Case and preposition stranding in Old English free relatives

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Taylor (2014) observes that some of the factual claims made in Allen (1980), the most thorough examination of free relatives in OE to date, are not entirely correct. Taylor presents some examples that Allen's analysis of OE free relatives does not account for and proposes an alternative analysis in which the relative pronoun can be internal to the relative clause and the case of the pronoun is determined by the case hierarchy proposed by Harbert (2007) for Gothic. This corpus-based study supplies new data showing that while Taylor's relative-internal analysis is needed for some examples, the evidence does not support the suggested case hierarchy except in regulating optional case attraction. Latin influence may account for examples that do not fit the usual patterns.

1. Introduction

Like Present Day English (PDE), Old English (OE) had relative clauses lacking a nominal head, commonly referred to as 'free' relatives, illustrated in (1):

(1) ne ondræde ic hwæt man me do
not fear I what:ACC one me does
'I do not fear what a person may do to me'
(coaelive,+ALS_[Martin]:176.6075)

Taylor (2014: 473) notes that the proper analysis of free relatives, both in OE and PDE, has been the matter of some dispute. Specifically, where does the relative pronoun in these relatives reside? This paper presents fresh data bearing on this question for OE and corrects

some factual errors in Allen (1980). In addition, it offers new evidence concerning what determined the case of the relative pronoun in a free relative. The data presented in the paper both bears on the reconstruction of Proto-Germanic syntax and represents a modest addition to our knowledge of the typology of free relatives, as OE is both similar to modern German in some respects but different in the matter of the 'matching effects' relevant to these relatives.

Section 2 of this paper outlines two hypotheses about the structure of free relatives. Section 3 sets out some basic facts about headed and free relatives in OE, and the research questions and methodology used to address them are laid out in section 4. Because free relatives fall into two types as far as the pronoun used is concerned, separate sections are devoted to each type, with section 5 presenting the findings for *wh*- free relatives and section 6 discussing free relatives using demonstrative pronouns. Within each of these sections, a subsection is devoted to each matching effect that was investigated, i.e. case marking and the behaviour of objects of prepositions. Section 7 summarizes some conclusions.

2. Two analyses of free relatives

There is universal agreement that the clauses containing free relatives have the external distribution of phrases that are governed by the verb of the main clause. That is, they can be noun phrases (NPs), adjective phrases (APs), etc., depending on the selectional restrictions of the verb. The debate concerns the internal structure of these free relatives, specifically, the position of the relative pronoun. With relative clauses with a nominal head, e.g. *I don't fear the things which a person may do to me*, it is clear that the relative pronoun, *which* in this example, is within the relative clause. There is general agreement that the pronoun is moved from its initial position to the Specifier of the relative clause. But with a free relative like *I don't fear what a person may do*, it is not immediately obvious whether the relative pronoun is to be analysed as occupying that Specifier position in the relative clause or is rather a

pronominal head of the relative clause, situated in the matrix clause.

Bresnan and Grimshaw (1978) argued on the basis of 'matching effects' that in Modern English, the pronoun should be analysed as a head external to the relative clause. The crucial fact is that the phrase containing the relative pronoun must meet the selection requirements of the matrix clause as well as of the relative clause. For example, it is possible to say their example (41) *He'll get however tall his father did,* but not **He'll reach however tall his father did.* These facts are easily explained if we assume that the relative pronoun *however* is generated in the main clause: *get* can take an AP complement (*he'll get very tall*), but *reach* requires a NP complement (*he'll reach a great height/*very tall*). If we assume that the relative pronoun is actually generated in the matrix clause, the fact that the relative pronoun meets the selectional restrictions of the matrix verb follows automatically. Groos and van Riemsdijk (1981: 179) refer to this sort of analysis as the Head Hypothesis.

The Head Hypothesis contrasts with the Comp Hypothesis, which is that the position of the relative pronoun is the Specifier of the relative clause. Van Riemsdijk (2006), following the arguments of Groos and van Riemsdijk (1981), assumes that that the matching effects can be dealt with in the Comp Hypothesis by assuming that the relative pronoun in Comp is accessible to the selectional restrictions of the upper clause verb.

A modernized version of the Comp Hypothesis is now widely accepted for Modern English, e.g. by Gisborne and Truswell (2017: 27), who illustrate 'dependent' (i.e. headed) relatives and free relatives with examples (2a) and (2b), respectively:

(2) a. I'll have [$_{NP}$ the food [$_{CP}$ that she's having__]]

b. I'll have [$_{NP}$[$_{CP}$ what she's having__]]

In (2a) the relative particle *that* is assumed to occupy the position of the head C of CP, following an empty Specifier. In (2b) the relative pronoun is in the position of Specifier of CP, followed by an empty C. It is assumed that movement has taken place from the gap

position even when it is not represented by an overt pronoun, as in *I'll have the food she's having.*

3. Headed and Free relatives in Old English

3.1 Headed relatives

Given that one possible analysis of the pronoun in relative clauses is that they were external to the relative clause, i.e. parallel to nominal heads, it is necessary to give a brief description of relative clauses with nominal heads.

The most common type of relative clause in OE used no pronoun, but only the relative particle *þe/ðe*:

(3) on ðære byrig þe he to gehyrde
in the town that he to belonged
'in the town that he belonged to'
(cocathom1,+ACHom_I,_2:190.10.317)

An important fact about this type of relative clause is that preposition stranding was obligatory, as in (3).

OE also had relative clauses with relative pronouns, but the pronouns used with headed relatives were demonstrative, rather than interrogative, pronouns. The relative pronoun could appear alone, as in (4a) or could be followed by the relative particle, as in (4b):

(4) a. þa gestrynde he sunu se wæs gehaten Hebær of þam
then begat he son who:NOM was called Hebar of whom
asprang þæt hebræisce folc
sprang the Hebrew people
'Then he begat a son who was named Hebar, of whom sprang the Hebrew people'
(cocathom1,+ACHom_I,_1:186.222.239)

b. & wæs se soða scyppend se þe ana is God forsewen &
and was the true Creator who:NOM that alone is God despised and
geunweorþod
dishonoured
'and the true Creator, who alone is God, was despised and dishonoured'
(cocathom1,+ACHom_I,_1:186.220.232

I will refer to the relative clauses of (4a) and (4b) as SE and SE ÞE relatives, respectively. Pied piping of a preposition, illustrated in the second relative clause of (4a), is the only pattern found with either type using a pronoun.[1]

Taylor (2014: 467) assumes this basic structure for headed relative clauses in both OE and PDE:

(5) [DP [NP *head*i [CP (*RP*i) [C (*comp*) [TP …*gap*i…]]]]]

This analysis is similar to what Gisborne and Truswell (2017) assume for PDE, but OE differs from PDE in allowing the combination of a relative pronoun and a relative particle (the SE ÞE type). In PDE, either the RP (relative pronoun) or the complementizer may be overt, but not both.

