

# CASE COMPETITION IN HEADLESS RELATIVES

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vorgelegt von

Fenna Bergsma

aus

Boarnsterhim, Niederlande

202..



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thanks

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# List of abbreviations

<b>ACC</b>	accusative
<b>AN</b>	animate
<b>DAT</b>	dative
<b>ELH</b>	extra light head
<b>F</b>	feminine
<b>NOM</b>	nominative
<b>PL</b>	plural
<b>REL</b>	relative





## **Part I**

# **Case competition**





## **Part II**

# **The typology**



## **Part III**

# **Deriving the typology**



It could also be that the vowel differs between the animate and the inanimate WH-elements. In *kogo*, the *o* is actually an *o*, and the *k* is actually a *k*. In *czego*, the *e* is also actually an *e*, and it causes the *k* to change into *cz* (Swan 2002: 24). The question that arises then is why there is no change in the vowel in demonstratives.

Let us zoom in on the difference between WH-pronouns and demonstratives regarding the concept of gender. Demonstratives get their gender from the (possibly phonologically empty) head noun, and the gender is syntactic (i.e. it depends on the grammatical gender of the head noun). WH-pronouns (at least the ones in Table 8.5) do not combine with a noun, so they get their gender from themselves, and their gender is semantic. Possibly, syntactic masculine gender contains one feature less than semantic animate gender: MASC vs. MASC + AN. If the inanimate lacks both of these features, it can pattern with the masculine demonstrative to the exclusion of the animate relative pronoun.

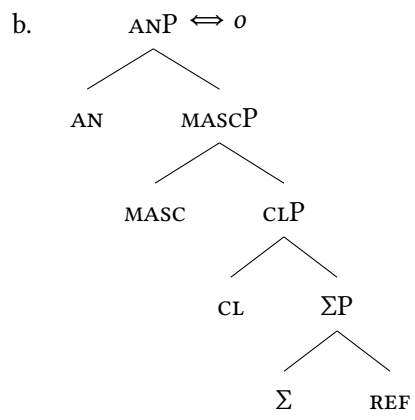
In other words, so far I have been saying that

- (59) a. masculine = animate =  
b. neuter = inanimate

- (60) a. animate =  
b. neuter = inanimate

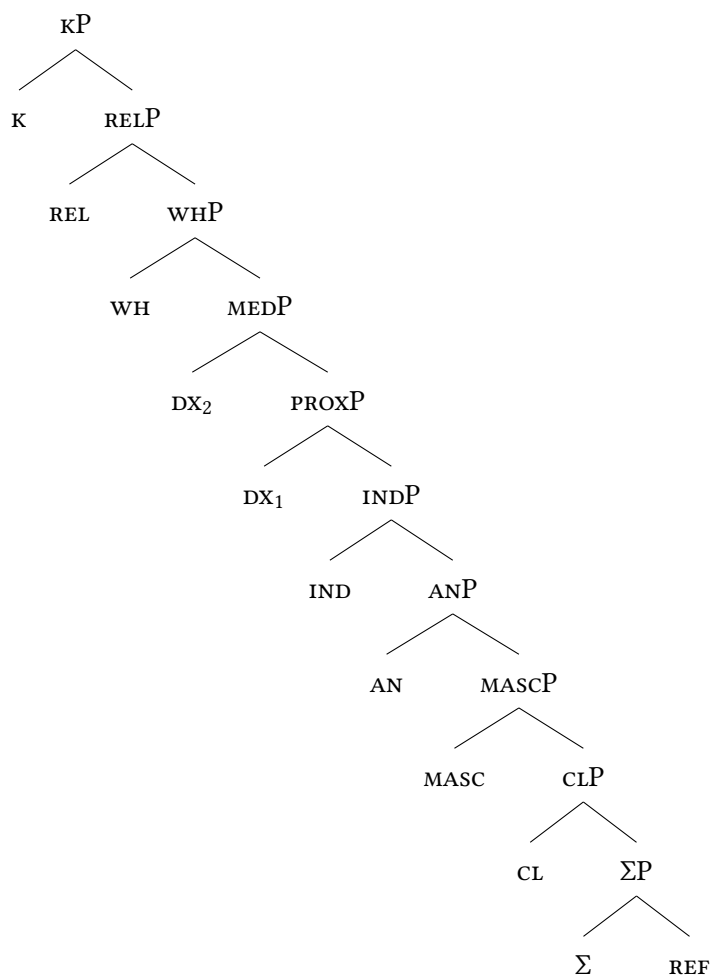
- (61) a.
- 
- ```

graph TD
    A["MASC P ↔ e"] --- B["MASC"]
    A --- C["CL P"]
    C --- D["CL"]
    C --- E["Σ P"]
    E --- F["Σ"]
    E --- G["REF"]
  
```



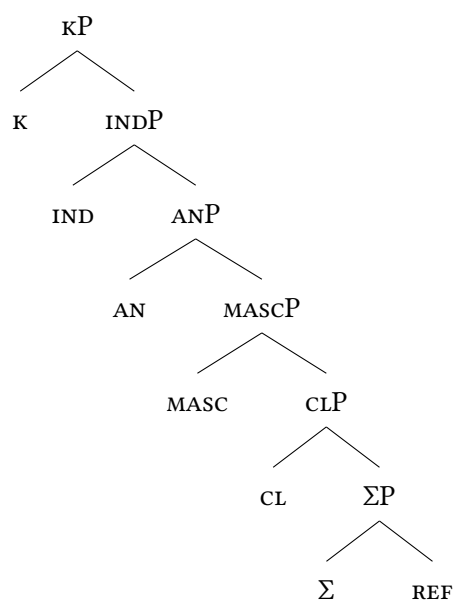
## 7.5 fseqs

(62) relative pronoun

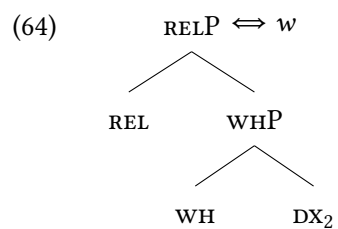


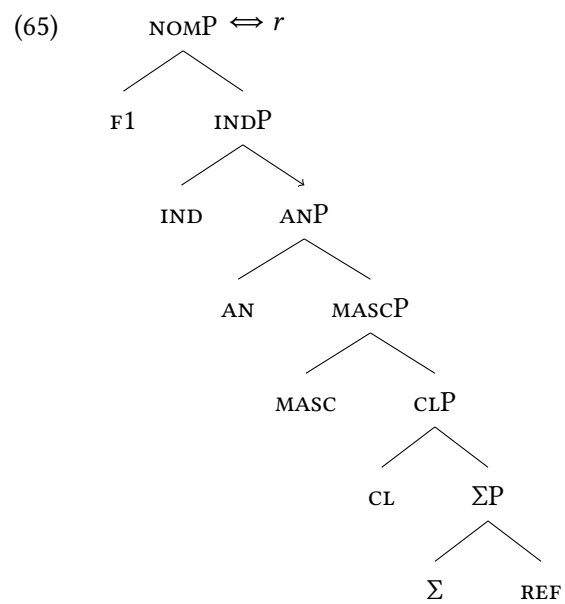
(63) light head



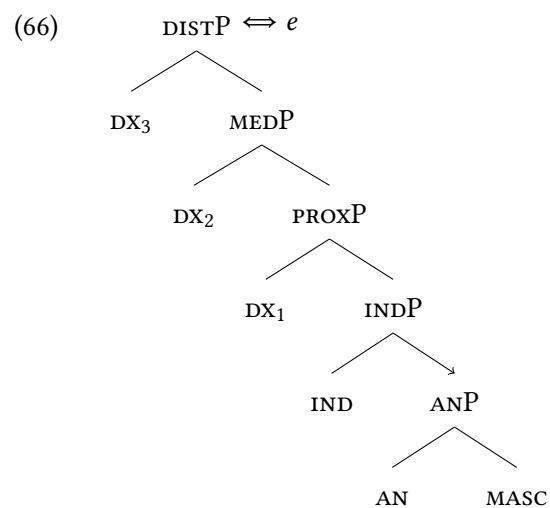


## 7.6 Modern German





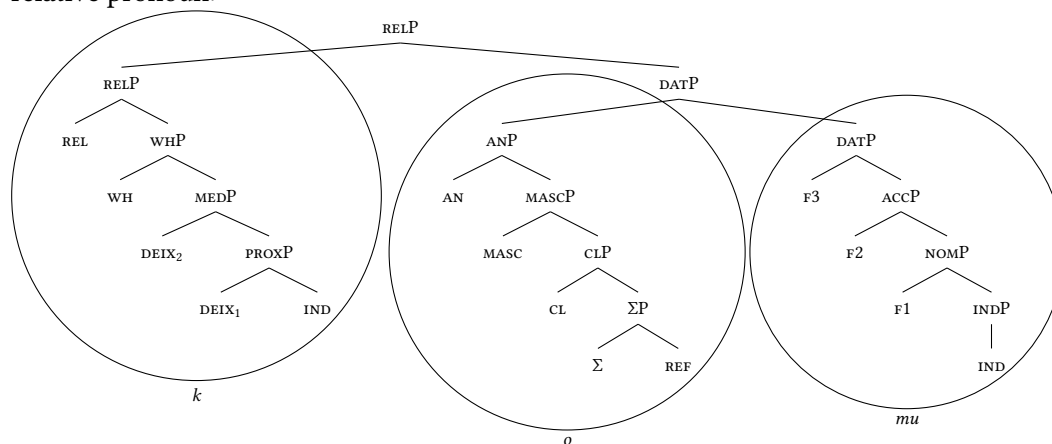
I can



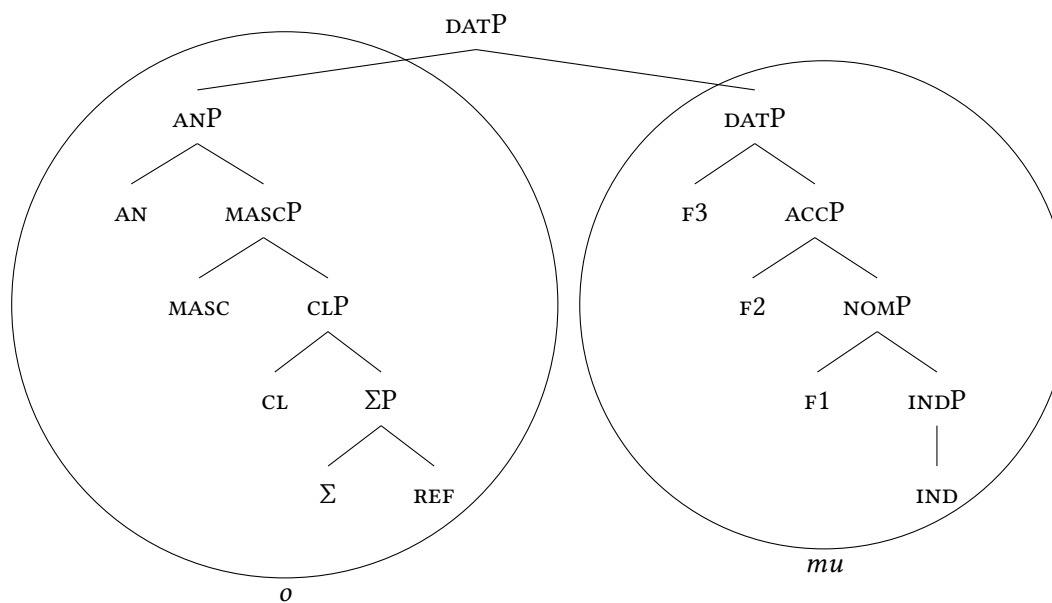
## 7.7 Polish

- (67)
- a.  $e = \text{REF}, \Sigma, \text{CLASS}, \text{MASC}$
  - b.  $o = \text{REF}, \Sigma, \text{CLASS}, \text{MASC}, \text{ANIM}$

(68) relative pronoun:

that means that the extra light head is not the *je*-pronoun

(69) extra light head:





## Chapter 8

# Deriving the matching type

Matching languages can be summarized as in Table 8.1.

