CASE COMPETITION IN HEADLESS RELATIVES

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List of abbreviations

ACC	accusative
F	feminine
INAN	inanimate
NOM	nominative
PL	plural
PRES	present tense
REL	relative marker
SG	singular

Part I

Case competition

Part II

The typology

Part III

Deriving the typology

phi features

Chapter 6

The source of variation

In Chapter 4, I introduced two descriptive parameters that describe the differences between the attested languages. I repeat the overview in Figure 6.1.

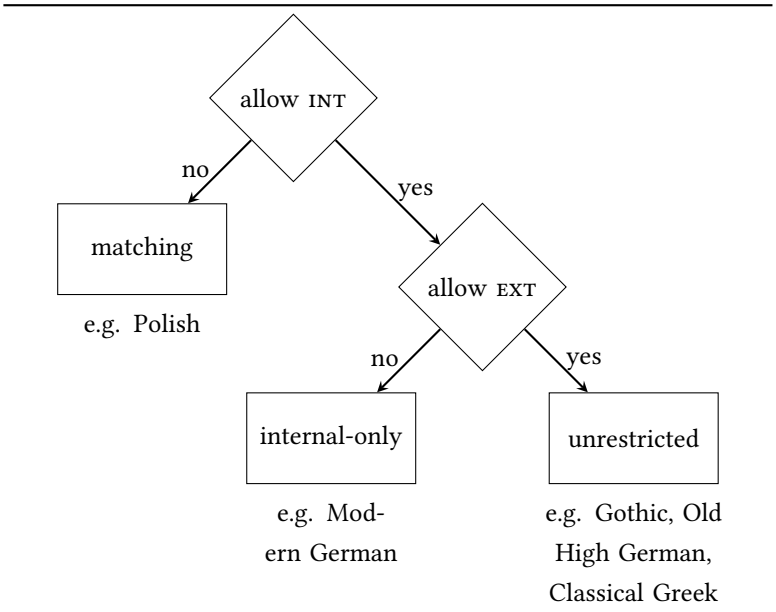


Figure 6.1: Two descriptive parameters generate three language types

The first parameter, *allow INT*, is whether the internal case is allowed to surface when it wins the case competition. This parameter distinguishes the matching type of language from the internal-only and the unrestricted type of languages. The second parameter, *allow EXT*, is whether the external case is allowed to surface when it wins the case competition. This parameter distinguishes the internal-only type of language from the unrestricted type of language.

When the parameters are formulated like this, they describe the different lan-

guage types, but they are specific to the headless relative construction. Ideally, the difference between languages can be derived from independent properties of the language. [1] I argue that there is such a property: the different lexical entries that are present in different languages. These different lexical entries are the links between lexical trees, phonological representations and conceptual representations, which are part of the language's lexicon. The goal of Part III of this dissertation is to show how different lexical entries lead to differences in language types and to illustrate in detail how this works for the three different language types discussed in Chapter 4. In this chapter I give the basic idea behind my proposal. I work the proposal out for the three different language types in the following three chapters.

This chapter is structured as follows. First, I discuss the basic assumptions that I am making, which are the same for each of the discussed language types. Then I introduce the source of the crosslinguistic variation: the lexical entries that are present in the different language types. I show how differences in lexical entries ultimately lead to different language types.

6.1 Underlying assumptions

I start with my assumption that headless relatives are derived from light-headed relatives.[2] The light head bears the external case, and the relative pronoun bears the internal case, as illustrated in (1).

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

In a headless relative, either the light head or the relative pronoun is deleted.

To see what a light-headed relative looks like, consider the Old High German light-headed relative in (2). The relative clause, including the relative pronoun, is marked in bold. *Thér* 'LH.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* 'RP.SG.M.ACC' is the relative pronoun in the relative clause. This is the element that appears in the internal case, the case that reflects the grammatical role within the relative clause.

[1] Exactly this point was raised by in Grosu (2003, p. 147): "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." He investigated the correlation between the morphology richness of morphology and the willingness for a language to show headless relatives. He found a certain tendency, but no absolute rule.

[2] The same is argued for headless relatives with D-pronouns in Modern German by Fuß and Grewendorf (2014) and Hanink (2018) and for Polish by Citko (2004). Several others claim that headless relatives have a head, but that it is phonologically empty (cf. Bresnan and Grimshaw, 1978; Groos and van Riemsdijk, 1981; Himmelreich, 2017).

(2) eno nist thiz thér **then** **ir**
now not be.3SG$_{[NOM]}$ DEM.SG.N.NOM LH.SG.M.NOM RP.SG.M.ACC 2PL.NOM
suochet **zi arslahanne**?
seek.2PL$_{[ACC]}$ to kill.INF.SG.DAT
'Isn't this now the one, who you seek to kill?'
(Old High German, Tatian 349:20)

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. 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 the relative pronoun and calling the relative pronoun is actually sometimes the light head (when the relative pronoun is deleted) and sometimes the relative pronoun (when the light head is deleted). To reflect that, I call the surfacing element from now on the surface pronoun.

This brings me to my second assumption, which concerns the circumstances under which the light head or the relative pronoun can be deleted. A light head or a relative pronoun can be deleted when their content can be recovered. The content can be recovered when there is an antecedent which contains the deleted element. More specifically, the deleted element needs to form a single constituent within the antecedent.[3]

For light heads and relative pronouns this means that one of them can be absent when they form a constituent within the other element.[4] In other words, it depends on the comparison between the light head and the relative pronoun themselves which one of them is absent. Specifically, it depends on the comparison of the constituents that the two elements consist of. Note that it is also possible that neither of the elements form a constituent within the other one. The consequence is then that neither of them is deleted, which describes the situation in which there is no grammatical headless relative.

I continue with my third assumption. In order to be able to compare the light head and the relative pronoun, I zoom in on their internal syntax. In Chapter 7 to 9 I give arguments to support the structures I am assuming here. Figure 6.2 gives a simplified representation of the light head and the relative pronoun.

[3]In Section 6.2.2 I show that constituent containment is also a necessary requirement in other types of deletion operations.

[4]Throughout this chapter I elaborate further on the exact requirements for constituent containment. There are namely two types of constituent containment possible. The first type is structural constituent containment: an element can be absent if it is a constituent that is structurally contained within the other element. I elaborate on this in Section 6.2.2. The second type is formal constituent containment: an element can be absent if it is a constituent that is formally contained within the other element. I elaborate on this in Section 6.2.3.

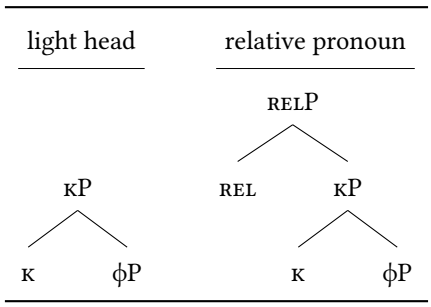


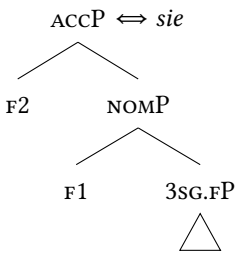
Figure 6.2: LH and RP

I assume that the light head and the relative pronoun partly contain the same syntactic features. The features they have in common are case features (K) and what I here simplify as phi features (ϕ). The light head and the relative pronoun differ from each other in that the relative pronoun has at least one feature more, which I call here REL.

The three assumptions I just introduced hold for all language types I discuss. In all language types, headless relatives are derived from light-headed relatives. For all language types, the deletion operation requires constituent containment. And in all language types, the relative pronoun consists of the features of the light head plus at least one additional feature (here REL). The difference between languages does not come from modifying these assumptions in any way, but from how different languages package their features into constituents. Before I explain how differences in constituency lead to different language types, I show how differences in constituency arise.

