

Head-Internal Relative Clauses in Dutch?

Mark de Vries

1. Introduction

In Dutch, relative clauses are postnominal (as in English). Therefore, the existence of the two constructions illustrated in (1a/b) is remarkable:

- (1) a Welke *onverlaat* zoiets doet, krijgt straf.
which miscreant such.a.thing does, gets punishment
'Whichever miscreant does such a thing will be punished'
b "In de ban van de ring", welk *boek van Tolkien* zeer populair is, is verfilmd.
'in the spell of the ring', which book by Tolkien very popular is, has.been filmed
' "The lord of the rings", which book by Tolkien is very popular, has been filmed.'

There seems to be an internal head NP *onverlaat* in (1a), where the subject looks like a free relative. In (1b), which contains an appositive (= non-restrictive) relative, there is an additional internal head NP *boek van Tolkien* next to the antecedent "*In de ban van de ring*". Henceforth, I will refer to these constructions as the Head-Internal Free Relative (HIFR) and the Head-Internal Appositive Relative (HIAR), respectively. We will see that they are closely related.

As far as I know, head-internal relatives in Dutch have not been discussed before in the literature. Therefore, let us examine their properties here. I will show that the HIFR and HIAR neatly fit into the Dutch system of relativization. They cannot be directly related to the more exotic circumnominal and correlative head-internal constructions, which can be found in e.g. Quechua resp. Hindi.

2. Free relatives with an internal head

2.1. Introductory examples

Let me start by presenting some examples of HIFRs, which – as any relative clause – can be used at every argument position; see e.g. (2):

- (2) a Welke student ook maar spiekt bij het tentamen, zal gestraft worden.
 which student NPI copies at the examination, will punished be
 ‘Whichever student copies at the examination, will be punished.’
 b Ik lees welk boek me ook maar onder ogen komt.
 I read which book me NPI under eyes comes
 ‘I read whichever book I get a look at.’
 c Ik ga naar welk museum ze me ook maar aanraadt.
 I go to which museum she me NPI recommends
 ‘I go to whichever museum she recommends (to me).’
 d Hij eet taart bij welke gelegenheid zich ook maar voordoet.
 he eats cake at which occasion SE NPI occurs
 ‘He eats cake at whichever occasion occurs.’

Observe that the internal role of the head NP is independent of the external role. For instance, in (2d) *welke gelegenheid* is a subject in the subordinate clause, but the whole relative construction is an adverbial prepositional object in the matrix.

There are four ways to build a restrictive relative construction, namely as a normal headed restrictive, as a semi-free relative, as a free relative, and as a head-internal free relative; this is illustrated in (3):

- (3) a de man die zoiets doet [RRC]
 the man who such.a.thing does
 b hij/degene die zoiets doet [semi-FR]
 he/the one who such.a.thing does
 c wie zoiets doet [FR]
 who such.a.thing does
 d welke vent zoiets doet [HIFR]
 which fellow such.a.thing does

As is well-known, the first two types pattern alike, but free relatives behave differently in some respects. Below we will see that the HIFR is a special instance of a free relative. Notice that a semi-HIFR cannot be construed: **degene welke vent...* ‘*the-one which fellow...’. In order to explain it, we must know more about the syntax of free relatives and internal heads. First, however, it is useful to examine the meaning of (free) relatives.

2.2. Universal interpretation

An important difference between headed and free relatives lies in the semantics of the constructions. A free relative always has a definite or universal interpretation, but a headed relative can also be indefinite (see e.g. Jacobson 1995). Therefore, *wie* in *wie zoiets doet* (3c) refers to a specific person or a person in general, but not to an unidentified individual. In other words, the relative pronoun can be related to the determiners *the* and *all*, but not *a*. This can be tested in a presentative context, which normally requires an indefinite subject; see (4):

- (4) a Er verscheen een/*de/*elke man die een zwarte cape droeg in de deuropening.
there appeared a/*the/*every man who a black cape wore in the doorway [RRC]
b * Er verscheen wie een zwarte cape droeg in de deuropening.
int. 'There appeared who a black cape wore in the doorway.' [FR]