Table 8.1: The surface pronoun with differing cases in Polish

|          | $K_{INT} > K_{EXT}$ | $K_{EXT} > K_{INT}$ |        |
|----------|---------------------|---------------------|--------|
| matching | *                   | *                   | Polish |

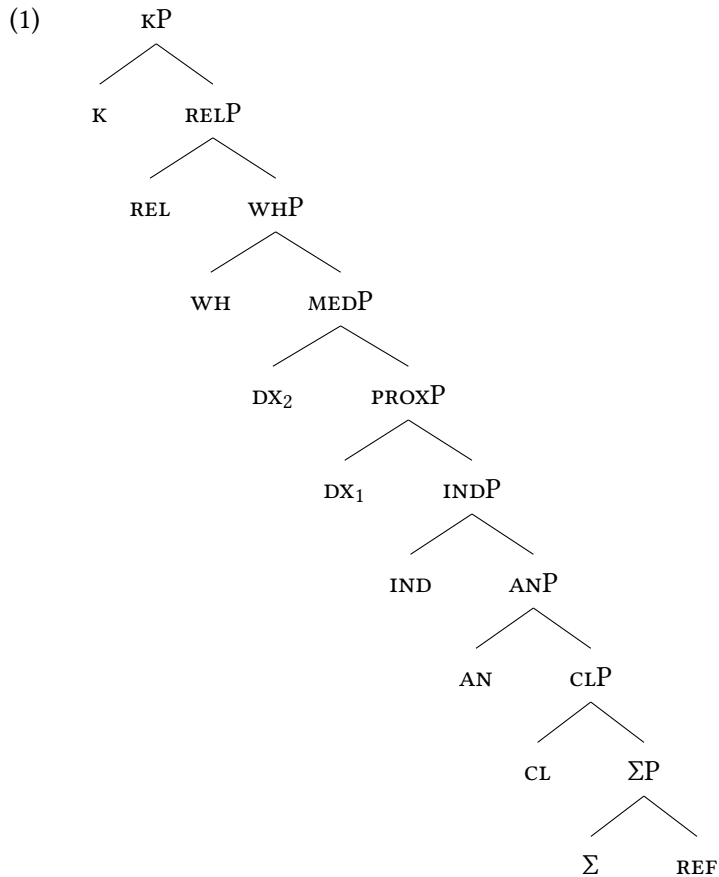
A language of the matching type (like Polish) allows neither the internal nor the external case to surface when either of them wins the case competition. Only when the internal and external case match, there is a grammatical outcome. This means that neither the relative pronoun with a more complex internal case nor the light head with a more complex external case can be the surface pronoun. The goal of this section is to derive these properties from the way light heads and relative pronouns are spelled out in Polish.

The section is structured as follows. First, I discuss the relative pronoun. I decompose the relative pronouns into three morphemes, and I show which features each morpheme corresponds to. Then I discuss the light head. I argue that Polish headless relatives are derived from a light-headed relative clause that do not surface in the language. I show that the features of the light head are spread over two morphemes. The fact that the light head has two morphemes is what ultimately leads Polish to be a matching type of language.

Finally, I compare the constituents of the light head and the relative pronoun. When the internal and the external case match, the relative pronoun can delete the light head, because the light head forms a single constituent within the relative pronoun. When the internal case is more complex than the external case, the light head is not a single constituent within the relative pronoun anymore. The relative pronoun contains all features of the light head, but they are spread over separate constituents. As a result, there is no grammatical form to surface when the internal case is more complex. When the external case is more complex than the internal case, the relative pronoun is not a single constituent within the light head. The relative pronoun contains features that are not part of the light head. As a result, there is no grammatical form to surface when the internal case is more complex.

## **8.1 The relative pronoun**

In this section I discuss the internal structure of relative pronoun in Polish headless relatives. In Section 7.1 I argued that Modern German relative pronouns consist of the features given in the functional sequence in (1).

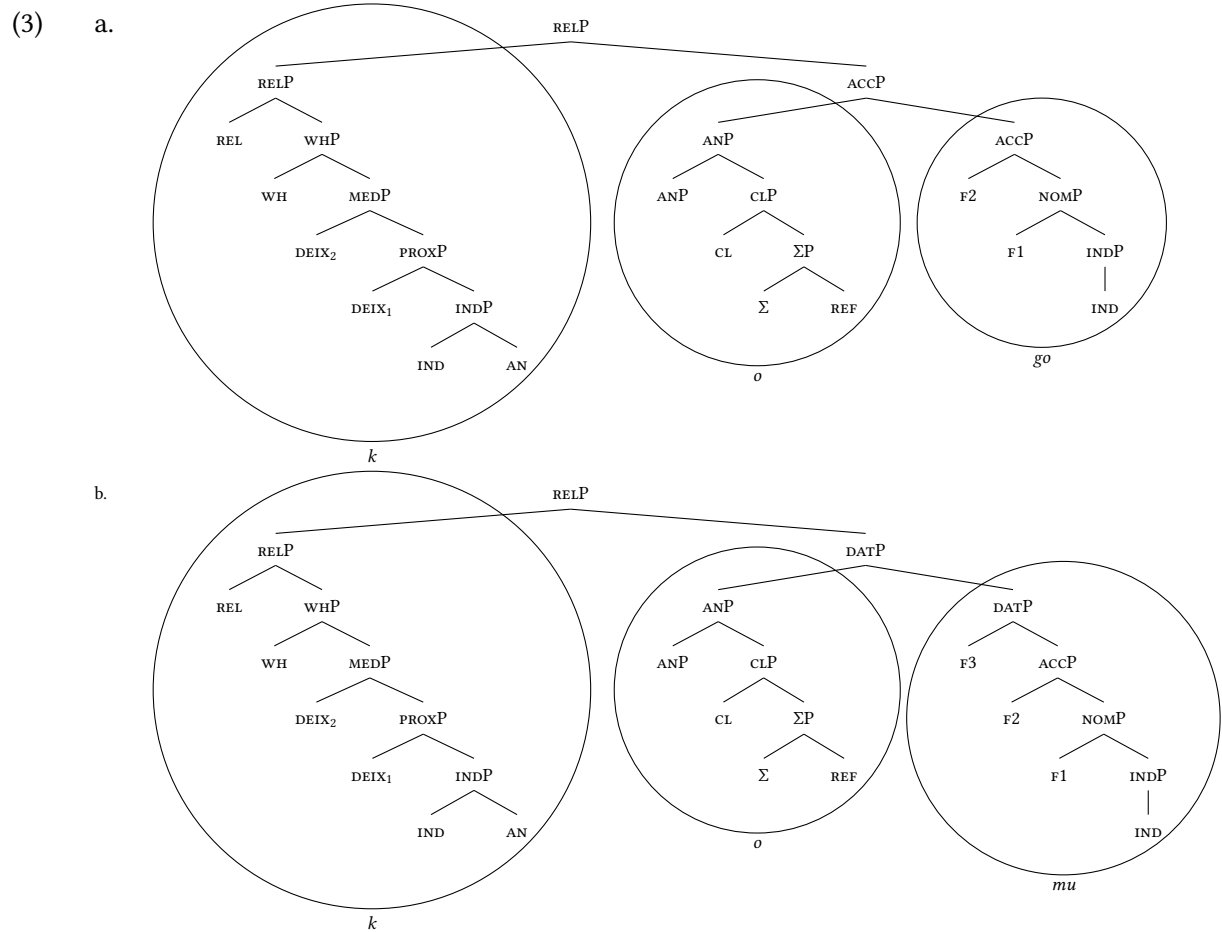


As I pointed out in Section ??, I propose that the difference between Modern German and Polish headless relatives comes from whether the relative pronoun can delete the light head. This depends on whether the light head forms a constituent within the relative pronoun. That, in turn, depends on which constituents are formed to spell out the relative pronoun and the light head. The difference in spellout is the only difference between Modern German and Polish: the features that are spelled out are the same ones, namely the ones in (1).

I discuss two relative pronouns: the animate accusative singular and the animate dative singular. These are the two forms that I compare the constituents of in Section 8.3. I show them in (2).

- (2) a. k-o-go  
           ‘REL.AN.SG.ACC’  
       b. k-o-mu  
           ‘REL.AN.SG.DAT’

I decompose the relative pronouns in three morphemes: the *k*, the *o* and the final suffix (*go* and *mu*). For each morpheme, I discuss which features they spell out, and I give their lexical entries. In the end, I derive the relative pronouns, of which I give the accusative here in (3) and the dative here in (25).



I start with the morphemes *go* and *mu*. Consider the masculine and neuter personal



pronouns in Table 8.2.<sup>1</sup>

Table 8.2: 3SG personal pronouns (Swan 2002: 156)

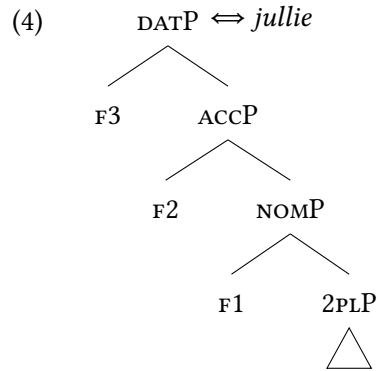
|     | M.SG  | N.SG  |
|-----|-------|-------|
| ACC | je-go | je    |
| GEN | je-go | je-go |
| DAT | je-mu | je-mu |

Notice that the morpheme *mu* does not only appear as the dative suffix in the masculine, but also in the neuter. The morpheme *go* appears as the accusative and genitive suffix in the masculine and as the genitive suffix in the neuter.<sup>2</sup> Moreover, the complete pronouns are syncretic: in all cases, the suffix combines with the morpheme *je*. I set up a system that can derive the syncretism between the two genders. Doing this allows me to establish which features the morphemes *go* and *mu* spell out.