By this analysis, only the complementizer position is filled in example (3). In (4a) we have two relative clauses in which the Specifier of CP is filled with a pronoun (*se* and *þam*) but the complementizer position is empty. In (4b) both the Specifier of CP and the complementizer are filled.

The case of the relative pronoun in both SE and SE ÞE relatives is normally determined by

[1] Preposition stranding was generally impossible with overtly expressed pronouns, except for principled exceptions such as the locative pronoun *þær*. For discussions, see Allen (1980), van Kemenade (1987), and Taylor (2014: 444), among others.

the role of the relativized NP is the relative clause. However, the relative pronoun was sometimes ‘attracted’ into the matrix clause case, as in (6), in which the pronoun appears in the accusative case expected of the object of the main clause verb *seceað*. This attraction was sporadic and regulated by the case hierarchy discussed below.

(6) ge seceað þone hælynd þone þe on rode ahangen wæs
you seek the:ACC Saviour whom:ACC that on cross hanged was
‘you seek the Saviour, who was hanged on the cross’
cowsgosp,Mt_[WSCp]:28.5.2139

3.2 Free relatives

3.2.1 *wh*- relatives

OE was like PDE in using *wh*- pronouns (*hw*- in OE) as both interrogative and relative pronouns in free relatives. Taylor (2014: 473) refers to relative clauses like (1) as definite free relative clauses. Such *wh*- pronouns were also employed in what Taylor (2014: 473) calls the indefinite type, in which case they were flanked by *swa* (PDE *so*):

(7) a. soðes ic þe sylle swa hwæt swa þu me bitst
truly I thee give so what:ACC as you me ask
‘Truly, I will give you whatever you ask of me’
(cowsgosp,Mk_[WSCp]:6.23.2594)

b. Salomon eac forgeaf þære cwene swa hwæs swa heo gyrnde æt
Solomon also gave the queen so what:GEN as she asked at
him
him

'Solomon also gave the queen whatever she asked of him'

(cocathom2,+ACHom_II,_45:340.169.7637)

Following the assumption that the phrase *swa hwæs swa* resides in the Specifier of the CP and the usual assumption that the second *swa* is a complementizer, the relative structure of (7b) is as in (8):

(8) [$_{DP}$ [ø [$_{CP}$ swa hwæs$_i$ [$_C$ swa [$_{TP}$ heo gyrnde t$_i$ at him]]]]]

Taylor uses (7b) (her example 188) to demonstrate the incorrectness of the claim in Allen (1980) that the case of the pronoun in *wh-* free relatives was always the case required by the matrix clause: the verb *sylle* of the main clause should take an accusative object, and the genitive *hwæs* can only be explained as being due to the verb in the relative clause, since *gyrnan* could take genitive objects. It can also be noted that my argument in the 1980 paper that (7a) demonstrates the case marking required by the matrix clause fails because I did not then realize that *biddan,* although it most frequently took a genitive object, could sometimes take an accusative one:

(9) Đu ne bæde me langsum lif
you not asked me:DAT long:NEUT.SG.ACC life:NEUT.SG.ACC

'You did not ask me for long life'

(cocathom2,+ACHom_II,_45:336.30.7539)

(7a) is therefore is ambiguous as to whether the matrix or lower clause case is used.

3.2.2 Demonstrative pronouns and free relatives

A major difference between OE and PDE is that in OE, demonstrative pronouns were not only used in relative clauses with nominal heads, but also in free relatives:

(10) & nam þæt he on læg
and took that:ACC he on lay
'and took what he lay on
(cowsgosp,Lk_[WSCp]:5.25.3951)

The demonstrative pronoun could be accompanied by the relative particle:

(11) & fundað wið ðæs ðe hit ær from com,
and journeys towards that:GEN that it earlier from came
'and journeys towards what it came from'
(cocura,CP:38.277.6.1799)

There is general agreement that examples like (11) must be anlaysed as ordinary relative clauses with a demonstrative pronoun, for reasons that will be discussed in section 6.1. The major question of analysis here is whether there is a systematic difference between these relatives with *þe* and those without it. Taylor (2014) appears to assume that the relatives with the relative particle are to be taken as demonstrative-headed, whereas the pronouns without *þe* are to be analysed as internal to the relative clause. Evidence bearing on this question will be presented in this paper.

3.2.3 Case marking and free relatives

Although she comments that more work is needed, Taylor suggests that Harbert's (2007: 468) generalization for case marking in free relatives in Gothic is likely to be correct for OE also. Harbert's suggestion is that when there is a clash between the case required by the matrix clause and that expected by the role in the relative clause, the case that is used is determined

by which is rightmost on a case hierarchy Nom<Acc<[Dat/Gen]. Essentially, in the instance of a clash between the case that would be assigned to the relativized constituent within the relative clause and the case that would be required in the main clause, a more oblique case wins out. I'll refer to the suggestion of Allen (1980) as the Matrix Case hypothesis and Taylor's suggestion that Harbert's hierarchy applies to OE as the Case Hierarchy hypothesis. The Case Hierarchy hypothesis suggests that the case of the pronoun in a headless relative was always regulated by this hierarchy. This is different from the suggestion that case attraction, when it happens, is regulated by this or a similar hierarchy, which seems to be true for OE headed relatives and is also attested in other languages, according to van Riemsdijk (2006: 359). Sections 5 and 6 of this paper examine how well the Matrix Case and Case Hierarchy hypotheses account for the attested facts of OE free relatives as well as looking at the possibility that the case in *wh*- word free relatives is consistently that assigned within the lower clause.

4. The investigation: aims and methodology

Taylor (2014: 475) comments that Allen (1980) remains the most comprehensive treatment to date of free relatives in OE. The claims in that paper were used by Harbert (2007) in a comparison of Germanic languages. However, it is clear that in Allen (1980) I missed some examples in my data gathering, but at this point it is not clear how frequent such examples were. Furthermore, previous studies of free relatives in OE have not included poetry or given any statistics on the different types. It seems likely that poems, even ones found only in fairly late manuscripts, enshrine some aspects of early syntax, as assumed by Taylor (2014: 277) and Walkden (2014: 225). It is interesting to see whether a difference between OE poetry and prose can be discerned in this area of syntax. It is also of interest to look at similarities and differences between the different types of relatives, including between the ones in which a

demonstrative pronoun is followed by *þe* and ones that have the pronoun alone. For more than one reason, then, a new investigation is called for.

The data gathering for Allen (1980) was carried out at a time when no electronic parsed corpus was available. This investigation uses Taylor et. al.'s (2003*) York-Toronto-Helsinki Parsed Corpus of OE Prose* (*YCOE*) and Pintzuk et al.'s (2001) *York-Helsinki Parsed Corpus* of OE Poetry (*York Poetry Corpus*). This investigation used these corpora to find evidence bearing on the analysis of the *wh-* and demonstrative pronouns of OE free relatives, gathering separate statistics for prose and poetry.