The explanation for the restricted interpretation of free relatives is that a semantic 'maximalization operation' takes place in some *wh*-constructions, including FRs; see Rullman (1995) and Grosu & Landman (1998). In informal terms, the idea is as follows. First note that a free relative is a nominalized clause, and functions as a full argument; therefore it is commonly analysed as [D CP], where D is usually abstract. The meaning of a restrictive relative is constructed by set intersection of the properties of the head and the predication. In a free relative the maximum of the individuals in this set is selected. The external determiner quantifies over this set maximum. If originally the set contains only one member, we obtain a definite interpretation. A larger set gives a universal reading, namely the combined members. An indefinite reading is impossible, since the individual members of the set are not accessible anymore after maximalization.

Grosu & Landman (1998:148) state the following generalization: 'if the head [of a relative construction] is semantically CP-internal, no semantically independent CP-external material is allowed'. The head of a free relative is semantically internal, since the antecedent is implied in the relative pronoun. As there is an external determiner, maximalization must take place. Namely, in constructions where there is maximalization, the one-to-one correspondence between the external determiner and the set-maximum mentioned ensures that the external material is not independent. On the other hand, if there is a semantically external head NP, as in normal headed restrictive or appositive relatives, there is no need for maximalization, according to Grosu & Landman's generalization.¹

Let us consider how head-internal free relatives are interpreted. It turns out that their semantics is even more restricted than that of free relatives. The examples in (5) and (6) show that only a universal interpretation is available.²

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- (5) a Welke bakker zo'n grote winkel heeft, zal vast wel witbrood verkopen. [univ]
 which bakery such-a big store has, will probably white-bread sell
 'Whichever bakery has such a big store probably sells white bread.'
 b * Welke bakker hier op de hoek zit, zal vast wel witbrood verkopen. [def]
 int. 'Which bakery is here at the corner, probably sells white bread.'
- (6) a Je behoort geld te geven aan welke bedelaar je ook maar ziet. [univ]
 You ought money to give to which beggar you NPI see
 'You ought to give money to whichever beggar you see.'
 b * Ik gaf twee euro aan welke bedelaar ik vandaag bij de supermarkt zag. [def]
 int. 'I gave two euros to which beggar I saw today at the supermarket.'

I think the explanation is straightforward. Because of the internal head, maximalization is necessary. Furthermore, *welke* is a dependent relative pronoun, and the phrase *welke NP* 'which NP' presupposes a group of NPs. As a consequence, the set-maximum will be established on the basis of more than one member; hence the possibility of a definite reading disappears.

2.3. *Pied piping*

A further difference between headed and free relatives is related to pied piping. In De Vries (2004) it was concluded that pied piping is generally impossible in free relatives, contrary to the situation in headed relatives; cf. Bresnan & Grimshaw (1978) and Smits (1991).³ Some examples are given in (7/8):

- (7) a De man *met wie* ik gesproken had, vertrok. [RRC]
 the man with whom I spoken had, left
 'The man with whom I had spoken left.'
 b * *Met wie* ik gesproken had, vertrok. [FR]
 int. 'With whom I had spoken, left.'
- (8) a Anna groette de man *met wiens broer* ze gesproken had. [RRC]
 Anna greeted the man with whose brother she spoken had
 'Anna greeted the man with whose brother she had spoken.'
 b * Anna groette *met wiens broer* ze gesproken had. [FR]
 int. 'Anna greeted with whose brother she had spoken.'

A universal reading cannot save (7b/8b). (This reading can be facilitated by adding *ook maar*.) Therefore it comes as no surprise that pied piping in HIFRs is blocked as well; see (9/10):⁴

- (9) a Elke vijand *met wie* je de degens kruist, zal proberen je te vermoorden. [RRC]
 every enemy with whom you the swords cross, will try you to kill
 'Every enemy with whom you cross the sword will try to kill you.'
 b * *Met welke vijand* je ook maar de degens kruist, zal proberen je te vermoorden.
 int. 'With whichever enemy you cross the sword, will try to kill you.' [HIFR]

- (10) a Anna groette elke man *met wiens broer* ze ooit gesproken had. [RRC]
 Anna greeted every man with whose brother she ever spoken has
 'Anna used to greet every man with whose brother she had ever spoken.'
 b * Anna groette *met welke mans broer* ze ooit ook maar gesproken had. [HIFR]
 int. 'Anna used to greet with whichever man's brother she had ever spoken.'

