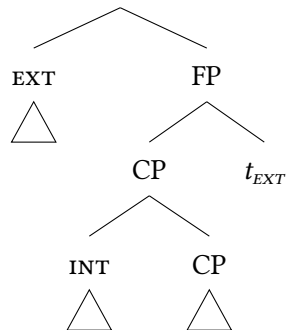
because the internal element c-commands the external element. This is c-command according to Kayne's definition of it: the internal element is in the specifier of the specifier of the FP.

(59)



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.<sup>16</sup> From this position, the external element can delete the internal one, because the external element c-commands the internal one.

(60)



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

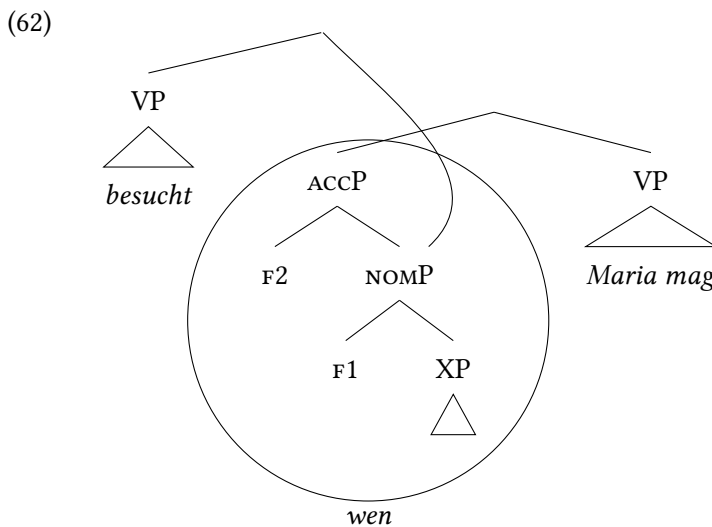
<sup>16</sup>What remains unclear is what the trigger is for the movement of the external element over relative clause is.

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 (61). Here the internal case is accusative and the external one nominative.

- (61) Uns besucht **wen** **Maria** mag.  
 we.ACC visit.3SG<sub>[NOM]</sub> REL.ACC.AN Maria.NOM like.3SG<sub>[ACC]</sub>  
 ‘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.



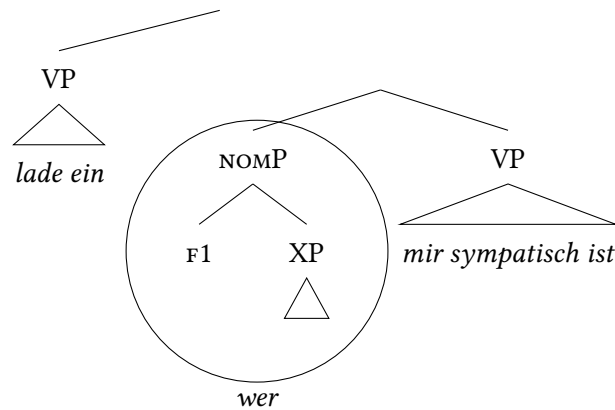
The other way around does not work. Consider (63). This is an example with nominative as internal case and accusative as external case.

- (63) \*Ich lade ein, **wen** **mir** sympathisch ist.  
 I.NOM invite.1SG<sub>[ACC]</sub> REL.ACC.AN I.DAT nice be.3SG<sub>[NOM]</sub>  
 ‘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.

(64)