Taylor (2014: 475) comments that because of the ambiguity of SE as a demonstrative or a relative pronoun, it is 'not always clear whether in the definite type the head is internal or external to the FRC [free relative clause].' The use of the term 'head' for the relative pronoun in a structure like (8) is rather confusing here, because 'head' is a common term for what Taylor is referring to as an 'external' head, i.e. an antecedent NP in the matrix clause. In what follows, I will accordingly follow Harbert (2007: 466) in using 'pivot' to refer to the pronoun involved in the relative clauses in question.

The investigation looked at two matching effects. The first concerns the case marking of the pivot in the case of clashing cases. In Allen (1980), I claimed that both *wh-* and demonstrative pivots always had the case marking expected of the role of the pronoun in the main clause, which Taylor (2014) demonstrated was not correct. This investigation tests Taylor's own suggestion that case marking was controlled by Harbert's case hierarchy against a third possible explanation, namely that the case of at least the most clearly headless type involving a *wh-* pronoun was simply determined by the lower clause role. I shall refer to this as the Lower Case hypothesis.

Taylor's suggestion about a case hierarchy apparently does not apply to demonstrative-headed relatives. However, modern theories suggest the possibility demonstratives followed

by *þe* could sometimes be internal to the relative clause, with the demonstrative in the Specifier position and the particle in the complementizer position. A comparison of the case marking is helpful in confirming that the external head analysis of demonstrative pivots is more straightforward in most instances.

The second question investigated is the behaviour of pivots playing the role of object of preposition in the relative clause, i.e. stranding vs. pied piping. Do the *wh-* pivots work the same way as demonstrative pivots, and with the demonstrative pivots, do the stranding facts differentiate the type with a following relative particle from the one without it? While the case marking facts do not give decisive evidence for the relative-internal or relative-external position of the pivot, examples with pied piping or preposition stranding do.

The investigation used Randall's (2000) corpussearch program on the *YCOE* and the *York Poetry Corpus*. Separate investigations were carried out for structures parsed in the corpora as free relatives with *wh-* pronouns, free relatives with demonstrative pronouns, and relative clauses with demonstrative heads. It must be kept in mind that the corpora parsing is not intended as a syntactic analysis, but only as an aid to data gathering. However, since this investigation is looking at free relatives, the data can be gathered only with an understanding of what the corpora treat as a free relative (CP-FRL) and what they treat as a relative clause (CP-REL) with a demonstrative head.

The principles used for this parsing are set out at http://www-users.york.ac.uk/~lang18/Documentation/parsing-manual-oe.htm#free_relatives and http://www-users.york.ac.uk/~lang18/Documentation/parsing-manual-oe.htm#relative_clauses. Briefly, all *wh-* relatives and relatives without a nominal head that have demonstrative pronoun not accompanied by a relative particle are parsed as CP-FRL. The pronoun is parsed as occupying the position before the C of the relative clause (i.e. the Specifier) and the C position is empty or occupied by *swa* in the *swa wh-swa* type. A

demonstrative pronoun followed by *þe* is parsed as the head of a CP-REL.

The coding used for the queries is set out in the Appendix, but a brief discussion of the exclusions in the searches is in order here. First, the investigation excluded a small number of late texts, detailed in the Appendix. Within the included texts, not all examples that are parsed as free relatives in the corpora were targeted by the searches. One major exclusion is of examples in which the clause in question is parsed by the corpus as being in a left-dislocated structure:

(12) And to swa hwilcere leode swa we cumað we cunnon ðære gereord
and to so which people as we come we know that:GEN language
'and to whichever people we come, we know the language of it'
(cocathom2,+ACHom_II,_37:275.103.6195)

The availability of pied piping and case determined by the lower clause in left-dislocated structures noted in Allen (1980) is well established. This fits well with the observation of van Riemsdijk that even in languages that do allow non-matching, this tends to be marginal and largely limited to 'ungoverned or at least weakly governed positions' (2006: 352). An examination of OE examples suggests that clauses that are most closely integrated into the matrix clause, such as complements of verb or a prepositional phrase playing the role of verbal complement rather than adjunct, are more likely to have either preposition stranding or case marking determined by the lower clause.

Another type excluded is exemplified by (13), where the subject of an imperative is unexpressed:

(13) Swa hwam swa ðyrste. cume to me.
So whom:DAT as thirst:3sg come to me
'Whoever thirsts, come to me'
(cocathom2,+ACHom_II,_15:155.182.3451)

The dative case of *hwam* in (13) is due to the fact that *þyrstan* ‘to thirst’ takes dative case of the person suffering the thirst. The free relative could be treated as the subject here, but it seems most likely that when spoken, there would be a pause after it, although this is of course not provable. An analysis involving the free relative being in a peripheral position, with the subject of the command left unexpressed, seems plausible. At any rate, similar examples found by the investigation all have the case expected within the relative clause or non-clashing case.

A final exclusion is free relatives with locative or temporal pronouns, e.g. (14):

(14) þæt he orðað þær he wyle
that he breathes where he will
‘that he breathes where he will’
(cogregdH,GD_2_[H]:21.146.9.1432)

These pronouns generally do not bear on the question of what determined the case marking. Furthermore, the locative pronouns *þær* or *hwær* are not helpful in looking at preposition stranding because unlike with other demonstrative pronouns, *þær* could be separated from the preposition governing it, as mentioned in footnote 1. I also culled examples of *be þæs þe* ‘according to what’ and similar fixed expressions from the data.

5. Wh- free relatives

With relative clauses, we are dealing with grammatical relations in two clauses. First, we have the grammatical relation that the relative clause plays within the matrix clause. Second, we have the grammatical relation of the relative pronoun to the verb of the relative clause.

Looking first at the results for *wh-* relatives playing the role of a complement in the matrix clause, we can distinguish between ones in which the relative pronoun plays the role of object of a preposition in the relative clause, and ones in which it plays the role of either

subject, direct object, or indirect object. Relatives playing the role of object of preposition are unlikely to give us evidence on what determines the case marking of the pronoun, because the object of a preposition is always in a non-nominative case and therefore likely to be low on the case hierarchy. This means that if the preposition wants dative case, for example, but the relative pronoun refers to the subject of the relative clause, dative case would not tell whether the hierarchy or assignment by the preposition determined the case. This investigation therefore limited the study of case marking to relative clauses playing the role of subject, object, and indirect object. However, it should be mentioned that the search for *wh-* relatives found an example with a prepositional complement that demands a Head analysis:

(15) Fæder and moder moton heora bearn to swa hwylcum cræfte gedon swa
father and mother must their child to so which:DAT craft put as
him leofost byð
him dearest is
'A father and mother must put their child to whatever craft is most pleasing to him'
(coaelhom,+AHom_20:54.2949)

This example is a good illustration of the fact that the parsing of the York corpora is not intended as a syntactic analysis. Following the parsing guidelines discussed in section 4, *swa hwylcum cræfte* in (15) is treated as internal to FRL. The extraposition of the relative clause past *gedon*, however, makes such an analysis impossible. This extraposition is immediately explained if we assume that *swa hwylcum cræfte swa* resides in the matrix clause, since extraposition of a relative clause away from its head is commonplace in OE. We have here a headed relative clause parallel to *þe* relatives, the only difference being that the indefinite *hw-* determiners require *swa* rather than *þe* in the complementizer position.