I discussed in Chapter 3 that syncretisms can be derived in Nanosyntax via the Superset Principle. The lexicon contains a lexical entry that is specified for the form that corresponds to the most features. To illustrate this, I repeat the lexical entry for the Dutch *jullie* ‘you’ in (4).

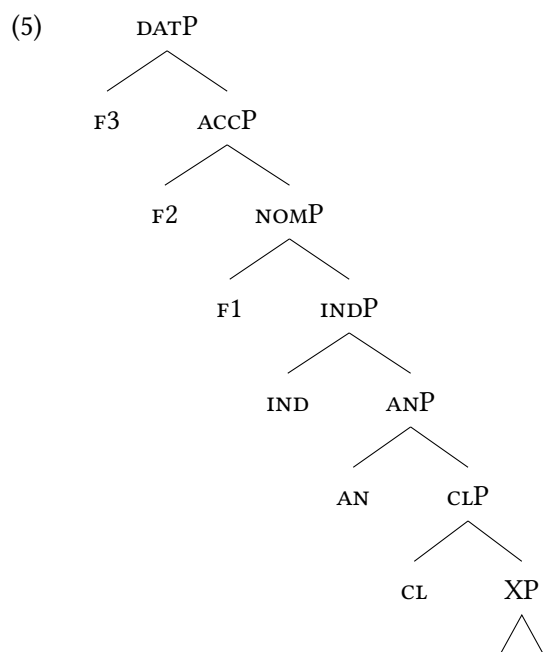
<sup>1</sup>Polish has three types of third person pronouns (Swan 2002: 156-157). Not all types of pronouns exist for all numbers and genders, but they do for the masculine accusative and dative singular. *Je*-pronouns are used in clause-initial position or when emphasis or a contrast is expressed. *Ni*-pronouns are used after prepositions. Clitics are used in non-stressed contexts. According to Franks, these clitics are not ‘real’ clitics, since they syntactically behave like phrases. The deficiency is only just prosodic (Franks, Junghanns, and Law 2004: 22).

<sup>2</sup>I include genitive in the paradigms to show that the patterns observed in the dative are not standing on themselves. Instead, they are more generally attested in Polish, and they deserve an explanation. However, I do not incorporate them in the syntactic structures. The reason for that is that the genitive in Polish is comes between the accusative and the dative, i.e. it is more complex than the accusative and less complex than the dative. This does not change anything about the main point about case I want to make: the dative is more complex than the accusative.

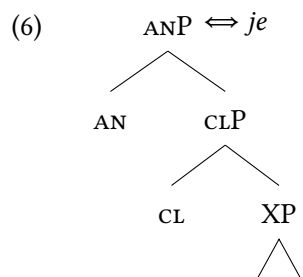


*Jullie* is syncretic between nominative, accusative and dative. It is specified for dative in the lexicon, because the dative contains the accusative and the nominative. The nominative and accusative second person plural in Dutch are spelled out as *jullie* as well, because the DATP contains the ACCP which contains NOMP (Superset Principle), and there is no more specific lexical entry available in Dutch (Elsewhere Condition). It is important that the potentially unused features (so the F3 or F3 and the F2) are at the top, so that the constituent that needs to be spelled out is still contained in the lexical tree.

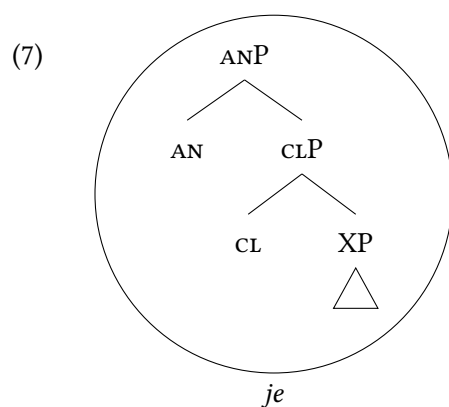
I show how I get this syncretism for *jemu*. Different from *jullie*, *jemu* consists of two morphemes: *je* and *mu*. I give the functional sequence that I assume *jemu* spells out. These are case features up to the dative, the feature IND for singular number, the gender features CL and AN and some XP for whatever other features *jemu* contains.



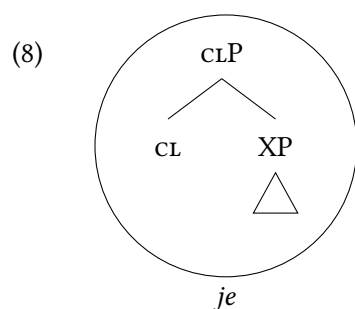
The morpheme *je* is syncretic between the masculine and neuter. That means that the highest feature in the lexical tree needs to be the feature AN. I give the lexical entry in (6).



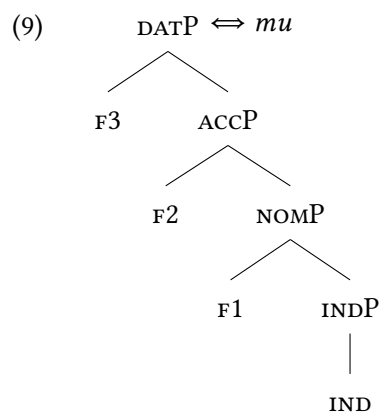
When the lexical entry for *je* is as in (6), it can be inserted if there is a animate or an inanimate syntactic structure. In (7) I give a syntactic structure of an animate. The syntactic structure forms a constituent within the lexical tree in (6), and the structure can be spelled out as *je*.



In (8) I give a syntactic structure of an animate. The syntactic structure also forms a constituent within the lexical tree in (6), and the structure can be spelled out as *je*.

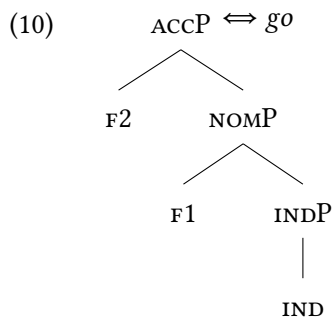


What follows from this is that the lexical trees for the suffix *mu* should contain all features in (5) that are not spelled out by *je* so far. These are the feature **IND** and all case features up to the dative. I give the lexical entry for *mu* in (9).



Notice here that *mu* has a unary bottom. Therefore, it can be inserted as the result of movement. That means that the lexical entry follows the existing structure and is spelled out as a suffix. This is how the correct order of *je* and *mu* comes about. I show how this works when I build the relative pronouns.

The morpheme *go* is not used in the accusative neuter, but it is in the genitive. What I take away from that is that the morpheme *go* needs to have IND as the lowest feature too, so that it can combine with the feature AN if that is present and with the feature CL if AN is absent. I give the lexical entry for *go* in (10).



I continue with the morpheme *o*. Before I discuss its feature content, it discuss its phonology. Compare the animate relative pronouns to the masculine demonstratives in Table 8.3.

Table 8.3: Polish relative pronouns and demonstratives (Swan 2002: 160,171)

|     | REL.AN | DEM.M |
|-----|--------|-------|
| NOM | kto    | t-en  |
| ACC | k-ogo  | t-ego |
| GEN | k-ogo  | t-ego |
| DAT | k-omu  | t-emu |

The *k* /k/ combines with the *o* /ɔ/, and the *t* /t/ combines with the *e* /ɛ/. I analyze this change as a phonological process, in which the vowel changes depending on the consonant. Specifically, I argue that the *o* /ɔ/ in the relative pronoun is underlyingly an *e* /ɛ/. The /ɛ/ becomes a /ɔ/ when it follows a /k/. I informally describe the

situation in (11).

$$(11) \quad \varepsilon \Leftrightarrow \text{ɔ } k\_$$

The description in (11) can be reformulated in more phonological terms. The consonant /t/ is coronal (i.e. front for consonants), and the vowel /ε/ is a front vowel. The consonant /k/ is dorsal (i.e. back for consonants), and the vowel /ɔ/ is a back vowel. The /ε/ changes into a /ɔ/ when it follows a dorsal consonant.

$$(12) \quad \varepsilon \Leftrightarrow \text{ɔ } [\text{DORS}]_-$$

The vowel /ε/ is attested in another paradigm, namely in the genitive and dative of the inanimate relative pronouns. I put them besides the animate relative pronouns in Table (2).

Table 8.4: Polish (in)animate relative pronouns (Swan 2002: 160)

|     | REL.AN | REL.N  |
|-----|--------|--------|
| NOM | kto    | c-o    |
| ACC | k-ogo  | c-o    |
| GEN | k-ogo  | cz-ego |
| DAT | k-omu  | cz-emu |

Here the /ε/ follows the /t͡s/. This is in line with my generalization that dorsal consonants cause the vowel change. /t͡s/ is a coronal consonant and not a dorsal, so it does not change. Note that there is an *o* /ɔ/ in the nominative and accusative. This is a different /ɔ/ than the one in the animate relative pronouns. It namely also spells out case features, which I argue later in this section the underlying /ε/ does not do. It namely also appears after the *t* in the neuter nominative and accusative singular demonstrative.<sup>3</sup>

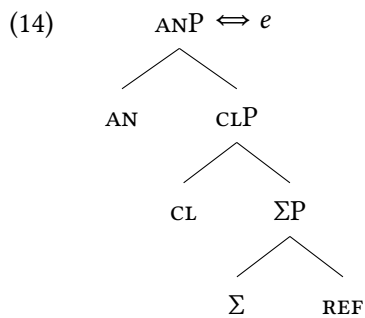
This brings me to the feature content of the *e*. I argue that this is the *je* from discussion on the morphemes *go* and *mu*. The presence of the *j* is phonology.

<sup>3</sup>I assume that the change from *c* to *cz* is I palatalization as a consequence of the combination of /t͡s/ and /ε/ (Swan 2002: 26).

*Je*-pronouns are weak pronouns. In (13) given an example in which *jego* ‘3SG.M.ACC’ appears sentence-initially.

- (13) *Jego jednego nie widzę.*  
 3SG.M.ACC alone not see.1SG  
 ‘Him, alone I don’t see.’ (Polish, Swan 2002: 157)

I conclude from this that *e/o* contains the features REF and  $\Sigma$ . I add to this the features CL and AN that I already assigned to *e* earlier in this section (then still referring to it as *je*), gives the lexical entry for *e* in (14).