In Chapter 3 I discussed the third person singular feminine pronoun in German. I repeat the lexical entry I gave for it in (3).

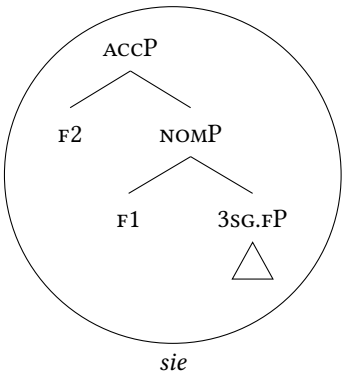
(3)



The lexical entry corresponds to the pronominal features, F1 and F2 and the phonological form *sie*.

Consider the syntactic structure of the accusative pronoun in German in (4).

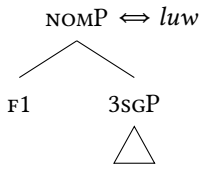
(4)



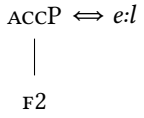
This syntactic structure is contained in the lexical tree in (3), so is spelled out as *sie*. This means that the accusative pronoun in German is spelled out by a single lexical entry.

The situation is different for the third person singular pronoun in Khanty, which I also showed in Chapter 3. In Khanty, there is not a single lexical entry that spells out all features that the German lexical entry in (3) spells out. Instead, the same features are realized by two separate lexical entries, shown in (5).

(5) a.



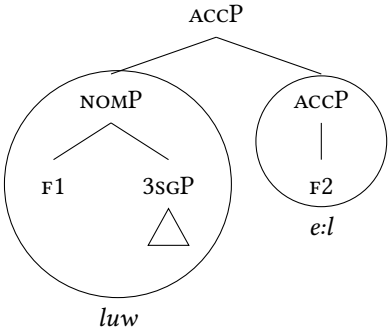
b.



The lexical entry in (5a) corresponds to the pronominal features and the feature F1 and the phonological form *luw*. The lexical entry in (5b) corresponds to the feature F2 and the phonological form *e:l*.

Consider the syntactic structure of the accusaitve pronoun in Khanty in (6).

(6)



Nanosyntax only allows constituents to be spelled out, which means that in order to spell out the ACCP, the NOMP needs to be moved out of the way first.[5] Now compare the syntactic structures of the German accusative pronoun in (4) and the Khanty one in (6). The feature content is the same (except for the feminine feature, which does not play a role here), but the internal syntax looks different. This change in internal syntax is a direct consequence of the lexical entries that are available within the language.

Exactly this type of difference is what leads to the different language types in headless relatives. Languages contain different lexical entries that spell out the features of the light head and the relative pronoun. The different lexical entries lead to differences in the internal syntax of the light head and the relative pronoun. Differences in the internal syntax of the light head and the relative pronoun lead to differences in whether or not one of them is contained in the other. Whether or not one of them is contained in the other determines whether or not the light head or relative pronoun can be recovered and, therefore, deleted. Whether or not the light head or relative pronoun can be deleted determines whether or not there is a single surface pronoun and, with that, a grammatical headless relative. I summarize chain in (7).

(7) lexical entries → internal syntax → containment → deletion → surface pronoun

The different language types appear by going through the chain in (7) in the three different situations: (i) when the internal and external case match, (ii) when the internal case is the more complex case, and (iii) when the external case is the more complex case. An overview of these situation and whether or not a surface pronoun, and therefore a grammatical headless relative, results from it is shown in Table 6.1.

In the unrestricted type of language, the lexical entries are such that there is a grammatical headless relative when the cases match, when the internal case is more complex and when the external case is more complex. In the internal-only type of language, the lexical entries are such that there is a grammatical headless relative when the cases match and when the internal case is more complex but not when external case is more complex. In the matching type of language, the lexical entries are such that there is a grammatical headless relative when the cases match but not when the internal case is more complex or when the external case is more complex.

In sum, I assume that headless relative clauses are derived from light-headed relatives. Light-headed relatives contain a light head and a relative pronoun. In a headless relative either the light head or the relative pronoun is deleted. The nec-

[5]The movement operation is part of the spellout algorithm in Nanosyntax, which is the same for all languages. I elaborate on this spellout algorithm in Chapters 7 and 8.

Table 6.1: Overview situations

language type	situation	surface pronoun
unrestricted	$K_{INT} = K_{EXT}$	✓
	$K_{INT} > K_{EXT}$	✓
	$K_{INT} < K_{EXT}$	✓
internal-only	$K_{INT} = K_{EXT}$	✓
	$K_{INT} > K_{EXT}$	✓
	$K_{INT} < K_{EXT}$	*
matching	$K_{INT} = K_{EXT}$	✓
	$K_{INT} > K_{EXT}$	*
	$K_{INT} < K_{EXT}$	*

essary requirement for deletion is that the deleted element (either the light head or relative pronoun) is a constituent that is structurally contained within the other element. Light heads and relative pronouns contain the same features, and the relative pronoun contains at least one feature more. The difference between language types ultimately arises from languages having different lexical entries that spell out the features of the light head and the relative pronoun.

6.2 The three language types

In Chapter 4 I discussed three different language types. In this section I broadly sketch the kind of lexical entries these language types have that ultimately lead to them being of these types. For each language type I start with describing the kind of lexical entries they have, and I show the internal syntax that the light head and the relative pronoun have because of that.[6] For each language type, I compare the constituents of the light head and the relative pronoun in the three different situations: (i) when the cases on the light head and the relative pronoun match, (ii) when the relative pronoun bears the more complex case, and (iii) when the light head bears the more complex case. I show that the internal syntax I assume for the light head and the relative pronoun leads to the different patterns observed in the given language types.

[6]In this chapter I do not motivate the lexical entries I propose. In chapters 7 to 9 I take a concrete example for each language type and I show evidence for the lexical entries I am proposing.

6.2.1 The internal-only type

I start with the internal-only type of language. I suggest that the light head and the relative pronoun in this type of language have the internal syntax as shown in Figure 6.3.

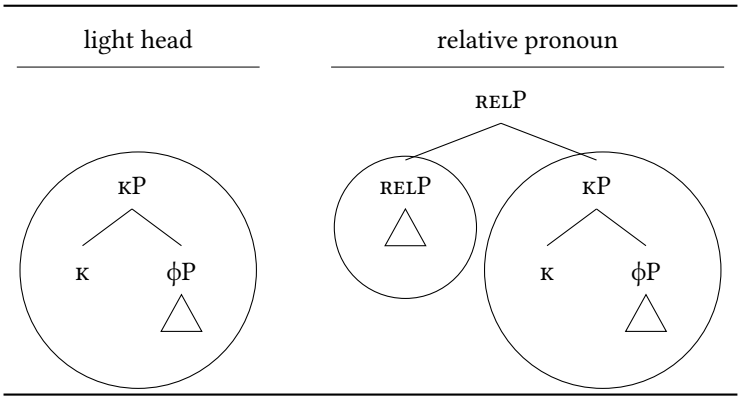


Figure 6.3: LH and RP in the internal-only type

This is a consequence of the following lexical entries. The light head is spelled out by a single lexical entry, indicated by the circle around the KP. This lexical entry is a portmanteau of a phi and case features. The relative pronoun is spelled out by two lexical entries, indicated by the circles around the KP and the RELP. The phi and case features of the relative pronoun are spelled out by the same portmanteau as the light head is. The RELP is spelled out by a separate lexical entry. Chapter 7 motivates this analysis for the internal-only type of language Modern German.

In Figure 6.4, I give an example in which the relative pronoun and the light head bear the same case.