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  $EXT$



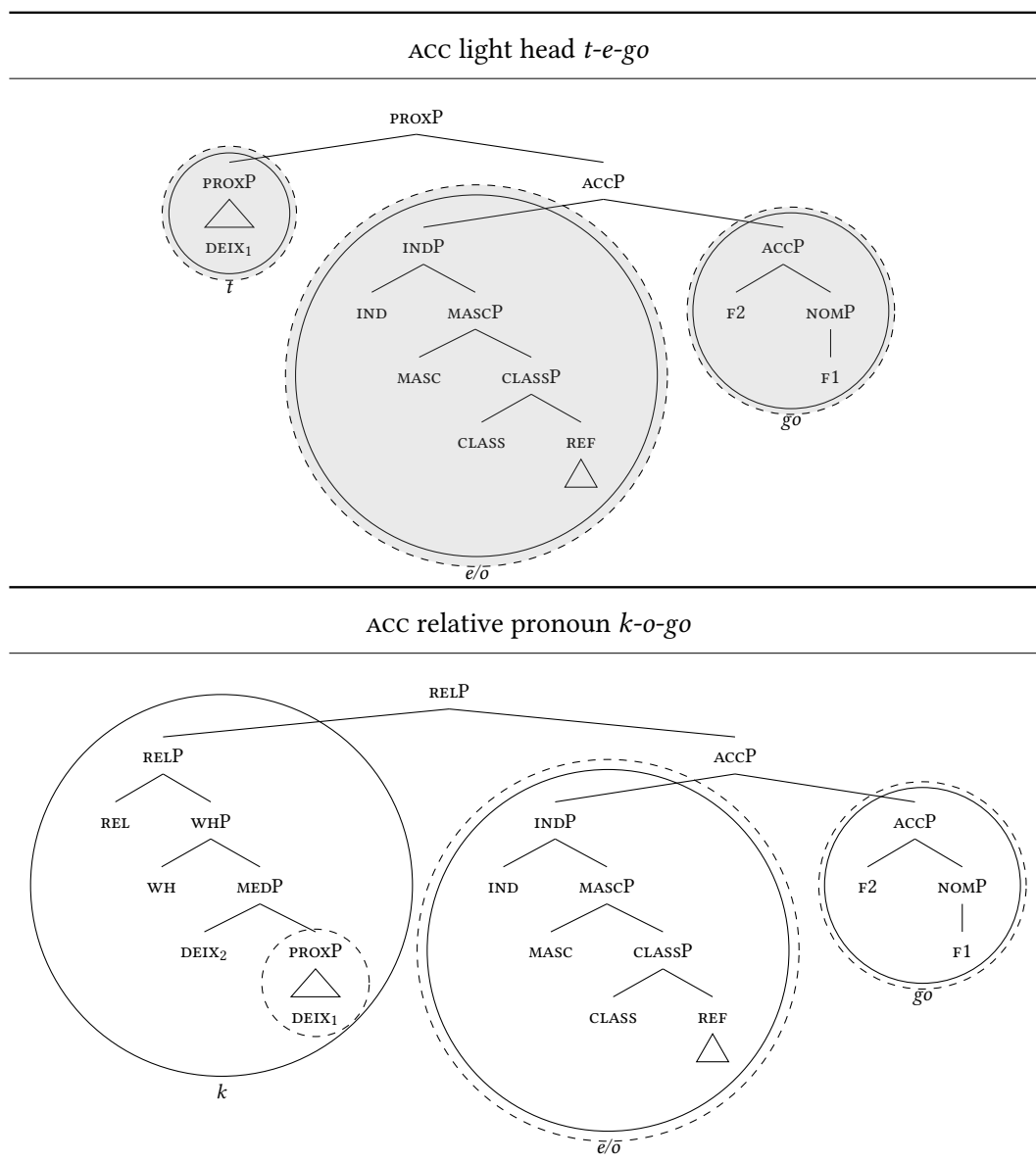
Figure 1.15: Polish  $\text{EXT}_{\text{ACC}}$  vs.  $\text{INT}_{\text{ACC}} = kogo$ 