This leaves the morpheme *k* of the relative pronoun. I argue that *k* spells out six features: WH, REL, DX<sub>1</sub>, DX<sub>2</sub>, AN and IND. I go through them one by one.

I start with the operator features *wh* and REL. Consider Table 8.5, repeated from Table 8.3.

Table 8.5: Polish relative pronouns and demonstratives (Swan 2002: 160,171) (repeated)

|     | REL.AN | DEM.M |
|-----|--------|-------|
| NOM | kto    | t-en  |
| ACC | k-ogo  | t-ego |
| GEN | k-ogo  | t-ego |
| DAT | k-omu  | t-emu |

The relative pronouns listed are WH-pronouns, and they are also used as interrogatives in Polish. Therefore, just like the Modern German *w*, the Polish *k* spells out the features WH and REL.

I continue with the deixis features. Consider Table 8.5 again. The *k* and the *t* combine with the same endings, which identifies both of them as a morpheme. Unlike Modern German, Polish demonstratives are not marked for definiteness. The demonstratives I gave in Table 8.5 are used as proximal and medial. I give an example in (15a). There is a separate marker for the distal, as shown in (15b).

- (15) a. to auto  
DEM.PROX/MED car.N.NOM
- b. tam-to auto  
DEM.DIST car.N.NOM

(Polish, Wiland 2019: 93)

The *t* in (15a) spells out deixis features:  $DX_1$  and  $DX_2$  features. As the *t* is not present in the relative pronoun (compare e.g. *temu* and *komu* in Table 8.5), I assume that *k* spells out the deixis features itself.

I end with the gender and number features. Consider Table 8.6, repeated From Table 8.4.

Table 8.6: Polish (in)animate relative pronouns (Swan 2002: 160)

|     | REL.AN | REL.N  |
|-----|--------|--------|
| NOM | kto    | c-o    |
| ACC | k-ogo  | c-o    |
| GEN | k-ogo  | cz-ego |
| DAT | k-omu  | cz-emu |

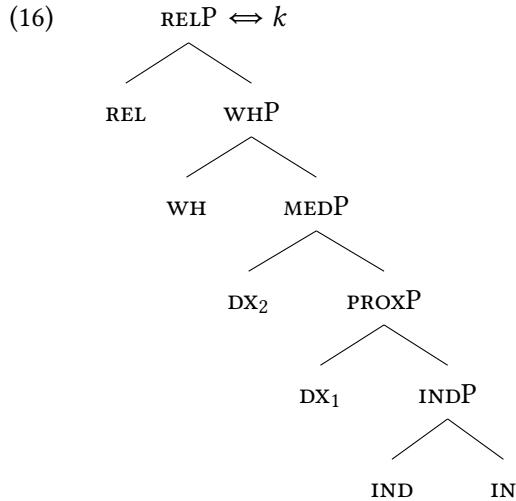
The first consonant alternates depending on gender: the animates start with a *k* and the inanimates start with a *c(z)*. I conclude from this that the *k* contains the feature AN.<sup>4</sup> Additionally, since the relative pronouns do not have a morphological

<sup>4</sup>It should be noted that numerous WH-elements in Polish start with a *k*. I give some examples in



plural, I assume that  $k$  contains the feature IND.

In sum, the morpheme  $k$  realizes the features WH, REL, DX<sub>1</sub>, DX<sub>2</sub>, AN and IND.



In what follows, I construct the Polish relative pronouns. I follow the same functional sequence as I did for Modern German. The outcome is different because of the different lexical entries Polish has.

---

(i).

- (i)
- a. k-tóry  
which
  - b. k-iedy  
when
  - c. g-dzie  
where

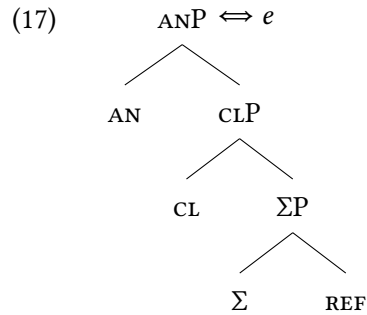
(Polish, Swan 2002: 180,183-184)

The  $k$  in (ic) gets voiced into  $g$  because it is followed by  $d$ .

The animate WH-pronouns seems to pattern with the other WH-pronouns to the exclusion of the inanimate one. I return to this point during the discussion of how the relative pronoun is built. I show how it can be captured that the same  $k$  is inserted in WH-pronouns used for animates, locations and references to time, and that inanimates receive a different spellout.

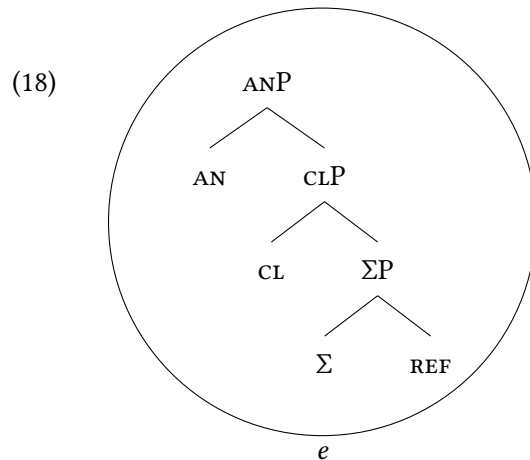
I also show how I model that the WH-pronouns alternate their vowel depending on animacy and that demonstratives do not.

Starting from the bottom, the first two features that are merged at  $\text{REF}$  and  $\Sigma$ , creating a  $\Sigma\text{P}$ . The syntactic structure forms a constituent in the lexical tree in (17), repeated from (14), which corresponds to the  $e$ .



Therefore, the  $\Sigma\text{P}$  is spelled out as  $e$ , which I do not show here.

The features  $\text{CL}$  and  $\text{AN}$  are merged and spelled out in the same way. First, the feature  $\text{CL}$  is merged, and a  $\text{CLP}$  is created. The syntactic structure forms a constituent in the lexical tree in (17). Therefore, the  $\text{CLP}$  is spelled out as  $e$ . Then, the feature  $\text{AN}$  is merged, and a  $\text{ANP}$  is created. The syntactic structure forms a constituent in the lexical tree in (17). Therefore, the  $\text{CLP}$  is spelled out as  $e$ , shown in (18).



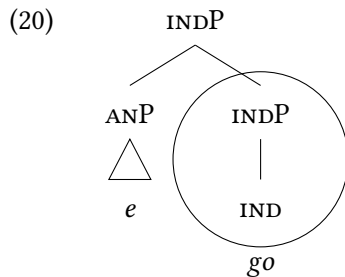
The next feature in the functional sequence is the feature  $\text{IND}$ . This feature can not be spelled out as the other ones before. The feature  $\text{IND}$  is merged, and a  $\text{INDP}$  is

created. This syntactic structure does not form a constituent in the lexical tree in (17). There is also no other lexical tree that contains the syntactic structure as a constituent. Therefore, there is no successful spellout for the syntactic structure in the derivational step in which the structure is spelled out as a single phrase ((19a) in the Spellout Algorithm, repeated from (19) in (19)).

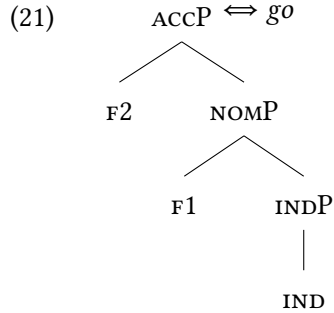
(19) **Spellout Algorithm** (as in Caha 2020, based on Starke 2018)

- a. Merge F and spell out.
- b. If (a) fails, move the Spec of the complement and spell out.
- c. If (b) fails, move the complement of F and spell out.

The first movement option in the Spellout Algorithm is moving the specifier, as described in (19b). As there is no specifier in this structure, so the first movement option irrelevant. The second movement option in the Spellout Algorithm is moving the complement, as described in (19c). In this case, the complement of *IND*, the *ANP*, is moved to the specifier of *INDP*. The result of this movement operation is shown in (20).



The *INDP* is a different constituent now. It still contains the feature *IND*, but it no longer contains the *ANP*. The syntactic structure forms a constituent in the lexical tree in (21). Therefore, the *INDP* is spelled out as *go*.

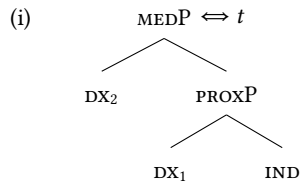


The next feature in the functional sequence is the feature  $dx_1$ . The story for this feature as its story in Modern German. The feature is merged with the existing syntactic structure, creating a PROXP. This structure does not form a constituent in any of the lexical trees in the language's lexicon, and neither of the spellout driven movements leads to a successful spellout. Therefore, in a second workspace, the feature  $dx_1$  is merged with the feature IND (the previous syntactic feature on the functional sequence) into a PROXP. The lexicon is checked for a lexical tree that contains the phrase PROXP that contains  $dx_1$  and IND. This syntactic structure does not form a constituent in any of the lexical trees in the language's lexicon.<sup>5</sup>

Therefore, the feature  $dx_1$  combines not only with the feature merged before it, but with a phrase that consists of the two features merged before it: IND and AN. This syntactic structure forms a constituent in the lexical tree in (ii), repeated from (16), which corresponds to  $k$ .<sup>6</sup>

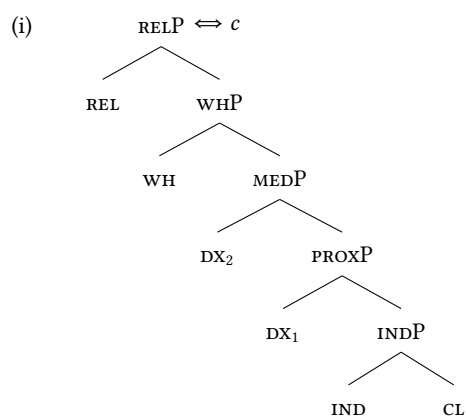
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<sup>5</sup>I actually assume that the lexical entry for the Polish demonstrative stem  $t$  is match here. I show it in (i).