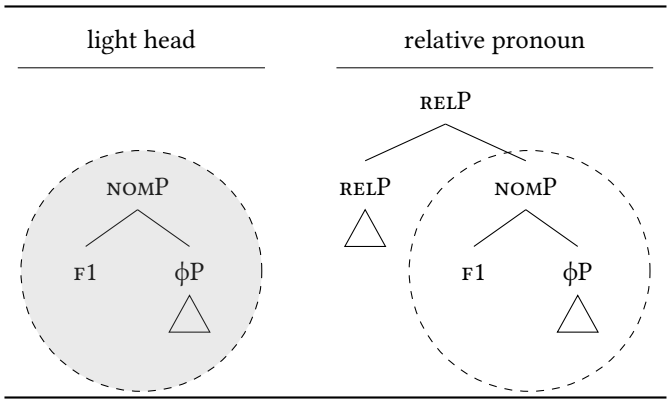


Figure 6.4: EXT_{NOM} vs. INT_{NOM} in the internal-only type

I draw a dashed circle around each constituent that is a constituent in both the

light head and the relative pronoun. The light head (the NOMP) is a constituent that is structurally contained within the relative pronoun (the RELP), so the light head can be deleted. I illustrate this by marking the content of the dashed circles for the light head gray. As the light head is deleted, the headless relative surfaces with the relative pronoun that bears the internal case.

In Figure 6.5, I give an example in which the relative pronoun bears a more complex case than the light head.

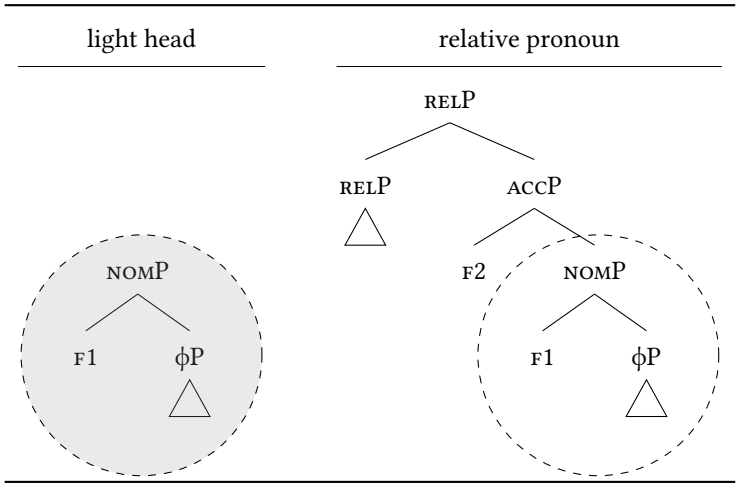


Figure 6.5: EXT_{NOM} vs. INT_{ACC} in the internal-only type

I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. The light head (the NOMP) still is a constituent that is structurally contained within the relative pronoun (the RELP), so the light head can be deleted. I illustrate this by marking the content of the dashed circles for the light head gray. As the light head is deleted, the headless relative surfaces with the relative pronoun that bears the internal case.

In Figure 6.6, I give an example in which the light head bears a more complex case than the relative pronoun.

I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. Different from the examples in Figure 6.4 and 6.6, the light head does not form a constituent within the relative pronoun. The NOMP of the light head is a constituent that is structurally contained within the relative pronoun, but the relative pronoun does not contain the feature F2 that forms an ACCP. The NOMP of the relative pronoun is a constituent that is structurally contained within the relative pronoun, but the light head does not contain the feature REL that forms a RELP. As a result, none of the elements can be absent. I illustrate this by leaving the content of both dashed circles unfilled. As none of the items is deleted, there is no grammatical headless relative possible.

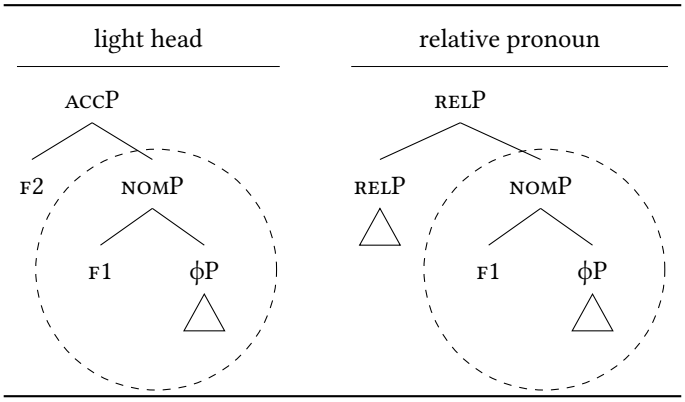


Figure 6.6: EXT_{ACC} vs. INT_{NOM} in the internal-only type

The comparisons between the light head and the relative pronoun in different cases correctly derive the observed patterns in the internal-only type of language. An overview of the patterns is shown in Table 6.2.

Table 6.2: Grammaticality in the internal-only type

situation	lexical entries		containment	deleted	surfacing
	LH	RP			
$K_{INT} = K_{EXT}$	$[K_1[\phi]]$	$[REL]$, $[K_1[\phi]]$	structure	LH	RP_{INT}
$K_{INT} > K_{EXT}$	$[K_1[\phi]]$	$[REL]$, $[K_2[K_1[\phi]]]$	structure	LH	RP_{INT}
$K_{INT} < K_{EXT}$	$[K_2[K_1[\phi]]]$	$[REL]$, $[K_1[\phi]]$	no	none	*

Languages of the internal-only type have a lexical entry that spells out phi and case features and a lexical entry that spells out the feature REL. Headless relatives in this type of language are grammatical when the internal and the external case match and when the internal case is more complex than the external case. In these situations, the light head is a constituent that is structurally contained within the relative pronoun, the light head is deleted, and the relative pronoun is the surface pronoun. Headless relatives are ungrammatical when the external case is more complex than the internal case, because then the light head no longer is a constituent that is structurally contained within the relative pronoun, and none of the elements is deleted.

6.2.2 The matching type

I continue with the matching type of language. I suggest that the light head and the relative pronoun in this type of language have the internal syntax as shown in Figure

6.7.

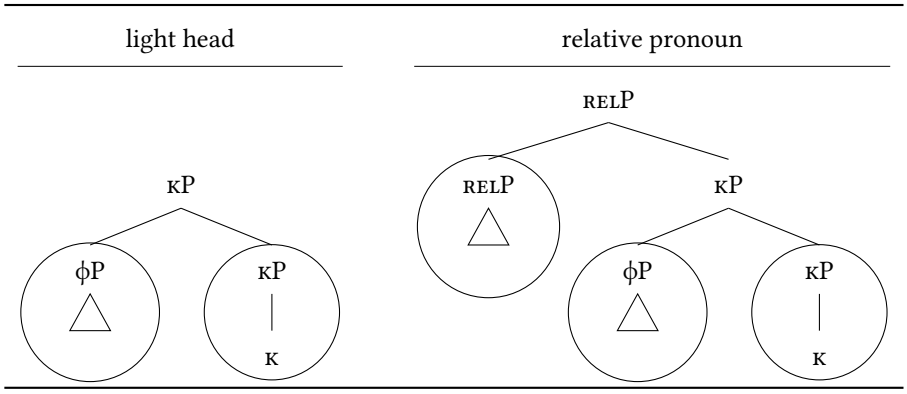


Figure 6.7: LH and RP in the matching type

This is a consequence of the following lexical entries. The light head is spelled out by two lexical entries: one that spells out the ϕP and one that spells out the KP which does not contain the ϕP. I indicate this by circling the ϕP and the KP. Notice that the ϕP has moved over the KP, which is a direct consequence of the available lexical entries. Remember that Nanosyntax only allows constituents to be spelled out. KP can only be spelled out if the ϕP is moved out of the way. This is the crucial difference between the internal-only type of language and the matching type of language: the former has a single lexical entry that spells out both phi and case features and the latter has two separate ones. Exactly this ultimately leads to two different languages types. The relative pronoun in the matching type of language is spelled out by three lexical entries: the ϕP and the KP that are also part of the light head, and in addition the RELP. I indicate this by circling the RELP, the ϕP and the KP. Chapter 7 motivates this analysis for the matching type of language Polish.