Let us turn now to the findings about case marking.

5.1 Case marking of subject, object, and indirect object FRLs

Although the poetry contains left-dislocated and adverbial *wh*- free relatives, the search excluding these only yielded one example of a well-integrated *wh*- free relative:

(16) Hwæt, þæt secgan mæg efne swa hwylc mægþa: swa ðone
lo, that say may even so which:NOM woman GEN.PL as that:ACC
magan cende
son:ACC bore
'lo, whatever woman bore that son may say that'
(cobeowul,30.942.788)

This single poetic example has matching nominative case, so the following discussion of case matching of the *wh*- pivot applies only to the prose corpus.

In the majority of examples, there is no violation of case matching. In many examples, the matrix and lower clause require or at least allow the same case, as with the accusative *hwylcne* in (17):

(17) þæt heo untrume menn mihte gehælan, swa hwylcne swa heo
that she infirm people might heal so which:ACC as she
geneosode licgende on sare.
visited lying in pain
'that she might heal infirm men, whichever she came to lying in pain'
(coaelive,+ALS_[Eugenia]:128.266)

In other instances, the matrix and relative clauses require a different case, but case syncretism makes it unclear which clause is determining the case. Van Riemsdijk notes that the requirement of case matching in languages that have morphological case is in terms of the 'actual morpho-phonological shape of the case form' rather than abstract case features (2006:

357). This means that there is no problem with the large number of examples similar to (18), where the matrix clause requires an accusative object and the relative clause requires a nominative subject, but syncretism has rendered the forms of these cases identical. Such examples have been treated as non-clashing in this investigation.

(18) þurh ðone willan heo wile swa hwæt swa hire licað
through the will it wills so what:NOM/ACC as it:DAT pleases
'through the will it wills whatever pleases it'
(cocathom1,+ACHom_I,_20:342.203.4034)

This example is compatible with any of our three hypotheses about what determines case marking.

When these examples are excluded, are left with only seven unambiguous instances of a case clash between the case required by the matrix clause and the relative clause. The figures are summarized in Table 1.

Table 1. Case marking of *wh-* relative pronoun representing subject or object of free relative

	higher case	lower case	non-clashing
hypothesis-neutral	0	5	64
counter-hierarchy	0	2	-

In all these case-clashing examples, the case is that required by the lower clause, contrary to my claim in Allen (1980). Five of the examples are consistent with both the Lower Case and Case Hierarchy hypotheses, such as (7b) and the examples in (19):

(19) a. gif he him ne sæde swa hwæs swa he axode;
if he him not said as what:GEN as he asked
'If he did not tell him whatever he asked'
(cocathom2,+ACHom_II,_20:176.78.3897)

b. eow sylð min fæder swa hwæs swa ge hine biddaþ
you gives my father so what:GEN as you him:ACC ask
'my father will give you whatever you ask for'
(coaelive,+ALS[Agnes]:319.1938)

The only two examples that test the Lower Case hypothesis against the Case Hierarchy actually go against the hierarchy:[2]

(20) a. he hæfþ hwa him deme,
he has who:NOM him:DAT judges:3SG.PRES.SUBJ
'he has one who judges/will judge: him'
(cowsgosp,Jn_[WSCp]:12.48.6868)
Latin: habet qui iudicet eum
has who:NOM judges:3SG.PRES.SUBJ him:ACC

b. he hæfð witodlice, hwa him deman sceal:
he has truly who:NOM him:DAT judge shall
'he has, truly, someone who will judge him'
(colwgeat,+ALet_6_[Wulfgeat]:216.89)

The hierarchy predicts that the accusative case required by the matrix verb *hæfþ/hæfð* should

[2] Two more examples with this case marking pattern were found by the query, but I believe they should be parsed as indirect questions, rather than free relatives.

win out over the nominative subject of *deme/deman*, but the reverse is true. These examples would be predicted if the case of a *wh*-pronoun in a free relative is determined by the lower clause, without any reference to the proposed case hierarchy. They are furthermore essentially the same example and possibly due to Latin influence, although it should be noted that Ælfric, the composer of the letter containing (20b), did not normally use latinate English that violated the rules of OE grammar, even in translations of the Bible.[3]

To sum up, with free relatives that play the role of subject, object, or indirect object in the matrix clause and have a *wh*-pronoun that also refers to one of these roles of the relative clause, there is no reason to believe that the relative pronoun is ever part of the matrix clause. Matters are different, however, when we turn to the objects of prepositions within the relative clause.

5.2 Preposition stranding and pied piping

Prepositional phrases offer an argument for two structures that is not available for PDE. The reason is that preposition stranding was impossible in OE with movement of an overt pronoun, e.g. in questions. Crucially, stranding is found in free relatives with overt *wh*-pronouns:

[3] For a study of Ælfric's deviations from Latin syntax with determiners, see Allen (2019).

(21) & se þe raþust com on þone mere æfter þæs wæteres
and he that quickest came into the lake after the water:GEN
styrunge wearþ gehæled fram swa hwylcere untrumnysse swa
stirring became healed from so what:DAT illness:DAT as
he on wæs.
he in was
'he who most quickly came into the lake after the stirring of the water was healed from whatever illness he had been in'
(cowsgosp,Jn_[WSCp]:5.4.6063)

Taylor (2014 :476) recognises that examples like (21) with preposition stranding show that her structure in (8) will not account for all examples, and that both 'clause internal' and 'clause external' pivots are needed for OE.

It must be acknowledged that examples of stranding with *wh-* pronouns are not common. No examples are to be found in the poetic corpus, and (21) is the only example in the prose that the queries found of stranding in a *wh-* free relative well-integrated into the matrix clause. However, in the course of eliminating examples that were not well integrated relatives, I also noticed two examples of stranding in an adjunct clause, one of which is given in (22):

(22) and heo gefret softnysse oðde sarnysse, swa hwæðer swa heo on bið
and it feels softness or pain so which as it in is
'and it feels comfort or pain, whichever it is in'
(coaelhom,+AHom_11:216.1603)

These adjunct clause examples with stranding are rather surprising because pied piping was the more common pattern with free relatives not playing a complement role in the matrix

clause.