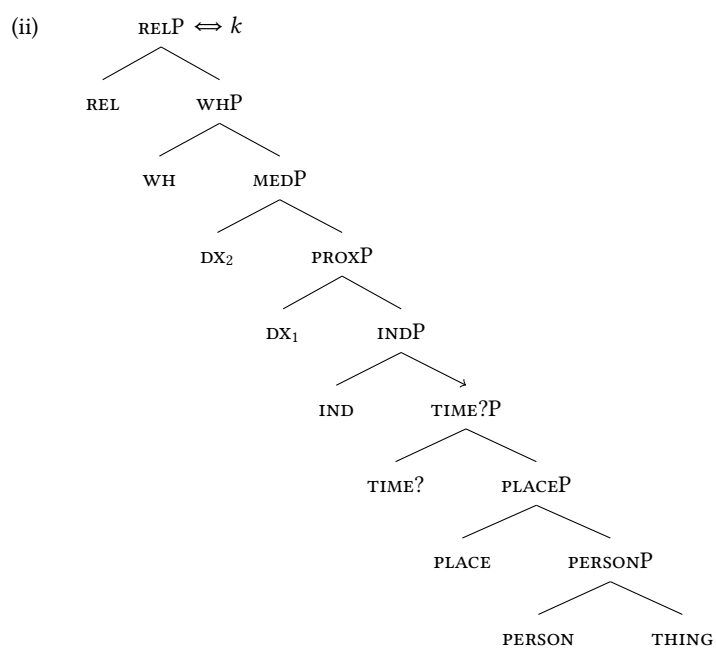


The captures the observation that  $t$  does not change depending on gender. I do not discuss it in the main text, because it is overridden by the lexical entry  $k$  later on in the derivation.

<sup>6</sup>The lexical entry for the inanimate differs from the animate in that it contains the feature CL instead of AN. I give the lexical entry for  $c$  in (i).



check place/manner/amount/time explain pointer

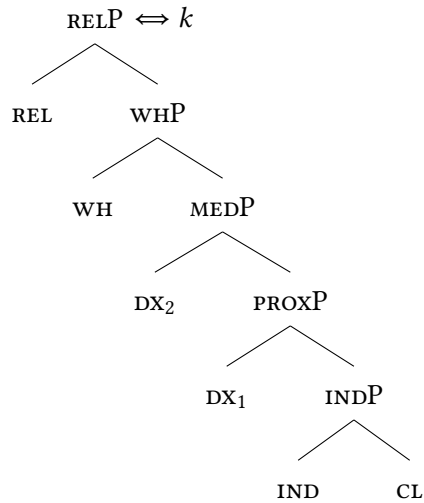


czyj=whose

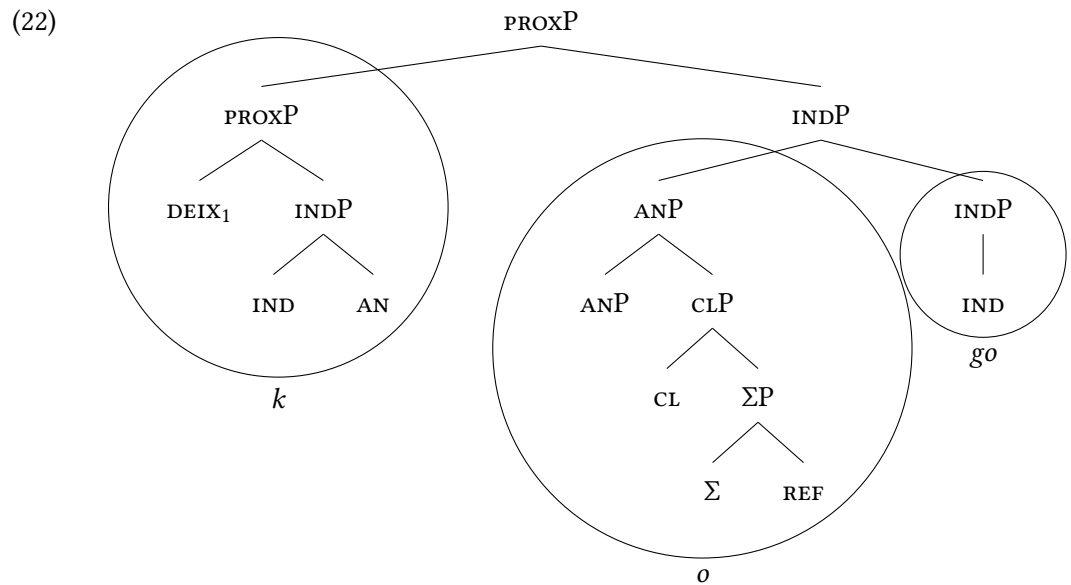
time > amount > manner > place > person > thing

kiedy > ile > jak > gdzie > kto > co

This way the proposal is similar to Wiland (2019).



Therefore, the PROXP is spelled out as *k*. The newly created phrase is merged as a whole with the already existing structure, and projects to the top node, as shown in (22).



The next feature in the functional sequence is the feature  $DX_2$ . The story for  $DX_2$  is similar to its story in Modern German. The feature is merged with the existing syntactic structure, creating a MEDP. This structure does not form a constituent in

any of the lexical trees in the language's lexicon, and neither of the spellout driven movements leads to a successful spellout. Backtracking leads splitting up the PROXP from the INDP. The feature  $DX_2$  is merged in both workspaces, so with PROXP and and with INDP. The spellout of  $DX_2$  is successful when it is combined with the PROXP. It namely forms a constituent in the lexical tree in (ii), which corresponds to the  $k$ . The MEDP is spelled out as  $k$ , and the MEDP is merged back to the existing syntactic structure.

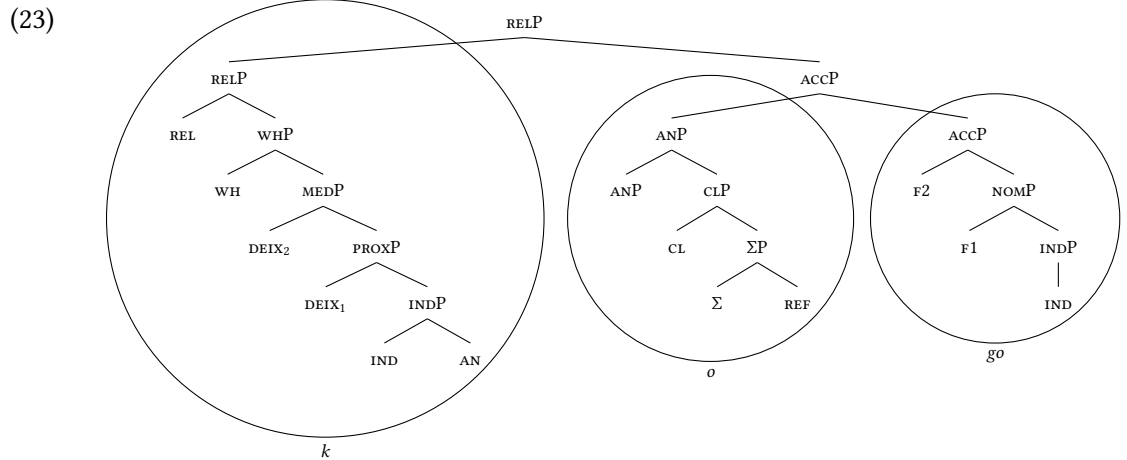
The derivations for the features WH and REL happen the same way. The feature WH is merged with the existing syntactic structure, creating a WHP. This structure does not form a constituent in any of the lexical trees in the language's lexicon, and neither of the spellout driven movements leads to a successful spellout. Backtracking leads splitting up the INDP from the INDP. The feature WH is merged in both workspaces, so with MEDP and and with INDP. The spellout of WH is successful when it is combined with the MEDP. It namely forms a constituent in the lexical tree in (ii), which corresponds to the  $k$ . The WHP is spelled out as  $k$ , and the WHP is merged back to the existing syntactic structure.

Similarly, the feature REL is merged with the existing syntactic structure, creating a RELP. This structure does not form a constituent in any of the lexical trees in the language's lexicon, and neither of the spellout driven movements leads to a successful spellout. Backtracking leads splitting up the WHP from the INDP. The feature REL is merged in both workspaces, so with WHP and and with INDP. The spellout of REL is successful when it is combined with the MEDP. It namely forms a constituent in the lexical tree in (ii), which corresponds to the  $k$ . The RELP is spelled out as  $k$ , and the RELP is merged back to the existing syntactic structure.

The next feature on the functional sequence is F1. This feature should somehow end up merging with INDP, because it forms a constituent in the lexical tree in (21), which corresponds to the *go*. This is achieved via Backtracking in which phrases are split up and going through the Spellout Algorithm. I go through the derivation step by step. The feature F1 is merged with the existing syntactic structure, creating a NOMP. This structure does not form a constituent in any of the lexical trees in the language's lexicon, and neither of the spellout driven movements leads to a successful spellout. Backtracking leads splitting up the RELP from the INDP. The feature F1 is merged in both workspaces, so with the RELP and and with the INDP. None of

these phrases form a constituent in any of the lexical trees in the language's lexicon. The first movement option in the Spellout Algorithm is moving the specifier. In the RELP there is no specifier, so this movement option is irrelevant. In the INDP, however, there is a specifier, which is moved to the specifier of NOMP. This syntactic structure forms a constituent in the lexical tree in (21), which corresponds to the *go*. The NOMP is spelled out as *go*, and the NOMP is merged back to the existing syntactic structure.

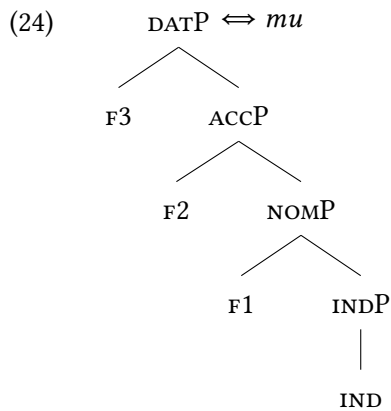
For the accusative relative pronoun, the last feature on the functional sequence is the feature F2. Its derivation preceeds the same as the one for the feature F1. The feature F2 is merged with the existing syntactic structure, creating a ACCP. This structure does not form a constituent in any of the lexical trees in the language's lexicon, and neither of the spellout driven movements leads to a successful spellout. Backtracking leads splitting up the RELP from the NOMP. The feature F2 is merged in both workspaces, so with the RELP and and with the NOMP. None of these phrases form a constituent in any of the lexical trees in the language's lexicon. The first movement option in the Spellout Algorithm is moving the specifier. In the RELP there is no specifier, so this movement option is irrelevant. In the NOMP, however, there is a specifier, which is moved to the specifier of ACCP. This syntactic structure forms a constituent in the lexical tree in (21), which corresponds to the *go*. The ACCP is spelled out as *go*, and the ACCP is merged back to the existing syntactic structure.