In Figure 6.8, I give an example in which the light head and the relative pronoun bear the same case.

I draw a dashed circle around each constituent that is a constituent in both the light head and the relative pronoun. In this instance it is no problem that the ϕP has moved over the NOMP. The light head (the NOMP) still is a constituent that is structurally contained within the relative pronoun (the RELP), so the light head can be deleted. I illustrate this by marking the content of the dashed circles for the light head gray. As the light head is deleted, the headless relative surfaces with the relative pronoun that bears the internal case.

In Figure 6.9, I give an example 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. The light head (the NOMP) no longer is a con-

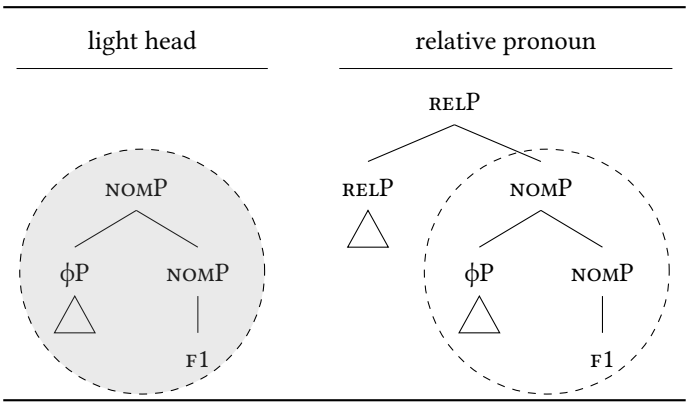


Figure 6.8: EXT_{NOM} vs. INT_{NOM} in the matching type

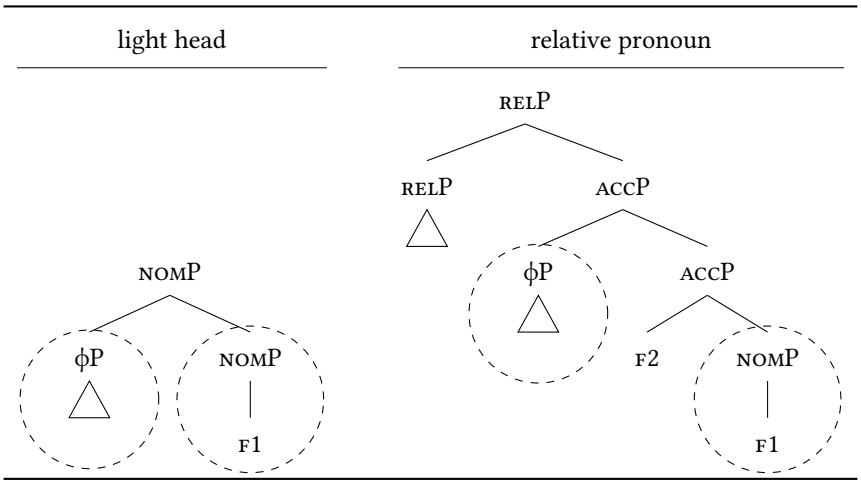


Figure 6.9: EXT_{NOM} vs. INT_{ACC} in the matching type

stituent that is structurally contained within the relative pronoun (the RELP). Therefore, the light head cannot be deleted, which I illustrate by leaving the content of both dashed circles unfilled. As none of the items is deleted, there is no grammatical headless relative possible. Figure 6.9 shows that in this instance it is a problem the ϕP has moved over the NOMP or ACCP.

Something else the example shows is the necessity to formulate the proposal in terms of constituent containment instead of feature containment. To illustrate the difference, I repeat the example from the internal-only type in which the relative pronoun could delete the light head in Figure 6.10 from Figure 6.5.

In Figure 6.10, two different types of containment hold: feature containment and structural constituent containment. With feature containment, each feature of the light head (i.e. features contained in ϕP and F1) is also a feature within the relative pronoun. Therefore, the relative pronoun contains the light head. With structural

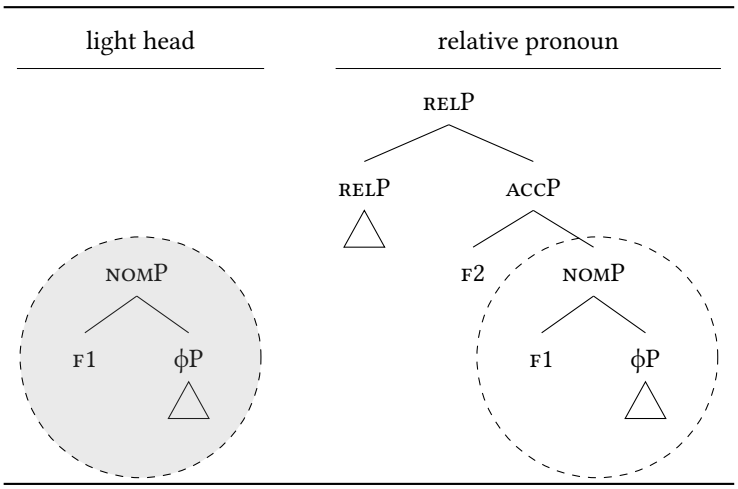


Figure 6.10: EXT_{NOM} vs. INT_{ACC} in the internal-only type (repeated)

constituent containment, the NOMP is a constituent that is structurally contained within the RELP. Therefore, the relative pronoun contains contains the light head.

Consider Figure 6.9 again. Here feature containment holds, but structural constituent containment does not. The light head and the relative pronoun contain exactly the same features for the light head and the relative pronoun as in Figure 6.10, so also here each feature of the light head (i.e. features contained in ϕP and F1) is also a feature within the relative pronoun. However, the features form a different syntactic structure, in such a way that the light head no longer forms a single constituent within the relative pronoun.

In sum, structural constituent containment is a stronger requirement than feature containment. Only this stronger requirement is able to distinguish the internal-only type of language from the matching type of language. Therefore, this account crucially relies on structural constituent containment being the containment requirement that needs to be fulfilled.

Structural constituent containment is not an ad hoc requirement for deletion of a light head or relative pronoun. It is also what seems to be crucial in NP ellipsis in general. Cinque (2020) argues that nominal modifiers can only be absent if they form a constituent with the NP. If they do not, they can not be deleted while still being interpreted, meaning that ellipsis is ungrammatical. In what follows, I present his argument.

In (8), I give an example of a conjunction with two noun phrases from Dutch. The first conjunct consists of a demonstrative, an adjective and a noun, and the second one of only a demonstrative.

(8) deze witte huizen en die
these white houses and those
'these white houses and those white houses' (Dutch)

In Figure 6.11, I schematically show the first and second conjunct of (8).