There are six examples with pied piping in the prose, of which four are presented in (23):

(23) a. ac hi næfdon mid hwam.
but they not.had with what
'but they did not have what (to do it) with'
(cocathom1,+ACHom_I,_12:277.51.2231)

b. Ac ðu findst wið hwone ðu meaht flitan.
But you find with whom you might strive
'But you will find someone to strive against'
(cocura,CP:44.331.5.2234)
Latin: sed contra quos uos ualeatis extendere,
but against who:ACC.PL you manage:2PL.PRES.SUBJ extend:INF
semper inuenitis
always find:2PL.PRES

c. Ic wene þeah þæt þu wille nu cweðan þæt ða welgan
I think though that you will now say that the wealthy
hæbben mid hwam hi mægen þæt eall gebetan.[4]
have with what they may that all remedy
'But I think that you will however now say that the wealthy have the wherewithal to remedy this'
(coboeth,Bo:26.60.12.1117)

[4] Godden and Irvine's (2009) edition indicates that part of this sentence is filled in from the twelfth century manuscript. However, *mid h* is intact in the older manuscript, which is

Latin: sed adest, inquio, opulentis quo
but be:3sg.PRES say:1sg.PRES wealthy:DAT.PL what:ABL
famen satient, quo sitim
hunger:ACC satisfy:3pl.PRES.SUBJ what:ABL thirst:ACC
frigusque depellant
cold:ACC.and drive.away:3pl.PRES.SUBJ

d. þet gif his feond comen upp. þæt hi næfdon na
that if his enemies came up that they not.had nothing
on hwam hi fengon swa rædlice.
on what:DAT they seized so quickly
'So that if his enemies landed, they would not have anything to seize so quickly'
(cochronE,ChronE_[Plummer]:1085.12.2802)

Example (23a), being elliptical, is not entirely convincing, especially since we do not find other examples of pied piping in a well-integrated *wh*- free relative in the rest of Ælfric's very large corpus. Four of the remaining examples come from close translations and may have been the result of a latinate style influenced by the ungrammaticality of preposition stranding in Latin. However, it is worth noting that example (23b) is from a text that sticks close to its Latin model in context, but is almost (but not quite) completely free from such Latin-inspired constructions as the dative absolute, modelled on the ablative absolute, which is found in closer translations from Latin. This particular sentence, however, does follow the Latin syntax closely, and it shows the more relaxed matching effects that van Riemsdijk (2006) noted as permitted in Latin—while the prepositional phrase is selected by the lower clause, it

enough to indicate that the pied piping is not a later addition.

is not selected by the matrix clause. A lack of matching in case is found in (23c). Finally, example (23d), which similarly has an apparent violation of category matching, cannot be explained as Latin influence. It is worth noting that (23d) is from a very late text, in a twelfth century manuscript recording an event of the late eleventh century. With so few examples, it is not possible to know whether these matching constraints became more relaxed near the end of the OE period, or they were subject to personal preference, or what. It is also possible that this example is best analysed as having *na* as the head of a relative clause, since *wh-* words were starting to be used as relative pronouns for objects of prepositions by this time.

To sum up, there are not many examples that decide between the Head and Comp analyses with *wh-* pronouns, but the meagre data supporting one analysis or the other suggest that both are needed. The case marking data suggest that the relative-internal position was preferred, but a couple of examples with preposition stranding indicate that a position in the matrix clause is also needed. It appears that the use of a *wh-* relative pronoun for the object of a preposition was not common. Matters are different with the demonstrative pronouns.

6. Demonstrative pivots

While the evidence suggests that a *wh-* pivot of a free relative in OE could be internal to the relative clause, even if that construction was perhaps a bit on the margins of OE syntax, it is unclear whether this is true of demonstrative pronoun pivots of well-integrated relatives. It is widely accepted that demonstrative pronouns could be external heads in OE, and van Riemsdijk (2006) comments that relative clauses using 'light' heads such as demonstratives are one way of avoiding category matching restrictions in German. However, a difference between OE and German is that in German, it is easy to determine when the demonstrative is a head, because the use of another demonstrative pronoun playing the role of relative pronoun is obligatory:

(24) Ich nehme den, dem du vertraust.
I take that:ACC whom:DAT you trust
'I take the one who you trust' (van Riemsdijk (2006: 356, example 20b; glossing by author)

In OE, however, a second demonstrative pronoun is never used; rather the indeclinable relative particle optionally follows the demonstrative.

Despite this agreement that demonstrative-headed relatives were used in OE, the adoption of the structure in (8) raises the possibility that demonstrative pivots could also be internal to a free relative clause, in the Specifier position, even when followed by *þe*. In this section, I will present data bearing on this question. One reason to look at this question is to compare OE with Gothic, where there is evidence from pied piping for relative clause-internal demonstrative pivots:

(25) ushafjands ana þammei lag
picking.up on what:DAT lie:3SG.PRET
'picking up what he lay on'
Gothic, Luke 5:25 (Harbert 2007: 467 ex. 6.140c)

Harbert (2007: 469) notes that Gothic differs from languages like Modern German, in which, as also noted by van Riemsdijk (2006), neither pied piping nor preposition stranding is possible in the situation of (25), i.e. when the relativized constituent is the object of a preposition but the free relative is the object of the matrix clause. Gothic apparently had more relaxed category matching restrictions than Modern German, both in the matter of case marking and that of syntactic category, although the possibility of translation effects from Greek here cannot be ignored with Gothic.

The following discussion looks first at examples parsed as CP-REL in the *YCOE*, i.e. demonstrative-headed relatives, in section 6.1, then at examples with a demonstrative pivot

parsed as CP-FRL in 6.2.

6.1 Demonstrative-headed relatives

The number of sentences parsed by the *YCOE* and *York Poetry Corpus* as demonstrative-headed relatives is very large, 4452 and 217, respectively. No attempt is made here to examine the case marking of all these examples, but as expected by the analysis of the pronoun as the head, it normally gets the case assigned by the upper clause, as in (26):

(26) Drihten, nu is seoc se ðe þu lufast.
Lord now is sick that:NOM that thou lovest
'Lord, the one whom you love is sick'
(cowsgosp,Jn_[WSCp]:11.3.6683)
Latin: Domine, quem amas, infirmatur
Lord, who:ACC.SG. love:2.SG.PRES be.sick:3SG.PRES

Preposition stranding, as in (11) above and (27), provides solid evidence that the demonstrative pronoun is the head, since pied piping would be required if it were moved from its initial position:

(27) for ðan ðe we nabbað ða ðe he on ðrowade.
for that that we not.have that:ACC that he on suffered
'because we do not have what he suffered on'
(cocathom2,+ACHom_II,_19:175.53.3877)

The queries turned up only two genuine instances of preposition stranding in the 217 poetic examples of demonstrative-headed relatives. In contrast, 81 of the 4452 *YCOE* examples are parsed as having stranding. While some of these prose hits are not true examples of the construction sought, there can be no doubt that preposition stranding was idiomatic in these relatives.