For the accusative relative pronoun, the last feature on the functional sequence is

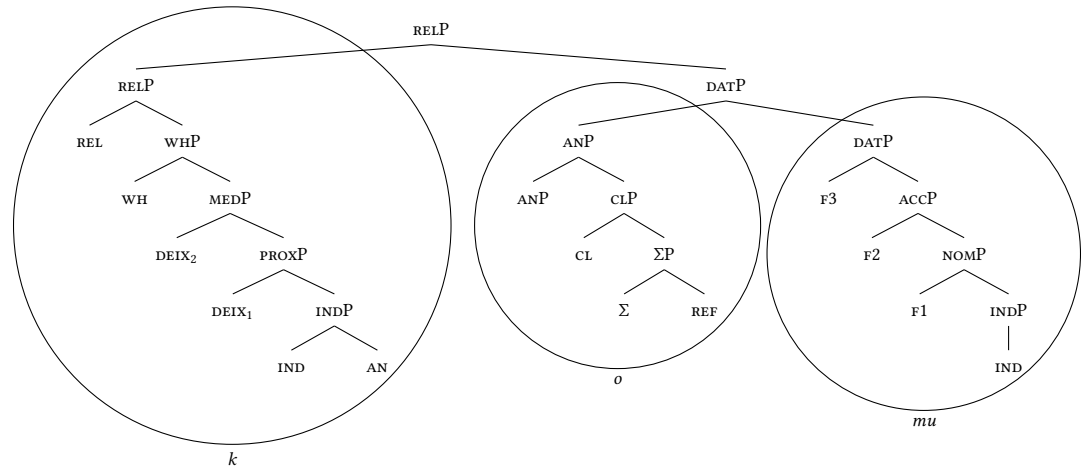


the feature F3. Its derivation preceeds the same as the one for the feature F2. The feature F3 is merged with the existing syntactic structure, creating a DATP. This structure does not form a constituent in any of the lexical trees in the language's lexicon, and neither of the spellout driven movements leads to a successful spellout. Backtracking leads splitting up the RELP from the ACCP. The feature F3 is merged in both workspaces, so with the RELP and and with the ACCP. None of these phrases form a constituent in any of the lexical trees in the language's lexicon. The first movement option in the Spellout Algorithm is moving the specifier. In the RELP there is no specifier, so this movement option is irrelevant. In the ACCP, however, there is a specifier, which is moved to the specifier of DATP. This syntactic structure forms a constituent in the lexical tree in (24), which corresponds to the *mu*.



The ACCP is spelled out as *go*, and the ACCP is merged back to the existing syntactic structure.

(25)



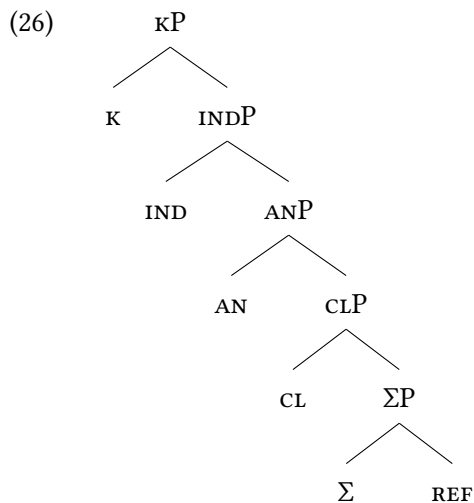
To summarize, I decomposed the relative pronoun into the three morphemes *k*, *o* and the suffix (*go* and *mu*). I showed which features each of the morphemes spells out, and in which constituents the features are combined. It is these constituents that determine whether the relative pronoun can delete the light head or not.

## 8.2 The (extra) light head

In my proposal, headless relatives are derived from light-headed relatives. The relative pronoun can delete the light head when the relative contains the light head as a single constituent. I suggest that this only holds for Polish when the internal and the external case match. In the previous section, I gave the internal structure of the Polish relative pronoun, i.e. which constituents the relative pronoun consists of. In this section, I show the internal structure of the Polish light head.

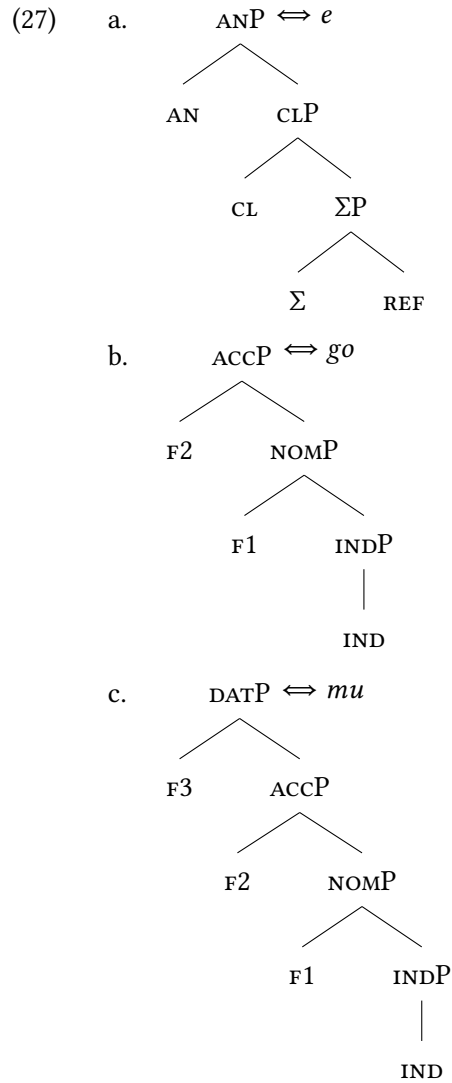
I take the functional sequence of the extra light head in Modern German, and I show how these features are spelled out in Polish. In Modern German the extra light head spells out as a single constituent, in Polish it consists of two constituents. This is what leads Polish to be of a different language type than Modern German. Just like for Modern German, the extra light head is not attested in existing light-headed relatives in Polish. For Modern German, I gave two reasons for not taking the existing light-headed relative as source of the headless relative. I show both of them hold for Polish too.

In Section 7.3, I argued for a particular feature content of the extra light head in Modern German. In my proposal, the difference in spellout is the only difference between Modern German and Polish: the features that are spelled out are the same ones. Therefore, I assume that the extra light head in Polish spells out the same features as the extra light head in Modern German. I give the functional sequence for the extra light head in (26).



The  $\kappa P$  is a placeholder for multiple case projections. When the extra light head is the accusative, the  $\kappa P$  consists of the features  $F1$  and  $F2$ , and they form the  $ACC P$ . When the extra light head is the dative, the  $\kappa P$  consists of the features  $F1$ ,  $F2$  and  $F3$ , and they form the  $DAT P$ .

Three lexical entries are needed to spell out the accusative and dative extra light heads. I motivated their feature content in Section 8.1. The morpheme *e* spells out the features  $REF$ ,  $\Sigma$ ,  $CL$  and  $AN$ , as shown in (27a). The morpheme *go* spells out the features  $IND$ ,  $F1$  and  $F2$ , as shown in (27b). The morpheme *mu* spells out the features that *go* spells out plus the feature  $F3$ , as shown in (27c).

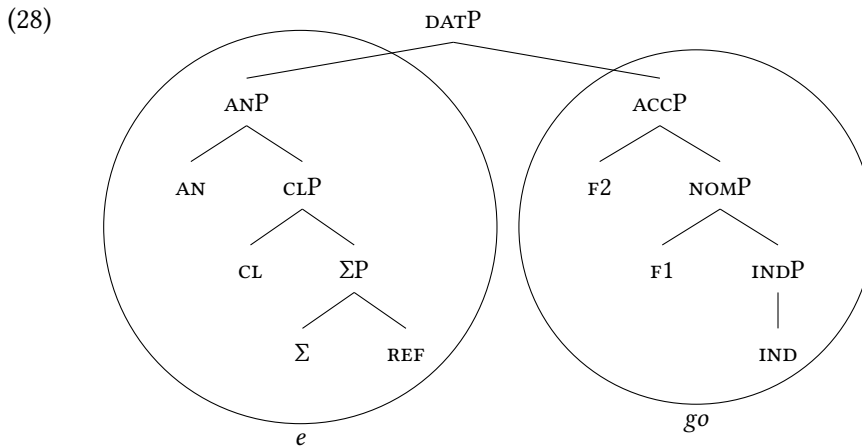


The accusative extra light head is derived as follows. The feature  $\text{REF}$  is merged with the feature  $\Sigma$ , forming the  $\Sigma\text{P}$ . This phrase is contained in the lexical tree in (27a), so it is spelled out as  $e$ . The feature  $\text{CL}$  is merged with the  $\Sigma\text{P}$ , forming the  $\text{CLP}$ . This phrase is contained in the lexical tree in (27a), so it is spelled out as  $e$ . The feature  $\text{AN}$  is merged with the  $\text{CLP}$ , forming the  $\text{ANP}$ . This phrase is contained in the lexical tree in (27a), so it is spelled out as  $e$ .

The feature  $\text{IND}$  is merged with the  $\text{ANP}$ , forming the  $\text{INDP}$ . This phrase (an  $\text{INDP}$

containing more features besides *IND*) is not contained in any of the lexical entries in (27). There is no specifier to move, so the first movement in the spellout algorithm is irrelevant. The second movement is tried: the complement of *IND*, the *ANP*, is moved to the specifier of *INDP*. This phrase is contained in the lexical tree in (27b), so it is spelled out as *go*. The feature *F1* is merged with the *INDP*, forming an *NOMP*. This phrase is not contained in any of the lexical entries in (27). The first movement is tried: the specifier of the *INDP*, the *ANP*, is moved to the specifier of *NOMP*. This phrase is contained in the lexical tree in (27b), so it is spelled out as *go*. The feature *F2* is merged with the *NOMP*, forming an *ACCP*. This phrase is not contained in any of the lexical entries in (27). The first movement is tried: the specifier of the *NOMP*, the *ANP*, is moved to the specifier of *ACCP*. This phrase is contained in the lexical tree in (27b), so it is spelled out as *go*.

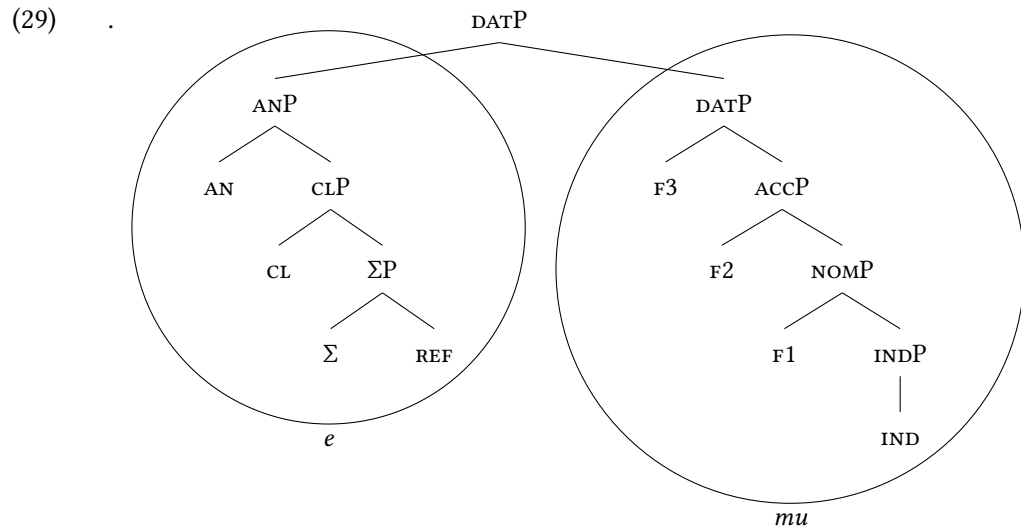
The accusative animate extra light head is shown in (28).