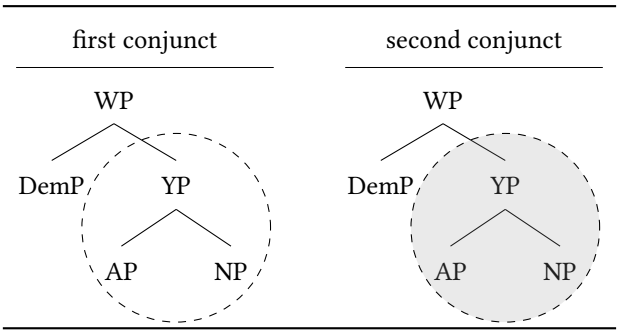


Figure 6.11: Nominal ellipsis in Dutch

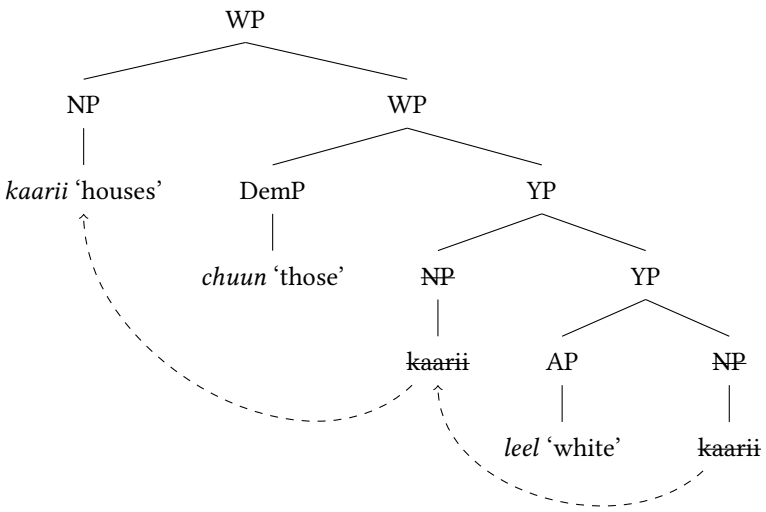
The YP in the second conjunct is the constituent that is deleted. I draw a dashed circle around it, and I mark the content gray. This YP contains the adjective and the noun. The interpretation of the YP in the second conjunct can be recovered, because the YP in the first conjunct serves as the antecedent. What is crucial here is that the deleted material forms a single constituent, and that is why it can be recovered.

The situation is different in Kipsigis, a Nilotic Kalenjin language spoken in Kenya. In (9), I give an example of a conjunction of two noun phrases in Kipsigis. The first conjunct consists of a noun, a demonstrative and an adjective, and the second one only of a demonstrative.

(9) kaarii-chuun leel-ach ak chu
houses-those white-PL and these
'those white houses and these houses'
not: 'those white houses and these white houses' (Kipsigis, Cinque 2020: 24)

The order of the noun, the demonstrative and the adjective indicates that the NP must have moved (probably cyclically via YP) to the specifier of WP. I show this in (10).

(10)



In Figure 6.12, I schematically show the first and second conjunct of (9).

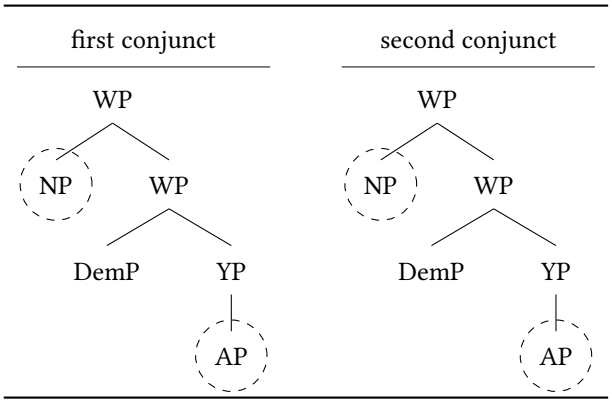


Figure 6.12: Nominal ellipsis in Kipsigis

Different from the Dutch example, the adjective and the noun that are deleted in the second conjunct of (9) do not form a constituent. I draw a dashed circle around the deleted elements and their antecedents in Figure 6.12. Since the adjective and the noun in Figure 6.12 do not form a single constituent together, they cannot be interpreted in the second conjunct of (9). Instead, only the noun can be recovered.

This observation regarding NP ellipsis provides independent support for my assumption that structural constituent containment is the crucial requirement for deletion of the light head or the relative pronoun in headless relatives.

Coming back to the matching type of language, I do not give an example in which the light head bears a more complex case than the relative pronoun. The reasoning here is the same as for the internal-only type: both the light head and the relative pronoun contain a feature that the other element does not contain (F2 or REL). Since

the weaker requirement of feature containment is not met, the stronger requirement of structural constituent containment cannot be met either. As none of the elements contains the other one, none of them is deleted, and there is no grammatical headless relative possible.

The comparisons between the light head and the relative pronoun in different cases correctly derive the observed patterns in the matching type of language. An overview of the patterns is shown in Table 6.3.

Table 6.3: Grammaticality in the matching type

situation	lexical entries		containment	deleted	surfacing
	LH	RP			
$K_{INT} = K_{EXT}$	$[K_1]$, $[\phi]$	$[REL]$, $[K_1]$, $[\phi]$	structure	LH	RP_{INT}
$K_{INT} > K_{EXT}$	$[K_1]$, $[\phi]$	$[REL]$, $[K_2[K_1]]$, $[\phi]$	no	none	*
$K_{INT} < K_{EXT}$	$[K_2[K_1]]$, $[\phi]$	$[REL]$, $[K_1]$, $[\phi]$	no	none	*

Languages of the matching type have a lexical entry that spells out phi features, a lexical entry that spells out case features and a lexical entry that spells out the feature REL. Headless relatives in this type of language are only grammatical when the internal and the external case match. In this situation, the light head is a constituent that is structurally contained within the relative pronoun, the light head is deleted, and the relative pronoun is the surface pronoun. When one of the cases is more complex than the other one, there is no longer a grammatical outcome possible. This follows from the fact that in the matching type of language ϕP and KP are both spelled out by their own lexical entry, which means that they both form separate constituents. As a result, the light head no longer is a constituent that is structurally contained within the relative pronoun, and none of the elements is deleted.

6.2.3 The unrestricted type

I end with the unrestricted type of language. I suggest that the light head and the relative pronoun in this type of language have the internal syntax as shown Figure 6.13.

This is a consequence of the following lexical entries, which are exactly the same as they are in the internal-only type of language. The light head is spelled out by a single lexical entry, indicated by the circle around the KP. This lexical entry is a portmanteau of a phi and case features. The relative pronoun is spelled out by two lexical entries, indicated by the circles around the KP and the RELP. The phi and case features of the relative pronoun are spelled out by the same portmanteau as the light

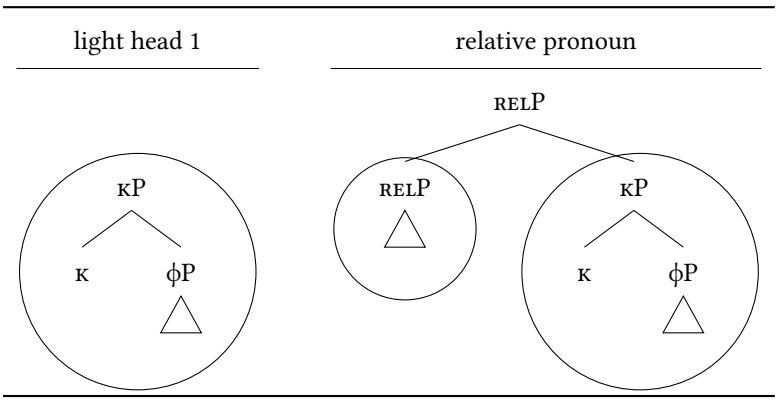


Figure 6.13: LH-1 and RP in the unrestricted type

head is. The RELP is spelled out by a separate lexical entry. Chapter 9 motivates this analysis for the unrestricted type of language Old High German.

Because the internal syntax of the light head and the relative pronoun is the same as in the internal-only type of language, the outcomes of the comparison between them in different cases are also the same as in the internal-only type of language. This means that when the internal case and the external case match or when the internal case is more complex than the external case, the light head is a constituent that is structurally contained within the relative pronoun, and the light head is deleted, as shown in Figure 6.4 and Figure 6.5. This is the pattern that is observed in the unrestricted type of language.

Crucially, the unrestricted type of language differs from the internal-only type of language when the external case is more complex than the internal case. The structures given in Figure 6.13 cannot lead to a grammatical headless relative, shown in Figure 6.6.