Further evidence that demonstrative pronouns could head relative clauses comes from the fact that extraposition of the relative clause away from its head, parallel to extraposition found with relative clauses with nominal heads, is frequently found:

(28) and ðam wolde don wel þe him wel dyde ær.
and that.one:DAT would do well that him well did earlier
'and would do well to the one who did well to him earlier'
(coaelive,+ALS_[Swithun]:365.4450)

In sum, the general consensus that some demonstrative pronouns at least were (external) heads to relative clauses in OE is well supported by this investigation, both for poetry and prose. Let us turn now to the well-integrated relatives with a demonstrative pronoun parsed as FRL by the *YCOE*.

6.2 FRLs with demonstratives

6.2.1 Case marking

As with the *wh*- free relatives, we want to collect all examples parsed as FRL of the prescribed type, then extract the examples in which there is a case clash. We then look at these examples to determine whether a case-marking hierarchy explains the case used, or whether the case is always simply that governed by the lower clause verb, or selected by the matrix clause.

No examples were found in the poetry of clauses of the prescribed types parsed as FRL with a relative-internal demonstrative pronoun. In contrast, the number of hits that a query looking for all well-integrated free relatives using a demonstrative pronoun in the prose is very large: 699. Most of these are not relevant to the investigation, because they do not involve a clash of case and so are non-diagnostic for the hypotheses. For that reason, a further query was run that excluded *þæt* and *þær* (and their variant spellings) to create output for

investigating case clash.

With these exclusions, the investigation turned up only a relatively small number of examples parsed in the *YCOE* as a free relative with a clause-internal demonstrative pronoun that involve case clash. The results are given in Table 2.

Table 2. Case marking of demonstrative relative pronoun representing subject or object of FRL, prose

	higher case	lower case
consistent with hierarchy or upper case	—	20
counter-hierarchy	0	0
hierarchy or upper case	3	—

In three examples, the winner in the case clash is the matrix clause case:

(29) & he ferde wundrigende þæs þar geworden wæs.
and he went wondering that:GEN there happened was
'and he left wondering at what had happened there'
(cowsgosp,Lk_[WSCp]:24.12.5663)

In (29), the genitive case is due to the matrix verb *wundrigende.* Although the Lower Case hypothesis could work for the *wh*- free relatives, it clearly won't do for the demonstratives parsed as FRL in the *YCOE*. However, this case marking is straightforwardly explained if the demonstrative pronoun is part of the main clause. The lack of a relative particle is no bar to this analysis, since preposition stranding establishes the existence of demonstrative-headed relatives without the relative particle, as will be established in section 6.2.2.

The examples with matrix clause case are also compatible with a clause-internal pivot analysis, with case attraction controlled by the Case Hierarchy.

Let us turn now to the possible examples with lower clause case, five of which are

presented in (30):[5]

(30) a. And eac ic ðe forgife þæs ðe ðu ne bæde. welan and wuldor
and also I thee give that:GEN that you not asked wealth and glory
'and I will also give you what you did not ask for, wealth and glory'
(cocathom2,+ACHom_II,_45:336.34.7542)

b. þone þe þu lufast ys nu geuntrumod.
that:ACC that you love is now sick
'the one you love is now sick'
(coaelhom,+AHom_6:8.864)

c. Læsse lufað þam ðe læsse forgyfen ys.
less loves that:DAT that less given is
'The one who is forgiven less loves less'
(cowsgosp,Lk_[WSCp]:7.47.4196)
Latin: cui autem minus dimmitur, minus
whom:DAT.SG truly less forgive:3SG.PRES.PASS less
diligit
love:3SG.PRES

[5] Note that the examples of (30) all seem to deviate from YCOE's parsing guidelines as set out in section 4, since they have the particle *þe*, and this is true of all but two of the 20 examples with lower case. It seems probable that the reason they have been parsed as CP-FRL rather than demonstrative-headed relatives is precisely because they have the case marking required by the lower clause.

d. ne underfoð ealle men þis word ac þam þe hyt geseald
not receive all men this word but those:DAT that it given
ys.
is
'all men do not receive this word, but those that it is given to'
(cowsgosp,Mt_[WSCp]:19.11.1264)
Latin: Non omnes capiunt verbum istud, sed
not all:NOM receive:3PL.PRES word:ACC this:ACC but
quibus datus est
who:DAT.PL given is

e. Gif ge þonne me seceð, forlætað þonne þas mine geferan
if you then me seek let then these my companions
gangan to ðæs þe hi willen.
go to that:GEN that they will
(coverhomE,HomS_24.1_[Scragg]:105.68)

Not all of these examples are equally convincing as instances of case clash, because in some instances it may be that the case is actually compatible with both verbs, even if not common with the verb of the matrix clause. The genitive *ðæs* in example (30e) is puzzling under any analysis, since I am not aware of any other examples in which a free relative is the object of a preposition and the pronoun does not have the case that preposition would assign.[6] If we

[6] There are some such examples with *butan* 'but', which governs the dative case but sometime shows up with a nominative pronoun following it, but this is presumably because *butan* could also be a complementizer.

assume that this example is not simply some sort of error and also assume that *ðæs* is interanal to the free relative, it would be an instance of what van Riemsdijk (2006: 359) calls 'upward' case attraction, in which head of a relative clause is attracted into the case expected of the lower clause. The *ðæs* would be due to the fact that *willan* could take a genitive object. Van Riemsdijk says that although such upward attraction is occasionally found in Classical Greek and Latin, it is not common cross-linguistically. However, the most likely explanation seems to be that *ðæs* is a mistake for *ðær* 'there', in which case there is no case clash. Note also that Scragg's (1992) edition indicates that another manuscript containing this homily has the more expected *swa hwider swa* 'wherever'.

Although some of the examples with lower clause case can be explained away, there remain several solid ones. These examples are obviously incompatible with my claim in Allen (1980) that the case was always that required by the matrix clause. In contrast, they are compatible with the Case Hierarchy hypothesis.

However, it is still worth considering the hypothesis that with demonstrative pivots, the demonstrative is always the head of an ordinary relative clause, given that there is independent evidence for demonstrative-headed relatives and this is clearly the dominant construction with demonstratives. By this analysis, the examples of lower clause case would have to be treated as 'upwards' case attraction.

Because of the possibility of case attraction, the case marking facts give no decisive evidence that the demonstrative pronoun is ever in clause-internal position of the relative clause. The relativized objects of prepositions have the potential to provide more decisive evidence on the position(s) occupied by the demonstrative pronouns, a matter to which we now turn.