This leaves us with the following questions:

- (11) a *Why is pied piping impossible in free relatives, including HIFRs?*
 b *Why does the ban on pied piping not affect the internal head in HIFRs?*

Consider the syntactic structure of the left periphery of a free relative. As stated before, a free relative is a nominalized clause. This is represented by the structure $[_{DP} D CP]$. Within the embedded clause a relative pronoun is fronted (*wh*-moved). According to Bianchi (1999), a relative pronoun is a special type of determiner, say D_{rel} . As any determiner, it is the head of a complete nominal group: $[_{DP-rel} D_{rel} NP]$. Thus we have (12):

- (12) [_{DP} D [_{CP} [_{DP-rel} D_{rel} [_{NP} N]]_i ... t_i ...]]

In a free relative, the antecedent is included in the relative pronoun. For example, the free relative pronoun *wie* ‘who’ has a triple function; it stands for *the/any person who*. This can be established by combining the elements D, D_{rel} and N; see also De Vries (2002a, 2004). In (13), the syntactic relation between them (head movement) is indicated by arrows.

- (13) $[_{DP} D [_{CP} [_{DP-rel} D_{rel} [_{NP} N]]_i \dots t_i \dots]]$.

From the structure in (12/13) it is immediately clear what the position of an internal head in a HIFR is; see (14):

- (14) $[_{DP} D [_{CP} [_{DP-rel} welke [_{NP} onverlaat]]_i \dots t_i \dots]] \dots$

Here, too, D_{rel} *welke* must be related to the external D. This explains why the external DP takes over the ϕ -features (person, number, gender) of the internal DP. Furthermore, it explains why the external D cannot be spelled out independently from D_{rel}; see (15):

- (15) * {De(gene), deze, hij, elke} welke idioot zoiets hardop zegt, is gek!
int. ' {The (one), this, he, every} which(ever) idiot says such a thing aloud, is crazy.'

Finally, the ban on pied piping in free relatives can be explained. If there is pied piping, the fronted DP_{rel} would be embedded in a larger constituent XP (usually a PP). But then the relation between D and D_{rel} would have to cross an intervening head, which is a violation of a generally endorsed locality constraint; see (16).

$$(16) * [_{DP} D [_{CP} [_{XP} X [_{DP-rel} D_{rel} NP]]_i \dots t_i \dots]]$$

The diagram shows a tree structure where a line connects the D in the outer DP to the D_rel in the inner DP-rel. This line crosses over the X in the XP, which is marked with an 'X' to indicate a violation of a locality constraint.

Notice that the internal head NP does not intervene between D and D_{rel} . This answers the question in (11b): as the head NP is inside DP_{rel} , it is automatically pied piped without causing any problem for external relations.

2.4. A brief comparison with circumnominal relatives and correlatives

From a cross-linguistic perspective we know that the position of a relative head NP varies with respect to the relative clause. For example, Dutch and English are head-initial, but Japanese and Turkish are head-final. Interestingly, there is also a head-internal (i.e. circumnominal) strategy $[_{RC} \dots \text{head} \dots]$, e.g. in Quechua, Tibetan and Lakota. Circumnominal relatives are nominalized, and they occur at DP-positions. An example from Dagbani (a Gur language spoken in Ghana) is given in (17), taken from Lehmann (1984:117).⁵

- (17) A mi [o nɔ ti saan-so lɔgri] la
 you know he SR give stranger-SPEC/LEV money PTL
 'You know the stranger whom he gave the money.'

Although (17) contains an internal head, it is clearly different from the Dutch HIFR: there is no relative pronoun and the head NP is not fronted within the relative clause; furthermore, the interpretation in this example is definite, whereas a HIFR is always universal.