I zoom in on the situation in which the external case is more complex. At first sight, it is unexpected that the light head bearing the external case surfaces to begin with. Recall that the feature content of light head is that of the relative pronoun minus the feature REL. So far, I proposed that the light head can be deleted when all of its features structurally form a constituent within the relative pronoun. This is impossible the other way around: all features of the relative pronoun can never structurally form a constituent in the light head, because the relative pronoun contains the feature REL that the light head does not. It seems that there is one case that defies this rule: syncretism. In what follows I show a situation similar to the missing REL feature: a syncretism between nominative and accusative case in Modern German. This situation leads me to propose a second type of constituent containment: formal constituent containment.

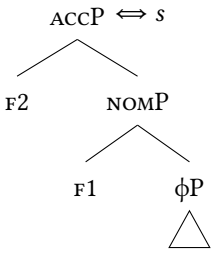
Consider the example in (11), in which the internal nominative case competes

against the external accusative case. The relative clause is marked in bold. The internal case is nominative, as the predicate *gefällen* 'to please' takes nominative subjects. The external case is accusative, as the predicate *erzählen* 'to tell' takes accusative objects. The relative pronoun *was* 'REL.INAN.NOM/ACC' is syncretic between the nominative and the accusative.

(11) Ich erzähle **was immer mir**
1SG.NOM tell.PRES.1SG$_{[ACC]}$ RP.INAN.NOM/ACC ever 1SG.DAT
gefällt.
pleases.PRES.3SG$_{[NOM]}$
'I tell whatever pleases me.'
(Modern German, adapted from Vogel 2001: 344)

Remember from Chapter 4 that Modern German is an internal-only type of language. This means that it allows the internal case to surface when it wins the case competition, but it does not allow the external case to do so. Solely looking at the cases in the example, it is expected that the example is ungrammatical: the internal nominative case cannot win over the external accusative case, and the external case is not allowed to surface. However, the example in (11) is grammatical, because there is a syncretism between the nominative and the accusative in the inanimate gender.

This leads me to distinguish a second type of constituent containment: formal constituent containment. This type of containment holds when there is a constituent that is formally (i.e. with its phonological form) contained within a given element. Technically, it works as follows. The fact that there is a syncretism between the nominative and the accusative means that there is a lexical entry for the ACCP which contains the feature F2 and the NOMP, but not a more specific one that spells out only the NOMP. In (12), I give such a lexical entry, which spells out as *s*.

(12)


In Figure 6.14, I give the example in which the light head bears a more complex case than the relative pronoun and there is a syncretism between the nominative and the accusative case.

The ACCP in the light head corresponds to *s*, illustrated by the circle around the

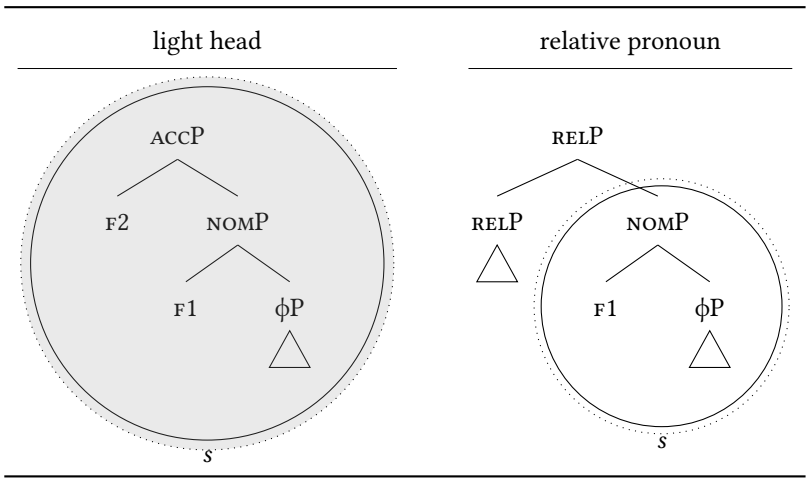


Figure 6.14: EXT_{ACC} vs. INT_{NOM} with case syncretism

ACCP and the *s* below it. The NOMP in the relative pronoun corresponds to *s* too, illustrated in the same way. I draw a dotted circle around each constituent that is a constituent in both the light head and the relative pronoun. The light head (the ACCP realized by *s*) is a constituent that is formally contained within the relative pronoun (the NOMP realized by *s*), so the light head is deleted. I illustrate this by marking the content of the dotted circle for the light head gray. As the light head is deleted, the headless relative surfaces with the relative pronoun that bears the internal case.

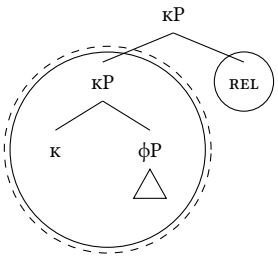
In sum, a more complex case can be deleted when it is syncretic with the less complex case, even though the more complex case contains a case feature more. If that is the case, then a relative pronoun can also be deleted when it is syncretic with the light head, even though the relative pronoun contains at least one feature more.

With this in mind, consider..[7]

This type of language has two possible light heads, which are part of the deriva-

[7] Another option to get a relative pronoun deleted is to let the relative features form a separate constituent which is not deleted.

(i)



In this chapter and in Chapter 9 (in which I work out the proposal for Old High German) I only discuss the situation in which the relative pronoun as a whole is a constituent that is structurally contained within the light head, and the relative pronoun is deleted.

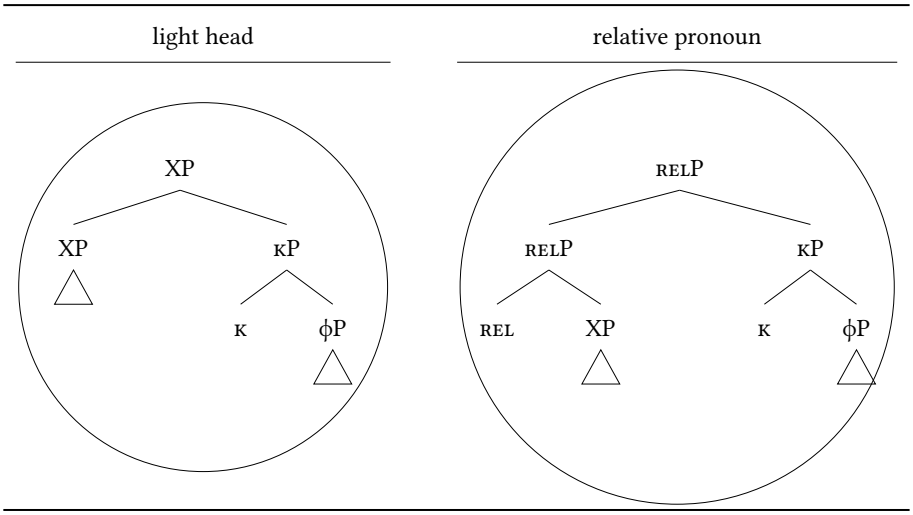


Figure 6.15: LH-2 and RP in the unrestricted type

tion under different circumstances. Therefore, I propose that in this situation the light head needs to be a different one. Before I give the second possible light head in the unrestricted type of language,

consider the second possible light head and the relative pronoun I suggest for the unrestricted type of language. I show them in Figure 6.16.