6.2.2 Pied piping and preposition stranding

When we turn to well-integrated relatives parsed as FRL in the York corpora, we find no examples of preposition stranding in the poetry but 13 instances in the *YCOE*. One of these has already been presented in (10), and another is given in (31):

(31) ne nan man eac ne begit þæt he æfter ne swincð.
nor no man also not obtains what:ACC he after not labours
'nor does any man obtain what he does not labour for'
(coboeth,Bo:33.76.24.1436)

These examples answer the question about whether the type with a demonstrative pivot and no relative particle must ever be parsed as demonstrative-headed relatives: yes, at least sometimes they must, since preposition stranding is incompatible with the movement of the pronoun demanded by the clause-internal analysis.

If we find no examples of pied piping with demonstrative pivots, then there is no compelling reason to assume a clause-internal analysis of the pronoun. However, we do find four instances of pied piping with a demonstrative pivot:[7]

[7] The query used as the basis for the pied piping and preposition stranding searches differs from the query forming the basis of the case matching inquiry in including the pronouns excluded from the latter search.

(32) a. Ðes is be þam þe awriten is,

This is about whom:DAT that written is

‘This is the one about whom it is written…’

(cowsgosp,Lk_[WSCp]:7.27.4150)

Latin: Hic est de quo scriptum est

This is about whom:ABL.SG written is

b. Þes is be ðam ic sæde,

this is about whom:DAT I said

‘This is the one about whom I said…’

(cowsgosp,Jn_[WSCp]:1.30.5791)

Latin: Hic est de quo dixi

This is of whom:ABL.SG say:1SG.PRET

c. Zosimus þa hine soðlice forð astrehte on þa floras cyssende

Zosimus then him:ACC truly forth stretched on the floors kissing

on þæt hire fet stodon God wuldrigende and miccle þancas

on what:ACC her feet stood God praising and great thanks

donde;

doing

‘Zosimus then truly stretched himself forth on the ground kissing what her feet had stood on, praising God and giving great thanks’

(comary,LS_23_[MaryofEgypt]:638.417)

Latin: Zosimus autem prosterens se osculabatur
Zosimus truly prostrating himself:ACC kissed:3SG.IMP
terrae solum in quo eius uestigia
earth:GEN ground:ACC in which:ABL her footprints:NOM
steterant
had.stood

d. Æfre he mæig findan, on ðam he mæig nyt beon
Ever he may find in that:DAT he may useful be
'He may always find that in which he may be of use'
(colawger,LawGer:8.21)

None of these examples is terribly convincing as evidence that pied piping was idiomatic with demonstrative pivots of free relatives. Three of the examples are close translations from Latin, a language more tolerant of non-matching cases and syntactic categories than are German and Dutch (van Riemsdijk 2006). Examples (32a,b) are from the gospel of John, and both are a close rendering of the Latin. Taylor (2008) concluded that for the feature she studied at least, translations from the Bible showed stronger Latin influence than other translations. The West Saxon Gospels are not a slavish translation or anything approaching word-for-word glossing, but they contain Latinate constructions, such as the dative absolute in translations of the Latin ablative absolute, that are not found in OE poetry. They generally may stretch OE syntax a bit but not do not seriously violate it. The best conclusion seems to be that such pied piping was at the margins of OE syntax, but were not absolutely ungrammatical. It is interesting to note the contrast between the Gothic example in (25) and the preposition stranding in (10), the OE version of the same verse. It is clear that the scribe or scribes translating the Bible did not always follow the Latin syntax in favour of a more idiomatic OE construction, since the Vulgate has pied piping in *tulit, in quo iacebat* 'carried,

on what:ABL he lay'. However, it can be noted that this is the only example of preposition stranding in with a demonstrative pivot parsed as being in a free relative in the gospels.

Example (32c) is from a hagiography which, according to Magennis (2002: 44), sometimes renders the Latin in a word-for-word manner. Although this is not such a close gloss, it seems likely that the pied piping in the Latin prompted its use in the OE.

Example (32d) does not seem to be due to Latin influence, but it is worth noting that it is from a copied manuscript of the early twelfth century, and Wormald (1999: 236) opines that the manuscript was copied by somebody 'not competent to do so.' Taken in isolation, a single example that may involve mis-copying cannot be taken as convincing evidence that pied piping was a possibility with demonstrative pivots of well-integrated free relatives. On the other hand, pied piping was clearly possible in less well-integrated free relatives and seems to have been extended a couple of times to well-integrated ones by the translator of John. It cannot therefore be entirely ruled out that demonstrative pivots could be internal to a free relative clause, but it is at least clear that demonstrative-headed relatives were by far the favoured construction.

7. Conclusion

This paper has re-examined the evidence concerning two matching effects of free relatives in OE. The first is the case of the pronoun, and the second is the treatment of the object of a preposition when it was the relativized constituent. In addition, the paper makes some observations on the possibility of Latin influence in a few examples that run counter to the most frequent patterns.

The syntax of free relatives in OE is relevant to both the study of OE syntax and the reconstruction of Common Germanic syntax. An accurate empirical base is essential to such study, and this paper has offered more detailed data than have previously been available,

updating the flawed data of Allen (1980), which has been used in fairly recent discussions, and making a finer differentiation between different constructions than has hitherto been reported. This investigation has furthermore made a distinction between poetry and prose not made in previous work.

This investigation provides evidence supporting Taylor's (2014) proposal that the facts require the assumption that both relative-internal and relative-external pronouns were used in OE free relatives, and against Allen's suggestion that only the relative-external construction was used. It has also revealed a sharp difference between free relatives using a demonstrative pronoun and those with a *wh*- pronoun. With the latter, the evidence suggests that the relative-internal position was the favoured one for the pronoun, with the relative-external structure used only when the clause played the role of object of preposition in the matrix clause. As previously recognized, a case hierarchy regulates the (optional) application of case attraction. However, the hypothesis that the case marking of a pronoun in a free relative in OE is always controlled by the case hierarchy is shown not to account for the data.

The need to assume external heads as a possibility for the *wh*- free relatives is of theoretical interest, given the current widespread assumption that only clause-internal pronouns are possible with free relatives. It is well known that languages can use 'light heads' such as demonstrative pronouns to avoid violations of matching constraints, but in our current state of knowledge, OE seems unusual in employing *wh*- pronouns in this way for the objects of prepositions. Our knowledge of the syntax of free relatives is based on a fairly small number of languages, and more cross-linguistic research is needed to establish how unusual a situation the OE one is.

In contrast to the *wh*- free relatives, in the vast majority of examples with a demonstrative pivot of a well-integrated relative clause, there is no compelling reason to treat the pronoun as internal to the relative clause. There is general agreement on a demonstrative-

headed analysis for most of the examples involving a demonstrative pronoun, as is reflected in the York corpora's parsing of only a small number of such examples as FRL. Given this fact, extending the demonstrative-headed analysis to all demonstrative pivots is attractive. Such an analysis would account for the small number of examples with lower clause case as case attraction.