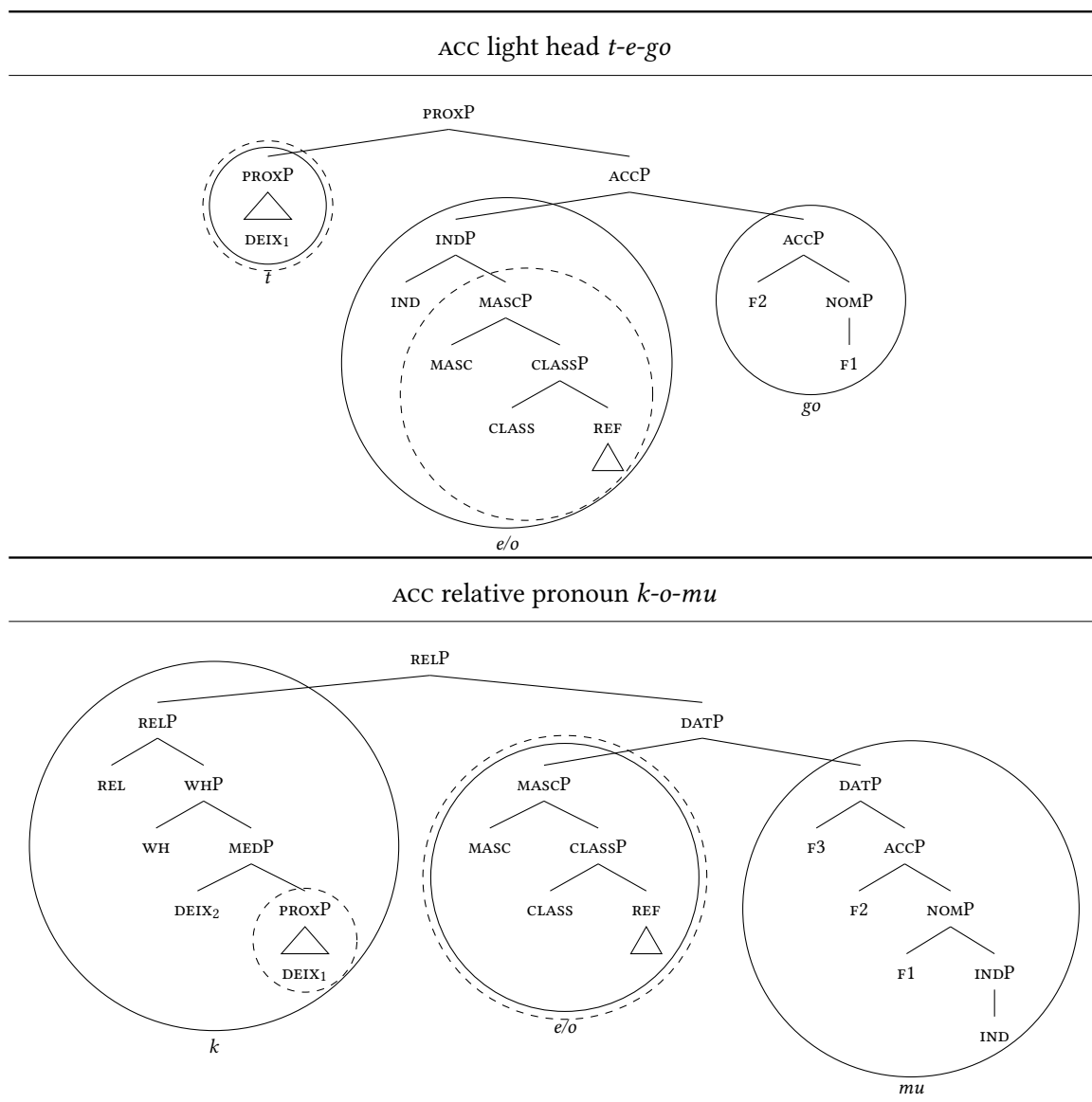
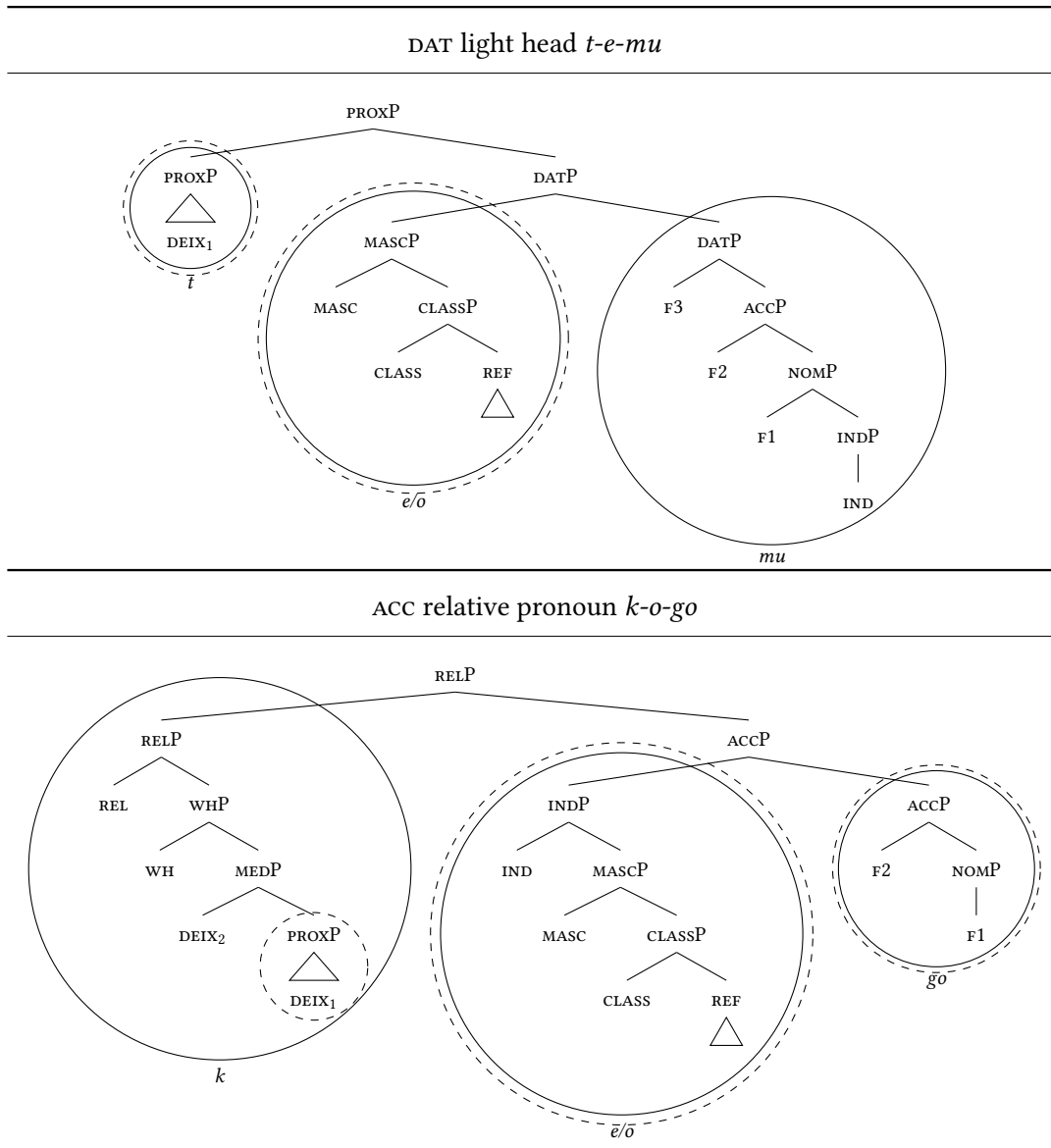
Figure 1.16: Polish  $\text{EXT}_{\text{ACC}}$  vs.  $\text{INT}_{\text{DAT}} \neq \text{tego/komu}$ 