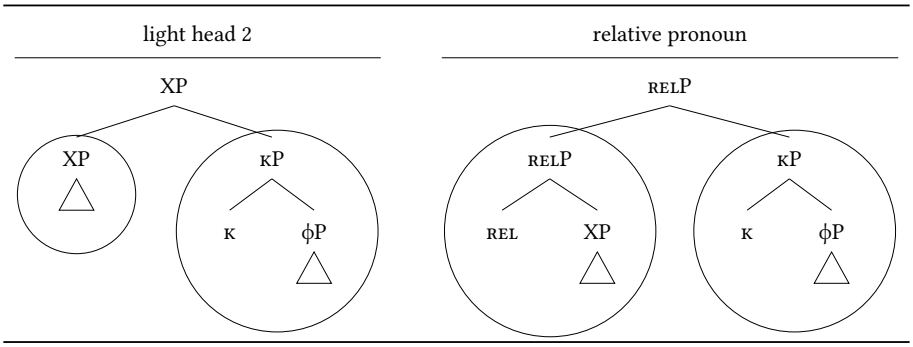


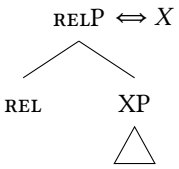
Figure 6.16: LH-2 and RP in the unrestricted type

This is a consequence of the following lexical entries. I propose that this light head does not only consist of phi and case features, but that it also contains a feature I here refer to as X. In Chapter 9 I motivate this claim and I discuss the content of this feature. The light head is spelled out by two lexical entries. The feature X is spelled out by its own lexical entry, indicated by the circle around the XP. The rest of the light head is spelled out by the portmanteau of phi and case features.

The relative pronoun always consists of all features the light head consists of.

Therefore, it consists of phi and case features, the feature REL and the feature X.[8] The phi and case features are spelled out by the same portmanteau as in the light head. The feature REL and the feature X are spelled out by a single lexical entry. It is crucial for the analysis that there is a lexical entry for the RELP which contains the feature REL and the XP, but not a more specific one that spells out the XP on its own. In (13), I give the lexical entry, which spells out as *X*.

(13)



Chapter 9 motivates this analysis for the unrestricted type of language Old High German. It also shows that the two other languages types, discussed as Modern German and Polish, do not have a syncretism as described in (13), so the introduction of a second possible light head would not aid them.

I now return to the problem at hand, being that in the unrestricted type of language a relative pronoun can be deleted. In Figure 6.17, I give an example in which this can happen. It contains the second possible light head and the relative pronoun, which both elements bear the same case.

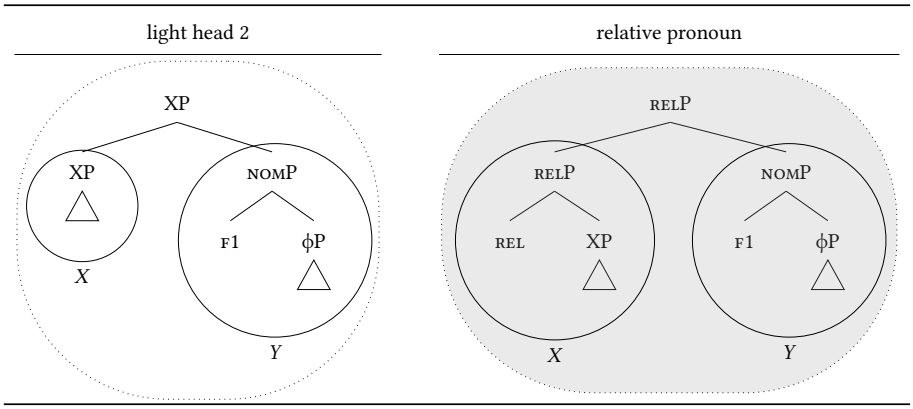


Figure 6.17: EXT_{NOM} vs. INT_{NOM} in the unrestricted type

The light head corresponds to *XY*, illustrated by the circle around the XP and the *X* below it and the circle around the NOMP and the *Y* below it. The relative pronoun corresponds to *XY* too, illustrated by the circle around the RELP and the *X* below it and the circle around the NOMP and the *Y* below it. I draw a dotted circle around each

[8] I actually assume that the relative pronoun that is being compared to the first possible light head also contains the feature X. I left it out of the structures there because it was not relevant for the discussion.

constituent that is a constituent in both the light head and the relative pronoun. The relative pronoun (the RELP realized by *XY*) is a constituent that is formally contained within the light head (the XP realized by *XY*), so the relative pronoun is deleted.[9] I illustrate this by marking the content of the dotted circle for the relative pronoun gray.

Finally arriving at the situation in which the external case is more complex than the internal case, I show that the analysis of Figure 6.17 cannot simply be extended to this situation. In Figure 6.18 I give an example of the second possible light head and the relative pronoun, in which the light head bears the more complex case.

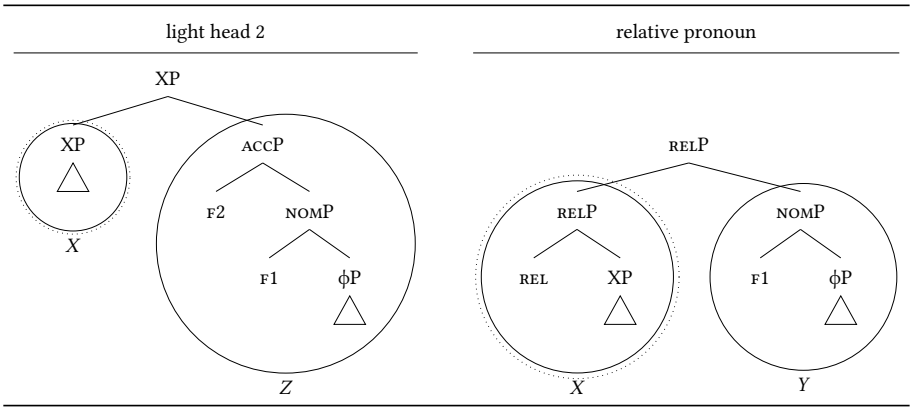


Figure 6.18: EXT_{ACC} vs. INT_{NOM} in the unrestricted type

The light head corresponds to *XZ*, illustrated by the circle around the XP and the *X* below it and the circle around the ACCP and the *Z* below it. The relative pronoun corresponds to *XY*, illustrated by the circle around the RELP and the *X* below it and the circle around the NOMP and the *Y* below it. I draw a dotted circle around each constituent that is a constituent in both the light head and the relative pronoun. The relative pronoun is no longer a constituent that is formally contained within the light head. Therefore, the relative pronoun cannot be deleted, which I illustrate by leaving the content of both dotted circles unfilled. As none of the items is deleted, it is expected that there is no grammatical headless relative possible.

However, this is not what is observed in the unrestricted type of language. For this type of language I need to make an assumption explicit that concerns the larger syntactic structure of headless relatives. I assume that the relative clause is built first, which includes the relative pronoun that bears its case. At a later stage in the derivation, the light head is built. The last features of the light head that are merged

[9]The same holds the other way around: the light head (the XP realized by *XY*) is a constituent that is formally contained within the relative pronoun (the RELP realized by *XY*). Therefore, either the light head or the relative pronoun can be deleted. I delete the relative pronoun here, as I discuss how it is possible for the relative pronoun to be deleted even though it has a feature less than the light head.

are the case features. This means that there is a stage in the derivation in which the light head bears the nominative case (as in Figure 6.17). At that point, the relative pronoun is deleted. The light head remains as the surface pronoun. Subsequently the feature F2 is merged to the light head to make it a AccP.

This type of derivation is not possible in the situation in which the internal case is more complex than the external case. In that situation, there is namely no stage in the derivation in which the case of the relative pronoun and the case of the light head match. The relative pronoun is namely built before the light head, and even at the end of the derivation the light head does not have the more complex case that the relative pronoun has. In Chapter 9 I discuss these derivations in more detail.

Crucially, this deletion option is only successful for languages of the unrestricted type but not for languages of the internal-only or the matching type. This is derived from the fact that the unrestricted type of language has a light head available that is syncretic with the relative pronoun. This is not the case in the internal-only and the matching type of language. I elaborate on this in Chapter 9.

Table 6.4 shows the comparisons between the constituents within the first light head and the relative pronoun. The patterns are derived correctly for the situation in which cases match and the situation in which internal case is more complex than the external case.