Another candidate for comparison is the so-called correlative construction used in e.g. Hindi, Tamil and Kala Lagaw Ya (Mabuiag). A Hindi example is (18), taken from Mahajan (2000).⁶

- (18) [jo a:dmi: si:ta:-ko pasand h•] mujhe vo acc^ha: nah•: lagta:
 REL man Sita-DAT love be-PRES I=DAT DEM nice not seem-IMP
 lit. 'Which man Sita loves, to me he seems not nice.'
 'I don't like the man who Sita loves.'

In this case there is a relative pronoun that is fronted together with the internal head.⁷ However, there are substantial differences with the HIFR construction, again. The interpretation of a correlative can be definite, as in (18). Furthermore, Keenan (1985:164) stresses that a correlative clause is not nominalized, as there is never an external determiner, Case ending or affixed adposition. It does not

occur in argument positions, but sentence-initially. The open spot in the matrix is occupied by a demonstrative or personal pronoun.

An overview of some important properties of free relatives, HIFRs, correlative and circumnominal relatives is given in Table 1.

Table 1. *Properties of free and head-internal relative constructions*

	<i>FR</i>	<i>HIFR</i>	<i>correlative</i>	<i>circumnominal</i>
meaning	univ/def	universal	univ/def	univ/def/(indef)
subordinate clause nominalized	yes	yes	no	yes
position relative clause	DP-position	DP-position	sentence-initial	DP-position
resumptive pronoun in matrix	no	no	yes	no
relative pronoun	yes	yes	yes	no
preposing of head NP	yes	yes	yes	no
pied piping	no	no	yes?	d.n.a.

From the table it can be concluded that the HIFR in Dutch is a special type of a free relative, although it is superficially reminiscent of other head-internal constructions such as the correlative or circumnominal relative construction.

3. Appositive relatives with an additional internal head

3.1. *Introductory examples*

The second construction announced in the introduction is the HIAR. An example is given in (19).

- (19) Ze zwaaide naar Joop, *welke stakkerd* zijn been had gebroken bij het skieën.
 she waved at Joop, which wretch his leg had broken at the skiing
 ‘She waved at Joop, which wretch had broken his leg during skiing.’

The internal head NP is preceded by the real antecedent. One of the reasons that the HIAR sounds special is that anaphora by a full noun phrase is unusual; normally we use a pronoun. Therefore, the way of referring is to be compared to e.g. (20):

- (20) *De inbreker* sloop de donkere kamer binnen, maar *de oen* was z’n zaklamp vergeten.
 the burglar sneaked the dark room into, but the blockhead had his flashlight forgotten
 ‘The burglar sneaked into the dark room, but the blockhead had forgotten his flashlight.’

The sentence in (19) can be paraphrased similarly:

- (21) Ze zwaaide naar Joop. *De stakkerd* had zijn been gebroken bij het skieën.
 ‘She waved at Joop. The wretch had broken his leg during skiing.’

In each case the second noun phrase (the epithet) represents a property of the first: the burglar is a blockhead, Joop is a wretch, etc.

Furthermore, a remarkable property of appositive relatives is that they can take antecedents of any category, contrary to restrictives. It turns out that this is the case for HIARs as well; see (22):

- (22) a De aarde is bolvormig, *welk feit* reeds lang bekend is. [CP]
 the earth is spherical, which fact already long known is
 b Ze vindt Joop aardig, *welke eigenschap* ik hem bepaald niet toe zou dichten.
 she regards Joop nice, which property I him certainly not would ascribe [AP]
 c Joop zat in de tuin, *op welke plek* hij graag vertoeft. [PP]
 Joop sat in the garden, at which place he gladly stays

In short, next to the HIFR Dutch has the HIAR, which is a special variant of an appositive relative.

3.2. Differences with HIFRs and restrictive relatives

Although appositive relatives can have an additional internal head, (23) shows that it is completely impossible in restrictives:

- (23) a * Ze zag een man *welke stakkerd* zijn been had gebroken.
 int. 'She saw a man which wretch had broken his leg.'
 b * Ze las een boek *welke roman* door Reve was geschreven.
 int. 'He read a book which novel was written by Reve.'