Figure 1.17: Polish  $\text{EXT}_{\text{DAT}}$  vs.  $\text{INT}_{\text{ACC}} \neq \text{temu/kogo}$ 

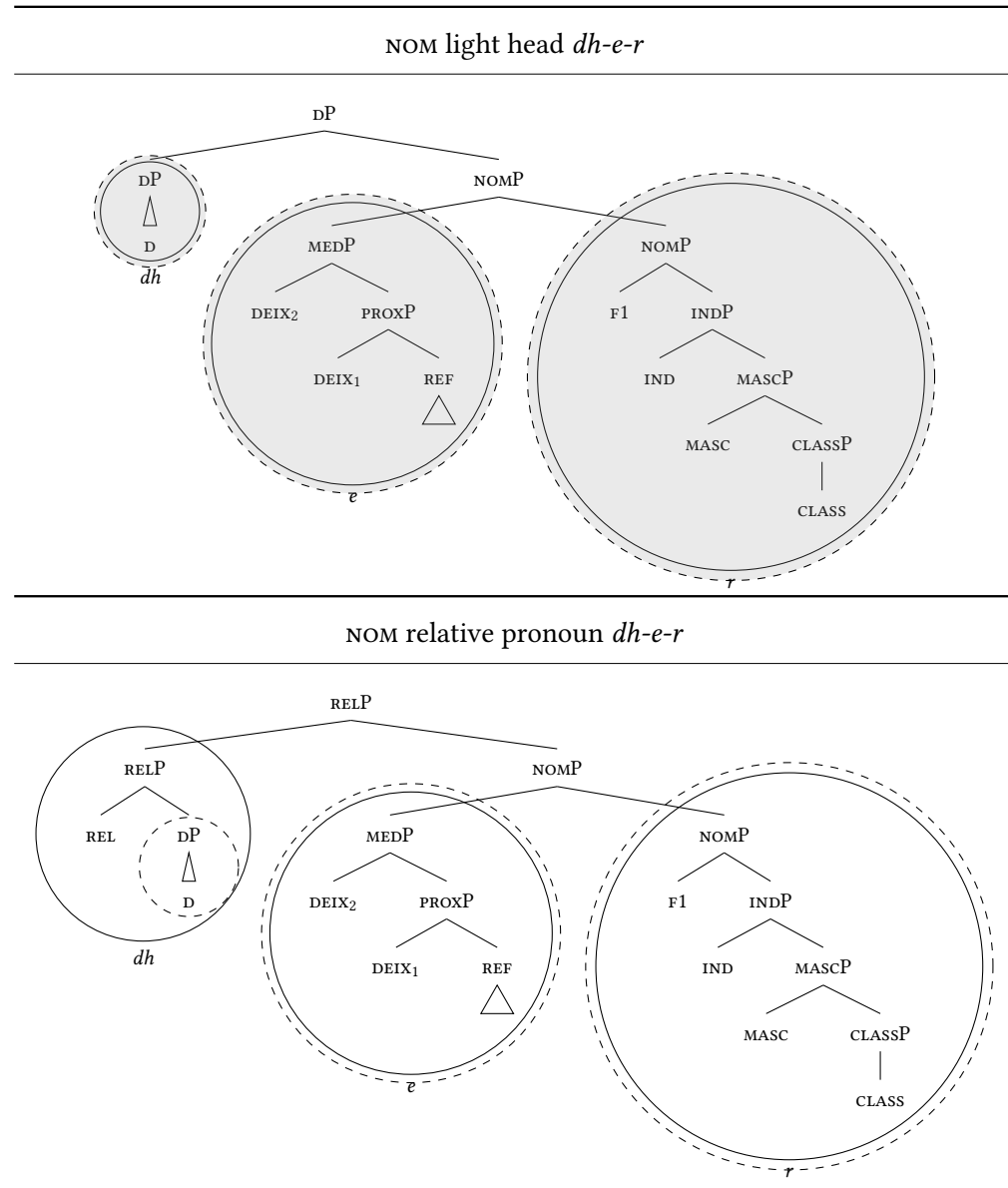
Figure 1.18: Old High German  $\text{EXT}_{\text{NOM}}$  vs.  $\text{INT}_{\text{NOM}} = \textit{dher}$