The dative animate extra light head is built as its accusative counterpart, except for that the feature *F3* is added to create a dative.

The feature *F3* is merged with the *ACCP*, forming an *DATP*. This phrase is not contained in any of the lexical entries in (27). The first movement is tried: the specifier of the *ACCP*, the *ANP*, is moved to the specifier of *DATP*. This phrase is contained in the lexical tree in (27c), so it is spelled out as *mu*.

The dative animate extra light head is shown in (29).



So, the light-headed relative that headless relatives are derived from is:

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

For Modern German, I considered two kinds of light-headed relatives as the source of the headless relative. First, the light-headed relative is derived from an existing light-headed relative, and the deletion of the light head is optional. Second, the light-headed relative is derived from a light-headed relative that does not surface in Modern German, and the deletion of the light head is obligatory. For Modern German I concluded it was the second, and I proposed which features this extra light head should consist of. This set of features in Polish corresponds to the extra light head *ego* or *emu*, which is not attested as a light head in an existing light-headed relative in Polish.

In the rest of this section I consider the existing Polish light-headed relative that could potentially be the source for headless relatives. This is the light-headed relative that in which the demonstrative is the light head, as shown in (31).

- (31) Jan śpiewa to, co Maria śpiewa.  
 Jan sings DEM.M.SG.ACC REL.AN.ACC Maria sings  
 ‘John sings what Mary sings.’ (Polish, Citko 2004: 103)

For Modern German, I gave two arguments for not taking this existing light-headed relative as source of the headless relative. In what follows, I show that these arguments hold for Polish in the same way do for Modern German.

First, in headless relatives the morpheme *kolwiek* ‘ever’ can appear, as shown in (32).

- (32) Jan śpiewa co -kolwiek Maria śpiewa.  
 Jan sings REL.AN.ACC ever Maria sings  
 ‘Jan sings everything Maria sings.’ (Polish, Citko 2004: 116)

Light-headed relatives do not allow this morpheme to be inserted, illustrated in (33).

- (33) \*Jan śpiewa to, co -kolwiek Maria śpiewa.  
 Jan sings DEM.M.SG.ACC REL.AN.ACC ever Maria sings  
 ‘John sings what Mary sings.’ (Polish, Citko 2004: 116)

Just like for Modern German, I assume that the headless relative is not derived from an ungrammatical structure.<sup>7</sup>

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<sup>7</sup>Citko (2004) takes the complementary distribution of *kolwiek* ‘ever’ and the light head to mean that they share the same syntactic position. I have nothing to say about the exact syntactic position of *ever*, but in my account it cannot be the head of the relative clause, as this position is reserved for the extra light head. My reason for the incompatibility of *ever* and the light head is that they are semantically incompatible.

For concreteness, I assume *ever* to be situated within the relative clause. Placing it in the main clause generates a different meaning, illustrated by the contrast in meaning between (ia) and (ib) in Czech.

- (i) a. Sním, co -koliv mi uvaříš.  
 eat.1sg what ever I.DAT cook.2sg  
 ‘I will eat whatever you will cook for me.’  
 b. Sním co -koliv, co mi uvaříš.  
 eat.1sg what ever what I.DAT cook.2sg  
 ‘I will eat anything that you will cook for me.’ (Czech, Šimík 2016: 115)

The second argument against the existing light-headed relatives being the source of headless relatives comes from their interpretation. Headless relatives have two possible interpretations, and light-headed relatives have only one of these. Just like in Modern German, Polish headless relatives can be analyzed as either universal or definite (Citko 2004: 103). Light-headed relatives, such as the one in (31), only have the definite interpretation.

In sum, just like Modern German, Polish headless relatives do not seem to be derived from light-headed relatives in which the light head is a demonstrative. A difference between Polish and Modern German demonstratives is that Polish ones do not spell out definite features. The fact that Polish demonstratives are also not the light head of a headless relative confirm that deixis features have to be absent from the extra light head.

### 8.3 Comparing constituents

In this section, I compare the constituents of extra light heads to those of relative pronouns in Polish. I give three examples, in which the internal and external case vary. I start with an example with matching cases: the internal and the external case are both accusative. Then I give an example in which the internal case is more complex than the external case: the internal case is the dative and the external case is the accusative. I end with an example in which the external case is more complex than the internal case: the internal case is the accusative and the external case is the dative. In Polish, a matching language, only the first example is grammatical. I derive this by showing that only in this situation the relative pronoun can delete the light head. When the cases match, the light head forms namely a constituent that is contained in the structure of the relative pronoun.

I start with the matching cases. Consider the example in (34), in which the internal accusative case competes against the external accusative case. The relative clause is marked in bold. 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

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as well, as the predicate *lubić* ‘to like’ also takes accusative objects. The extra light head *ego* ‘ELH.AN.ACC’ appears in the accusative case. It is placed between square brackets because it does not surface.

- (34) Jan lubi [ego] kogo -kolkwiek Maria lubi.  
 Jan like.3SG<sub>[ACC]</sub> DEM.ACC.AN.SG REL.ACC.AN ever Maria like.3SG<sub>[ACC]</sub>  
 ‘Jan likes whoever Maria likes.’

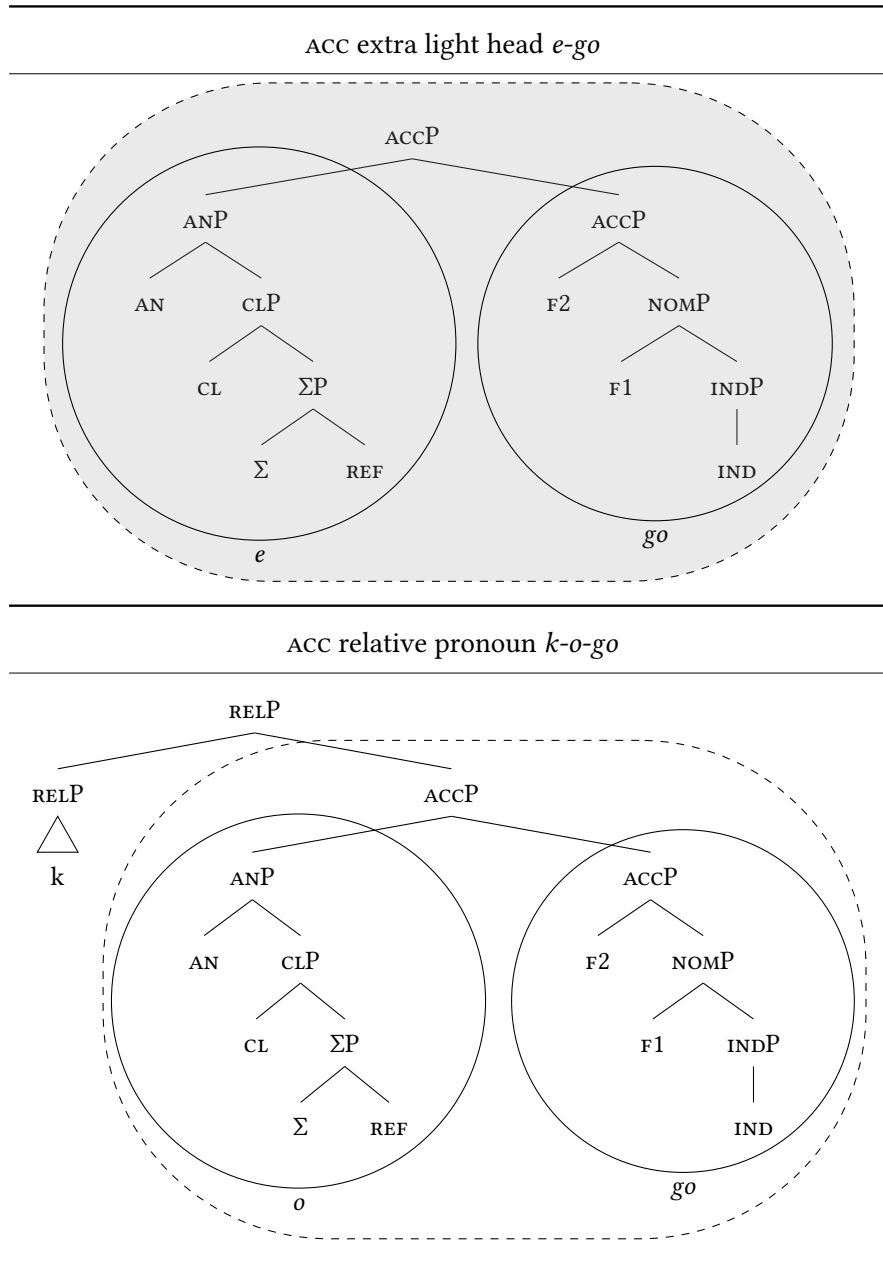
(Polish, adapted from Citko 2013 after Himmelreich 2017: 17)

In Figure 8.1, I give the syntactic structure of the extra 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 extra light head consists of two morphemes: *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 extra light head and the relative pronoun.

The extra light head consists of two constituents: the ANP and the (lower) ACCP. Together they form the (higher) ACCP. This ACCP is also a constituent within the relative pronoun. Therefore, the relative pronoun can delete the extra light head. I signal the deletion of the extra light head by marking the content of its circle gray.

I continue with the example in which the internal case is more complex than the external case. Consider the examples in (35), in which the internal dative case competes against the external accusative case. The relative clauses are marked in bold. 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 dative case. The external case is accusative, as the predicate *lubić* ‘to like’ takes accusative objects. The extra light head *ego* ‘ELH.AN.ACC’ appears in the accusative case. (35a) is the variant of the sentence in which the extra 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 extra light head surfaces, and it is ungrammatical too.