This will be explained in the next section.

There are also differences between the HIAR and the HIFR. Recall from Section 2.2 that HIFRs cannot have a definite interpretation. The HIAR in e.g. (19) above, however, is clearly definite. The reason is that there is no maximalization in appositive relative constructions, as there is a semantically and syntactically external head NP, i.e. the real antecedent (*Joop* in (19)). Secondly, Section 2.3 showed that there cannot be pied piping in HIFRs, but this restriction does not apply in HIARs; see (24):

- (24) a "De avonden", *aan welk boek van Reve* vaak gerefereerd wordt, is herdrukt.
 'the evenings", to which book by Reve often referred is, has.been reprinted
 b De geoloog benadrukte dat de aarde bolvormig is, *over welk feit*
 the geologist emphasized that the earth spherical is, of which fact
 geen van de aanwezigen recentelijk had nagedacht.
 none of the persons.present recently had thought

The reason is again the presence of an external antecedent. There is no implied antecedent, and therefore no syntactic relation $D_{rel} \rightarrow D$, as defined in Section 2.3. As a consequence, a pied piped preposition is harmless.

The question that remains to be answered is why an internal head is possible in appositive relatives as well as free relatives, but not in normal (headed) restrictive relatives. This is the subject of the next section.

3.3. *Head raising and specifying coordination*

According to the ‘raising analysis’ (developed by Vergnaud 1974, Kayne 1994, Bianchi 1999, De Vries 2002a), the structure of a restrictive relative is (25):

- (25) $[D_{CP} [D_{DP-rel} NP D_{rel} t_{np}]_i \dots t_i \dots]$

The head NP is generated within the relative clause and consequently ‘raised’. A relative pronoun is a determiner generated in combination with the head NP: a ‘relative determiner’ D_{rel} . Notice that the external determiner D takes scope over the restrictive relative clause. For instance, *all cats who like meat* must have the bracketing [all [cats who like meat]], not [[all cats] who like meat].⁸ The latter possibility is correct for appositive relatives, though.

The raising analysis is supported by three types of evidence: theoretical (antisymmetry, no right-adjunction), cross-linguistic (it generalizes over different types of relative constructions, including circumnominal relatives and degree relatives), and empirical (connectivity effects between the head NP and the gap). An example of the last type is given in (26), where the local anaphor *zichzelf* is embedded in the head NP; it is bound by the subject of the relative clause *Joop*.

- (26) De [verhalen over zichzelf]_i, die_i Joop_k gisteren hoorde, waren pure leugens. [RRC]
the stories about SE-SELF that Joop yesterday heard, were mere lies
‘The stories that Joop heard about himself yesterday were mere lies.’

Since the relative pronoun *die* has another referent, it cannot replace *zichzelf* for the binding relation. Therefore, the head NP itself must be reconstructed into the position of the gap, where it is c-commanded by *Joop*.

Let us return to the issue of internal headedness. The structure in (25) straightforwardly explains why there cannot be an additional internal head in normal restrictive relatives: there is simply no room for it, because the only relevant NP position is already occupied by the actual antecedent.

In free relatives the head NP is empty. Therefore, it can in principle be filled, which gives the HIFR, as explained in Section 2 above. In appositive relatives the situation is different again. Importantly, the raising analysis is not supported for appositives: empirically, there are no attested connectivity effects (cf. Bianchi 1999); cross-linguistically, it seems that there are no true internally headed appositive relatives (cf. Lehmann 1984, Grosu & Landmann 1998). Thus, the antecedent of an appositive relative is external to it. Since the position of the

gap in the relative clause represents a full argument (DP) position, there is room for an additional internal head, in principle; this gives the HIAR.