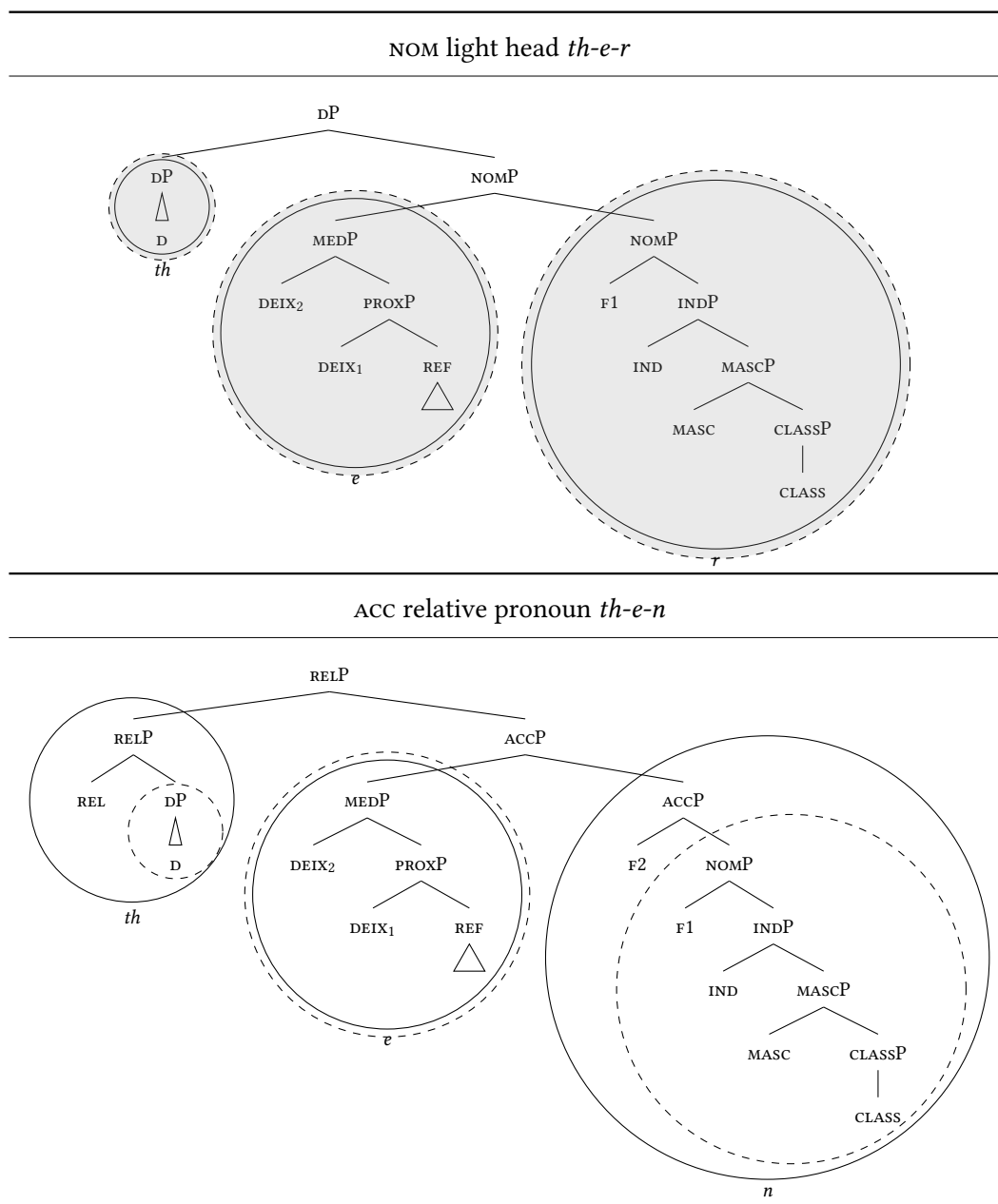
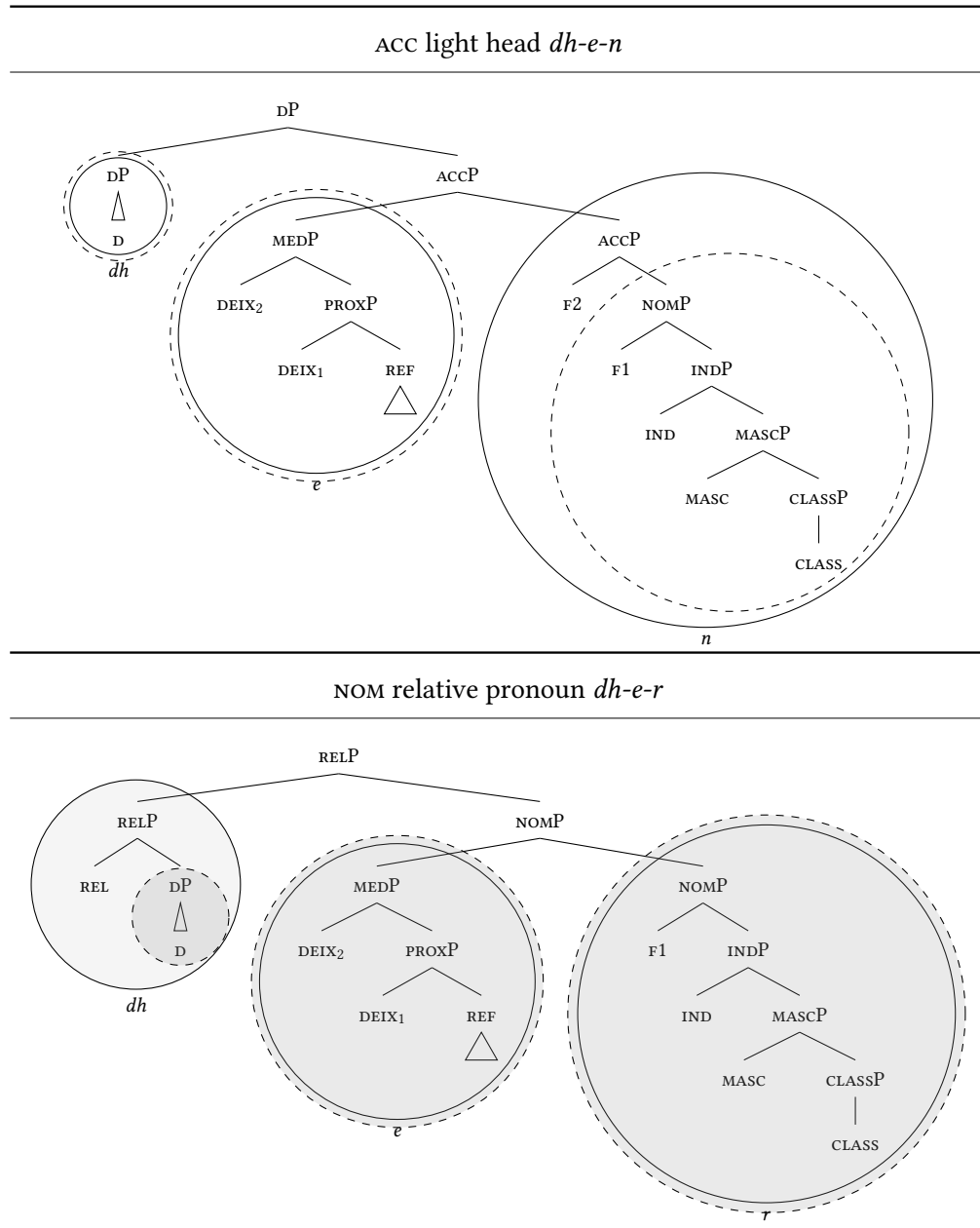
Figure 1.19: Old High German  $\text{EXT}_{\text{NOM}}$  vs.  $\text{INT}_{\text{ACC}} = \textit{then}$ 

Figure 1.20: Old High German  $\text{EXT}_{\text{ACC}}$  VS.  $\text{INT}_{\text{NOM}} = \textit{dhen}$ 

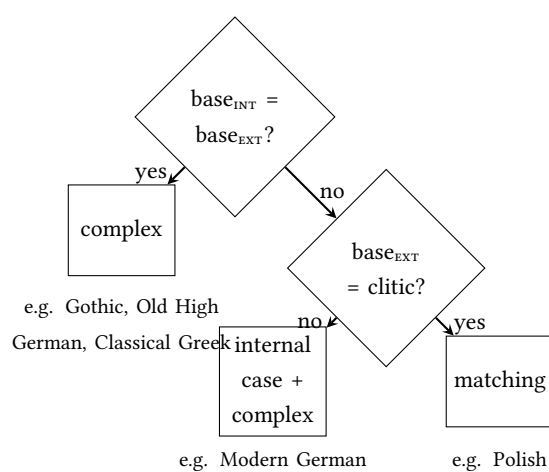


Figure 1.21: Two theoretical parameters generate three language types





# Primary texts

**Isid.** Der althochdeutsche Isidor

**Mons.** The Monsee fragments

**Otfrid** Otfrid's Evangelienbuch



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