Figure 8.1: Polish  $\text{EXT}_{\text{ACC}}$  vs.  $\text{INT}_{\text{ACC}} \rightarrow kogo$

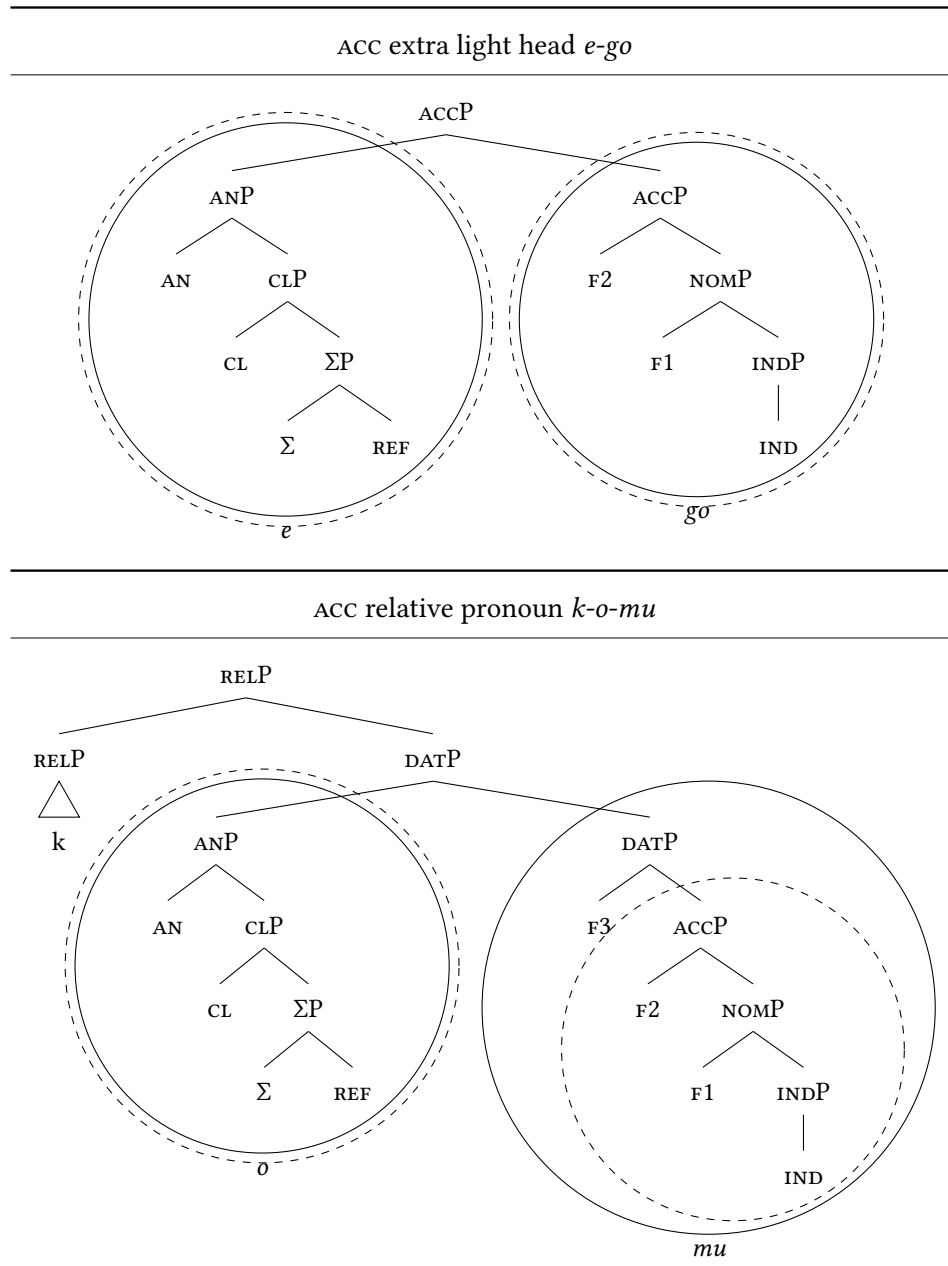
- (35) a. \*Jan lubi [ego] **komu** **-kolkwiek dokucza.**  
 Jan like.3SG<sub>[ACC]</sub> ELH.ACC.AN REL.DAT.AN.SG ever tease.3SG<sub>[DAT]</sub>  
 ‘Jan likes whoever he teases.’  
 (Polish, adapted from Citko 2013 after Himmelreich 2017: 17)
- b. \*Jan lubi ego [**komu**] **-kolkwiek dokucza.**  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

In Figure 8.2, I give the syntactic structure of the extra 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 two morphemes: *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 extra light head and the relative pronoun.

The extra light head consists of two constituents: the ANP and the (lower) accP. Together they form the (higher) accP. Both of these constituents are also constituents within the relative pronoun. However, the (higher) accP is not a constituent within the relative pronoun. The constituent in which the accP is contained namely also contains the feature F3 that makes it a DATP. In other words, each feature and even each constituent of the extra light head is contained in the relative pronoun. However, they are not contained in the relative pronoun as a single constituent. Therefore, the relative pronoun cannot delete the extra light head.

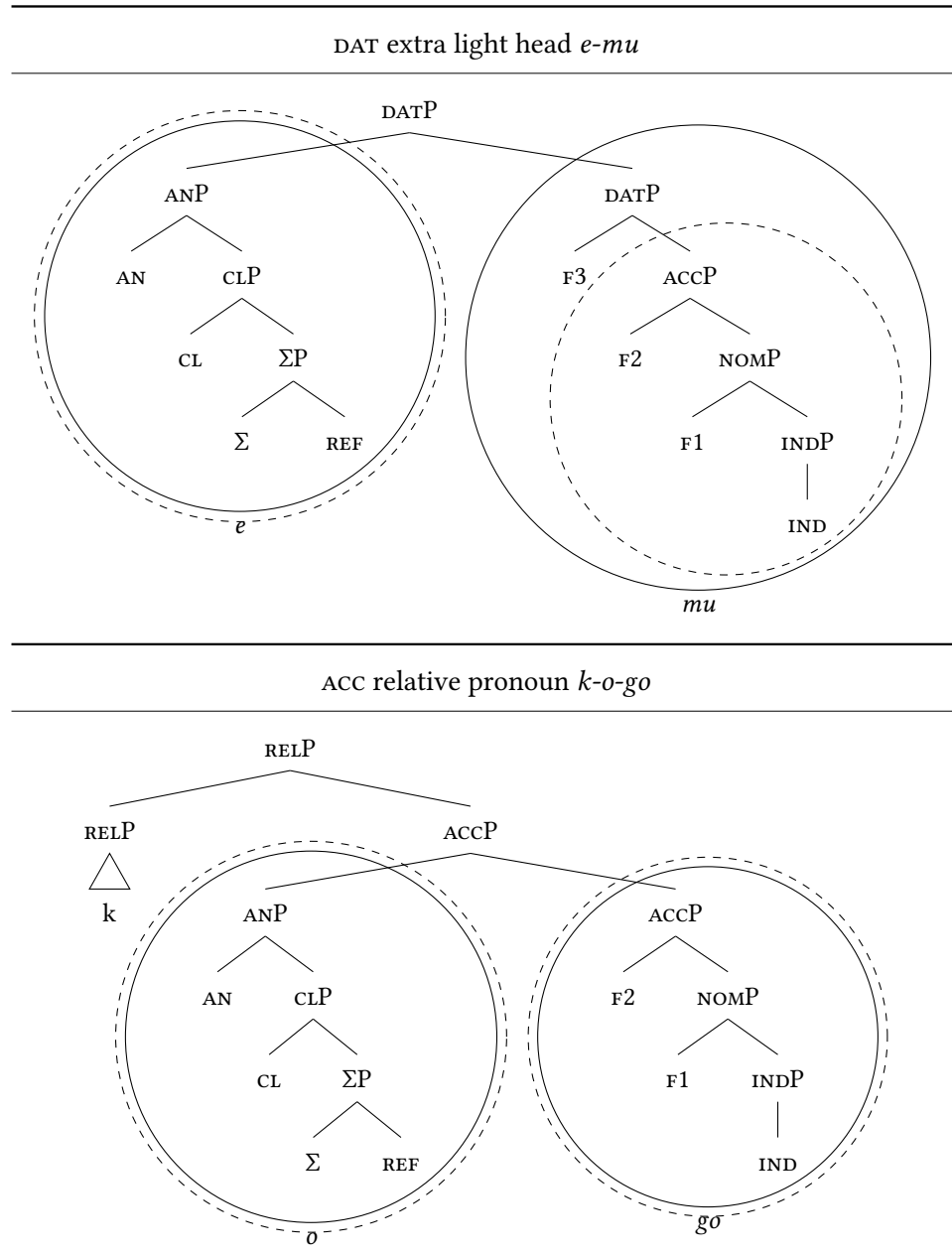
Recall from Section 7.4 that this is the crucial example in which Modern German and Polish differ. The contrast lies in that the extra light head in Modern German forms a single constituent and in Polish it forms two constituents. In Modern German, relative pronouns in a more complex case contain the extra light head in a less complex case as a single constituent. In Polish, they do not. Relative pronouns in a complex case still contain all features of an extra light head in a less complex case, but the extra light head is not a single constituent within the relative pronoun. That is, the weaker feature containment requirement is met, but the stronger constituent containment requirement is not. This shows the necessity of formulating

Figure 8.2: Polish  $\text{EXT}_{\text{ACC}}$  vs.  $\text{INT}_{\text{DAT}} \rightarrow \text{ego/komu}$

I continue with the example in which the external case is more complex than the internal case. Consider the examples in (36), in which the internal dative case competes against the external accusative case. The relative clauses are marked in bold. 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 accusative case. The external case is dative, as the predicate *ufać* ‘to trust’ takes dative objects. The extra light head *emu* ‘ELH.AN.DAT’ appears in the dative case. (36a) is the variant of the sentence in which the extra light head is absent (indicated by the square brackets) and the relative pronoun surfaces, and it is ungrammatical. (36b) is the variant of the sentence in which the relative pronoun is absent (indicated by the square brackets) and the extra light head surfaces, and it is ungrammatical too.

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

The relative pronoun consists of three morphemes: *k*, *o* and *go*. The light head consists of two morphemes: *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

Figure 8.3: Polish  $\text{EXT}_{\text{DAT}}$  vs.  $\text{INT}_{\text{ACC}} \rightarrow \text{emu/kogo}$

the extra light head and the relative pronoun.

The extra light head consists of two constituents: the ANP and the (lower) DATP. In this case, the relative pronoun does not contain both these constituents. The relative pronoun only contains the ACCP, and it lacks the F3 that makes a DATP. Since the weaker feature containment requirement is not met, the stronger constituent requirement cannot be met either. The extra light head also does not contain all constituents or features that the relative pronoun contains, because it lacks the complete RELP. Therefore, the relative pronoun cannot delete the extra light head, and the extra light head can also not delete the relative pronoun.

## **Primary texts**





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