However, a very small number of prose examples of pied piping with the demonstratives suggests that while they may not have been completely idiomatic, relative-internal demonstrative pivots did not violate OE grammar. It seems likely that Latin influence played a role in most of these unusual examples, but there is insufficient evidence to be certain.

The poetry gives no evidence at all that a clause-internal analysis is needed for the pivots well-integrated free relatives. It could be that the near complete absence in the poetry for well-integrated internally-headed free relatives with either *wh-* or demonstrative pivots reflects an earlier situation in which such relatives did not exist, and they only became a possibility when scribes familiar with Latin patterns extended internally-headed relative clauses to demonstrative pivots, but this is speculative, and a larger corpus of poetry might find more examples.

The prose investigation confirms the basic distinction Allen (1980) made between the patterns found in left-dislocated free relatives and ones integrated into the matrix clause. Presumably the reason internal pivots are so frequent in the less integrated free relatives is that these relatives can have the distribution of either NPs or clauses, and in the latter case the pronoun in the Specifier of the relative clause. Again, this suggestion is speculative, but it could be that the use of internally-headed free relatives in positions not well-integrated into the matrix clause spread into more integrated positions.

In addition to correcting the data provided by Allen (1980), this investigation adds to our knowledge of a small corner of OE syntax and updates the discussion of possible analyses in

light of more recent developments in syntactic theory. The finding that OE did not use the case hierarchy in quite the same way in free relative clauses in OE as has been claimed for Gothic is relevant to the comparative study of the early Germanic languages. OE also differed from Gothic in the typical behaviour of demonstrative pivots. Further comparison with other early Germanic dialects is needed, as well as an investigation into the possible role of translation effects in the Gothic examples.

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YCOE= Pintzuk, S. & L. Plug. 2002. The York-Helsinki Parsed Corpus of Old English Poetry (*YCOE*), Department of Linguistics, University of York, Distributed by the Oxford Text Archive, first edition, (http://www-users.york.ac.uk/~lang18/pcorpus.html).

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Appendix: sources and queries

The queries used in this research were applied to all texts of the *York Poetry Corpus*, but three of the *YCOE* texts were excluded from this investigation. These texts, listed in Table 3 below, are the texts of MS Cotton Vespasian D.xiv identified by Clemoes (1997: 17) to be of probable twelfth century origin, in contrast with the copied texts in that manuscript, belong to the study of Early Middle English, not OE.

Table 3. *YCOE* texts not used in this investigation

coeluc1
coeluc2
coneot

Some of the *YCOE* files contain different versions of the same text. For such texts, duplicate examples were counted only once. The node is set at IP* for all queries.

I. Queries used in investigation *wh*- free relatives

1. Query looking for all integrated *wh*- FRLs, excluding some common non-diagnostic forms
(IP* doms !CP-FRL-LFD*|CP-FRL-LOC*) AND (IP* dominates CP-FRL*) AND (CP-FRL* doms WNP*) AND (WNP* idoms WPRO*|WA*) AND (WNP* doms !hw+ar|hw+at)

2. Query run on output of 1, to look for stranded prepositions
(IP* dominates CP-FRL*)
AND (CP-FRL* doms PP*) AND (PP* idoms NP*) AND (NP* idoms **) AND (PP* doms !CP-REL*)

3. Query run on .cmp output of 2, to look for pied-piping
(IP* dominates CP-FRL*) AND (CP-FRL* idoms WPP*)

4. Query run on .cmp output of 3, to look for case clashes
(IP* dominates CP-FRL*)

II. Queries used in the investigation of sentences parsed as free relatives with a demonstrative pronoun

1. (IP* doms !CP-FRL-LFD*|CP-FRL-LOC*) AND (IP* dominates CP-FRL*) AND (CP-FRL* idoms WNP*|WPP*) AND (WNP*|WPP* doms dem_freerel_pro)

Definition of dem_freerel_pro:
+d+as|+t+as|+d+am|+t+am+|$+t+am|$d+am|+tam|+t+are|+d+are|+tara|+dara|$+t+are|$+d+are|+tone|+done|+t+ane|+d+ane|+ton|+don|+tane|+dane|+d+arre|+D+as|+T+as|+D+am|+T+am+|+Tam|+T+are|+D+are|+Tara|+Dara|+tone|+Done|+T+ane|+D+ane|+Ton|+Don|+Tane|+Dane|$+t+as|+t+ara|+T+ara|+T+ARA|$+T+AS|$+tone|+tonne|$+tonne|+tene|+dam|se*|si*|$se|$si|+ta|+da|$+ta|$+da|+Ta|+Da|$+Ta|$+Da|+t+atte|+d+atte|+t+at|+d+at|$+t+at|$+t+atte|$+d+atte|$d+at|$+t+at

2. The same query looking stranded prepositions as in I.2 above was run on the output of II1.

3. The same query looking for pied piping in I3 was run on the .cmp output of II2.

4. Query run on the .cmp output of 3 to look for case clashes:
(IP* dominates CP-FRL*) AND (IP* dominates !CP-FRL-ADT*|CP-FRL-TMP*) AND (CP-FRL* dominates WNP*) AND (WNP* dominates dem_freerel_restricted)

Definition of dem_freerel_restricted:
+d+as|+t+as|+d+am|+t+am+|$+t+am|$d+am|+tam|+t+are|+d+are|+tara|+dara|$+t+are|$+d+are|+tone|+done|+t+ane|+d+ane|+ton|+don|+tane|+dane|+d+arre|+D+as|+T+as|+D+am|+T+am+|+Tam|+T+are|+D+are|+Tara|+Dara|+tone|+Done|+T+ane|+D+ane|+Ton|+Don|+Tane|+Dane|$+t+as|+t+ara|+T+ara|+T+ARA|$+T+AS|$+tone|+tonne|$+tonne|+tene|+dam|se*|si*|$se|$si|+ton|+don|$+ton|$+don|+ty|$+ty|+dy|+$dy

III. Queries used in the investigation of sentences parsed as having relative clauses with a demonstrative pronoun as head

1. Query looking for all demonstrative-headed relatives
(NP* idoms D^*) AND (NP* idomsnumber 2 CP-REL*)

2. Query looking for preposition stranding in demonstrative-headed relatives
(NP* idoms D^*) AND (NP* idomsnumber 2 CP-REL*) AND (CP-REL* doms WNP*) AND (CP-REL* doms PP*) AND (PP* doms **) AND (CP-REL* dominates !CP-REL|CP-REL-SPE*|CP-CMP*|CP-THT-PRN*)

3. Query run on .cmp output of 2 to find pied piping
(NP* idoms D^*) AND (NP* idomsnumber 2 CP-REL*) AND (CP-REL* idoms WPP*)

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