Now we predict the following with respect to connectivity effects. In restrictive relatives, reconstruction of the head NP is possible because of ‘raising’, as shown in (26) above. In normal appositive relatives, reconstruction is impossible because there is no raising of the overt antecedent. In a HIAR, however, the additional internal head can be reconstructed because it is pied piped with the *wh*-moved relative pronoun. This is shown by means of anaphor binding in (27):

- (27) a ?* Deze verhalen over zichzelf_i, die Joop_i gisteren toevallig had gehoord,
 waren pure leugens. [ARC]
 int. ‘These stories about himself, which Joop happened to hear yesterday,
 were mere lies.’
 b ‘De ochtenden’, welke roman over zichzelf_i Joop_i aan het schrijven is,
 kan men niet als bijster origineel beschouwen. [HIAR]
 ‘ ‘The mornings’, which novel about himself Joop is writing,
 can be regarded as none too original.’

In (27b) *zichzelf* is bound by the subordinate clause subject *Joop*.

In previous work (e.g. De Vries 2002a) I have argued that an appositive relative clause is in fact a complex apposition, coordinated to its antecedent. If this is correct, the HIAR has the structure in (28):

- (28) [_{CoP} [_{DP} antecedent] &: [_{DP} D [_{CP} [_{D_{rel}} NP]_{wh} ...t_{wh} ...]]]

Here the head &: of the coordination phrase CoP symbolizes ‘specifying coordination’, a connection (often asyndetic) meaning ‘namely/or/that is to say’; cf. Koster’s (2000) ‘colon phrase’. For instance, DP_{ant} could be “*De avonden*”, D_{rel} the relative pronoun *welk* and NP the additional internal head *boek van Reve*. (D is abstract.)

The reader will have noticed that the second conjunct in (28) equals the structure we assumed for the HIFR in Section 2.3. This is an important result. In general, an appositive relative is a (semi-)free relative in apposition to its antecedent. In particular, the HIAR is a HIFR in apposition to its antecedent. The differences (e.g. with respect to definiteness and pied piping) follow from the different context, as explained in Section 3.2.

4. Conclusion

Dutch has two related types of head-internal relative clauses: the head-internal free relative (HIFR) and the appositive relative construction with an additional internal head (HIAR). In both types the internal head NP is accompanied by the relative determiner *welk(e)*; together they are fronted (*wh*-moved) within the relative clause. I have shown that the HIAR can be seen as a HIFR in apposition to its antecedent; the differences follow from the different context. The HIFR and HIAR are not directly related to ‘exotic’ head-internal types of relatives, but they fit neatly within the Dutch system of relativization.

The raising analysis of relative clauses explains why restrictives cannot have an additional internal head NP: there is no NP position available. The appositive construction is arguably different from the restrictive in that the antecedent is externally generated; hence the argument position in the relative clause can be occupied in principle; this gives the HIAR. The HIAR is unusual because the internal antecedent serves as an epithet. In free relatives, there is also an open NP position that can be filled; this gives the HIFR. A special property of the HIFR is that its interpretation is always universal. I have related this to a semantic maximalization procedure. In other respects HIFRs behave like normal free relatives. I have shown that FRs and HIFRs do not allow for pied piping, contrary to headed restrictive and appositive relatives, including the HIAR.

Notes

¹ More interesting cases addressed by Grosu & Landman are amount relatives and irrealis free relatives.

² There is a subtle difference between a universal reading and a free choice reading (see Giannakidou 2003), which I will ignore for reasons of space. It seems that the presence of the free choice item *wh...ook maar* is preferred in HIFRs in an object position, whereas the universal reading for HIFRs in the subject position is somewhat easier to get. None of this is crucial for the argumentation here.

³ See De Vries (to appear, b) for a discussion of pied piping in headed relatives.

⁴ In left-dislocation constructions the situation is more complicated. This is discussed in De Vries (to appear, a).

⁵ Here, SR is subordinator, SPEC specific, LEV living, PTL particle.

⁶ REL is relative pronoun, DAT is dative, PRES is present tense, DEM is demonstrative pronoun, IMP is imperfect tense.

⁷ This is the most frequent pattern. See Srivastav (1991) and Mahajan (2000) for a more complete overview of the possibilities.

⁸ Notice that D+N do not form a constituent in restrictive relatives. (This is no different in a right-adjunction analysis.) Therefore the traditional term ‘antecedent’ is odd; see De Vries (2002b).

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