Table 6.4: Grammaticality in the unrestricted type with LH-1

situation	lexical entries		containment	deleted	surfacing
	LH	RP			
$K_{INT} = K_{EXT}$	$[K_1[\phi]]$	[REL], $[K_1[\phi]]$	structure	LH	RP_{INT}
$K_{INT} > K_{EXT}$	$[K_1[\phi]]$	[REL], $[K_2[K_1[\phi]]]$	structure	LH	RP_{INT}
$K_{INT} < K_{EXT}$	[REL], $[K_1[\phi]]$	$[K_2[K_1[\phi]]]$	no	none	*

Focusing on the first possible light head, languages of the unrestricted type have a lexical entry that spells out phi and case features and a lexical entry that spells out the feature REL. Headless relatives in this language are grammatical in all situations: when the internal and the external case match, when the internal case is more complex and when the external case is more complex. The first possible light head only derives the correct result for the first two situations and not for the last one. In the first two situations, the light head is a constituent that is structurally contained within the relative pronoun, the light head is deleted, and the relative pronoun is the surface pronoun. In the last situation, the light head no longer is a constituent that is structurally contained within the relative pronoun, and none of the elements is deleted.

Table 6.5 shows the comparisons between the constituents within the second light head and the relative pronoun. The patterns are derived correctly for the situation in which cases match and the situation in which external case is more complex than the internal case.

Table 6.5: Grammaticality in the unrestricted type with LH-2

situation	lexical entries		containment	deleted	surfacing
	LH-2	RP			
$K_{INT} = K_{EXT}$	/X/, /Y/	/X/, /Y/	form	RP	LH_{EXT}
$K_{INT} > K_{EXT}$	/X/, /Y/	/X/, /Z/	no	none	*
$K_{INT} < K_{EXT}$	/X/, /Y/	/X/, /Y/	form	RP	LH_{EXT}

Focusing on the second possible light head, languages of the unrestricted type have a lexical entry that spells out phi and case features and a lexical entry that spells out the features X and REL and crucially not a lexical entry that only spells out the feature X. Headless relatives in this language are grammatical in all situations: when the internal and the external case match, when the internal case is more complex and when the external case is more complex. The second possible light head only derives the correct result for the first and the last situation but not for the second one. In the first and last situation, the relative pronoun is (at some point of the derivation) a constituent that is formally contained within the light head, the relative pronoun is deleted, and the light head is the surface pronoun. In the second situation, the relative pronoun is at no point in the derivation a constituent that is formally contained within the light head, and none of the elements is deleted.

6.3 Summary

In summing up this chapter, I return to the metaphor with the committee that I introduced in Chapter 4. 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 containment. A more complex case corresponds to a constituent that contains the constituent of a less complex case.

Subsequently, I noted that there is a committee that can either approve the winning case or not approve it. In Chapter 4 I wrote that the approval happens based on where the winning case comes from: from inside of the relative clause (internal) or from outside of the relative clause (external). I argued in this chapter that headless relatives are derived from light-headed relatives. The light head bears that external

case and the relative pronoun bears the internal case. The 'approval' of an internal or external case relies on the same mechanism as case competition, namely constituent containment. If the light head is a constituent that is (structurally) contained within the relative pronoun, the light head can be deleted. Then the light head with its external case is absent, and the relative pronoun with its internal case surfaces. This is what corresponds to the the internal case 'being allowed to surface'. If the relative pronoun is a constituent that is (formally) contained within the light head, the relative pronoun can be deleted. Then the relative pronoun with its internal case is absent, and the light head with its external case surfaces. This is what corresponds to the the external case 'being allowed to surface'.

In other words, the grammaticality of a headless relative depends on constituent containment. The constituents that are compared are those of the light head and the relative pronoun, which both 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' does not differ within a language.

The source of variation between languages is the different lexical entries that languages have. The parameters introduced in Chapter 4 and repeated in the introduction of the chapter can be reformulated as in Figure 6.19.

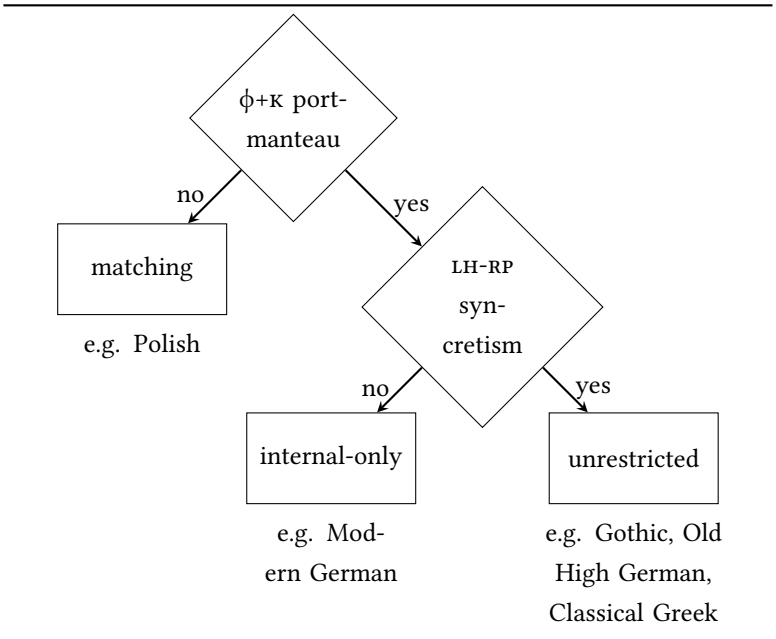


Figure 6.19: Different lexical entries generate three language types

The first parameter distinguishes the matching type of language from the internal-only and the unrestricted type of languages. The internal-only and unrestricted type of languages have a portmanteau that spells out these two features. The matching type of language does not have that, but it has two separate lexical entries for the phi and case features. The second parameter distinguishes the internal-only type of language from the unrestricted type of language. The unrestricted type of language has a light head that is syncretic with the relative pronoun. The internal-only type of language does not have such a syncretism.

This system excludes the external-only type. An external-only type would be a language type in which the relative pronoun can be deleted, but the light head cannot be deleted. In my proposal, an element can be deleted if it is a constituent that is structurally or formally contained within the other element. First consider only structural constituent containment, leaving formal constituent containment aside for now. The relative pronoun contains at least one feature more than the light head: the feature REL. The relative pronoun can not be deleted, because it is not a constituent that is structurally contained within the light head. In other words, a relative pronoun can never be deleted using structural constituent containment. This is also the point that I made before I introduced formal constituent containment in Section 6.2.3.

Now consider also formal constituent containment. Remember that an external-only type of language is a language in which the relative pronoun can be deleted, but the light head cannot be deleted. In TOBEMADE I showed a situation in which the light head is syncretic with the relative pronoun.

make figure here

Then, the relative pronoun is a constituent that is formally contained within the light head, and the relative pronoun can be deleted. Note here that the internal and external case need to be identical too. Only then the two forms are fully syncretic, and deletion can take place. As I explained at the of Section 6.2.3, this is a situation that appears when the internal and external cases match, but also when the external case is more complex. In a derivation with a more complex external case, there is namely always a stage in which the internal and external case match: the external case features are namely the last ones to be merged. When the internal case is more complex, the light head cannot be deleted by formal constituent containment. There is namely no stage in the derivation in which the internal and external case match and the light head and the relative pronoun are fully syncretic. However, consider Figure TOBEMADE again. Although the light head cannot be deleted by formal constituent containment, it can be deleted by structural constituent containment. The light head is namely still a constituent that is formally contained within the relative pronoun.[10]

[10]This reasoning holds for monomorphemic light heads and relative pronouns. I discuss the possibility of an external-only type of language with bimorphemic light head and relative pronouns in Chapter 9.

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 across languages. 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. I Chapter 9, I briefly discuss some general assumptions I am making regarding the larger syntactic structure to explain how an external case can win the case competition, which for the other language types too.

To conclude, in this chapter 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 is a constituent that is structurally or formally contained within 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.

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Tatian Tatian

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