Free Relatives Inside Out

Transparent Free Relatives as Grafts

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1.   Introductory remarks[1]

Free relative clauses or, as they are sometimes called, headless or antecedentless relative clauses, occur in a variety of subtypes in the Germanic languages. The two main types are the specific (or definite) free relative as in (1) and the universally quantified free relative as in (2)

(1) Last night I served what you had prepared for me to my neighbor
(2) I would never serve what(ever) you prepare to my guests

Sentence (1) can be paraphrases as *...the thing(s) that...* while sentence (2) would translate to *...anything which....* In addition to these two main types there is a third type of free relative which appears to have largely escaped the attention of the grammarians. I will, following Wilder (1998), refer to this subtype as transparent free relative clauses (TFRs). This type is exemplified in (3).

(3) a.   He is what one without excessive exageration would call corpulent
     b.   He is a what many would call corpulent man
     c.   They served us what they euphemistically referred to as a steak
     d.   They put what appeared to be a steak to me on my plate

Wilder's fascinating article lists a series of interesting properties of this type of free relative. Some of these are peculiar to English, but some are also applicable in Dutch and German, for example. For the purposes of the present article, I will single out the following three properties. For a more complete discussion, the reader is referred to Wilder (1998) and Van Riemsdijk (1998).

A.   the free relative is always introduced by the relative pronoun *what* (Dutch *wat*, German *was*);
B.   the free relative always contains a predicative constituent (nominal, adjectival or
          prepositional) which could be substituted for the free relative as a whole;
C.   the meaning of the free relative is neither specific (definite) nor universal but rather indefinite.

Property A. is amply illustrated in (3). Properties B. and C. show up most clearly in the following paraphrases of the sentences in (3).

(4) a.   He is corpulent
     b.   He is a corpulent man
     c.   They served us a steak
     d.   They put a steak on my plate

As I argue more extensively in Van Riemsdijk (1998), these examples provide the key to the analysis of TFRs. It appears, in fact, that the predicative constituent, which is often right in the middle[2] of the TFR (as in (3d), for example) behaves in many ways as if it were a direct constituent of the containing matrix clause. One way of looking at it would be to say that the predicative constituent itself is literally the internal head of the relative clause. This would invoke the relative clause type called 'internally headed relative clause' found in certain languages including Japanese, Lakhota, Quechua and Mohave.

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[1]   I would like to dedicate this article to Jim McCawley, who had passed away in April 1999, only two weeks before the PASE conference in Wroc aw, at which I presented most of this material. McCawley's work on non-canonical properties of trees was instrumental in inspiring some of my ideas on the subject of syntactic grafts.

[2]   This is not entirely obvious in English. Indeed, Wilder argued that the predicative consitutent in question is always last. Examples like (3d) are adduced in Van Riemsdijk (1998) to show that his observation is an accidental consequence of the fact that predicative constituents tend to occupy a position to the far right of the clause in English. In German, due to its SOV word order, the predicative constituent is always surrounded by material that exclusively belongs to the free relative. In Dutch, we find a mixed pattern. The German type with internal predicative constituents is one possibility, but it is also possible to extrapose the predicative constituent to the end of the free relative, a position where predicative constituents are normally not tolerated. See Van Riemsdijk (1998, to appear b.) for discussion.

Another way is to assume that the predicative constituent is shared, as it were, by the matrix clause and the free relative: it is both inside and outside the TFR.

Some of the most straightforward arguments for this assumption are found in Dutch, to which language I briefly turn. Consider the Dutch equivalent of (3a/b).[3]

(5) a.   Hij is wat je zonder al te grote overdrijving corpulent zou noemen
               he is what you without all too great exageration corpulent would call
               'He is what one without excessive exaggeration would call corpulent'

     b.   Hij is een wat menigeen zou noemen corpulente man
               he is a what many   would call   corpulent man

The point here is that the adjective in (5b) is inflected with a schwa. Only attributive adjectives take the schwa-inflection, predicative adjectives never do, as shown in (6).

(6) a.   een corpulente man

     b.   Ik noem deze man corpulent(*-e)
               I   call   this   man corpulent

Evidently, the adjective in (5b) must on the one hand be inside the TFR, because the predicative constituent is an obligatory part of that clause: *many would call that.* On the other hand, inflection treats the adjective as a normal attributive adjective in the matrix clause.

In Van Riemsdijk (1998) I have argued that the TFR-construction must be analysed as a process in which one tree structure, that of the TFR itself, is 'grafted' onto another tree structure, that of the matrix clause. Informally, this means that a sentence like (3d) is represented as in Figure 1., where the large triangles stand for the respective tree structures which are grafted onto one another.[4]

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[3]   Note that (5b) can be constructed only when the adjective is extraposed to the final position (cf. footnote 2) to satisfy the rule that prenominal adjectives must be linearly adjacent to the noun. Hence the corresponding pattern cannot be reproduced in German, since that language lacks the possibility of extraposing the predicative constituent in the TFR.

[4]   Within generative grammar, such analyses have earlier been suggested in Lakoff (1974) and McCawley (1988), though not directly with reference to TFRs. Lakoff had coined the metaphor of 'syntactic amalgams' for such cases. Recently, this line of thinking, though with a different metaphor, has been picked up again in Van Riemsdijk (1998, to appear a.). Formally, a theory of syntactic grafts can be accommodated within a framework such as the one developed for coordination in Moltmann (1992).
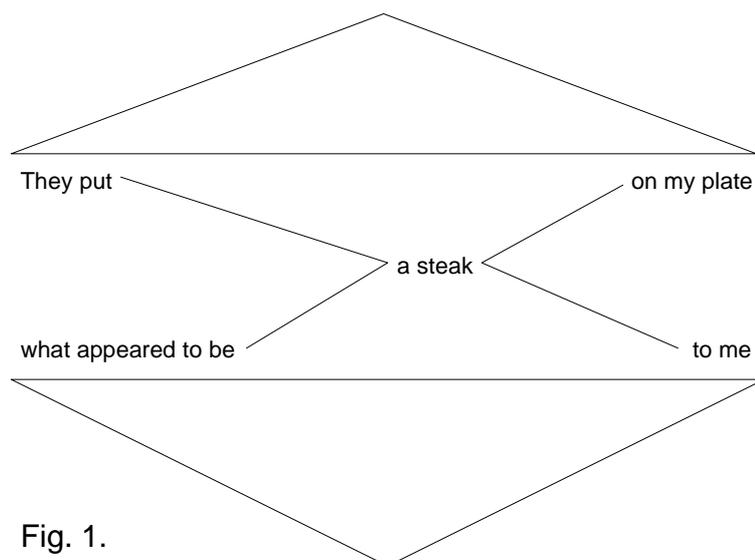
Fig. 1.

Pursuing the botanical metaphor I have chosen, I will call the tree that corresponds to the matrix clause (the upper triangle) the 'stem' and the tree structure of the transparent free relative (the lower triangle) the 'scion' or the 'graft'. For the shared element I will correspondingly use the term 'callus.'

For an overview of a whole range of syntactic phenomena that can be analysed in terms of grafted trees, the reader is referred to Van Riemsdijk (1998). I will limit myself here to the discussion of two further sets of facts which support the hypothesis that the predicative constituent in the TFR, which we now call the callus, does indeed have a bivalent status. The first set of facts has to do with a variety of binding phenomena, which will be illustrated on the basis of English, while the second set of facts concerns case matching phenomena for which we have to direct our attention to German.

2. Bound elements in the callus

One way to test the status of the callus (is it part of the stem, part of the scion, or truly part of both?) is to investigate binding phenomena. After all, binding is a specific kind of contextual dependency of an element on the clause that element is part of. With TFRs we ask: which clause? I will discuss, in that order, three types of binding: idioms, pronouns bound to a quantifier, and bound anaphors (reflexives and reciprocals).

2.1. Idiom chunks as calluses

Take an idiom like *make headway*. It is a well-known fact that *headway* can only occur as the object of the verb *make*. But in a sentence like (7)

(7) They didn't make what can reasonably be considered headway

headway appears to be the predicate of the small clause governed by the verb *consider*, whereas the object of *make* seems to be the free relative clause as a whole. But if we take *headway* to be a callus, then this word is directly the object of *make*. This solves only part of the problem, however. On the one hand we do need *headway* to be part of the TFR as well, because otherwise the free relative would be missing an obligatory consituent, the predicate: **what can reasonably be considered.* However, if *headway* is also a part of the TFR, then we would expect it to be subject to the idiomatic constraints there too. But that does not seem to be the case, since, again, *headway* is a small clause predicate within the scion. Consider now (8).

(8) a.   *Could one consider this dissertation headway?
     b.   ?Would it be appropriate to call the progress they made headway?
     c.   ?Can we characterize this as headway

(8) reveals an interesting contrast. The predicate constituent of verbs like *consider, call, characterize as,* etc. is subject to the normal constraints on the composition of idiomatic expressions, **unless the object of these verbs is either an unspecified pronoun of the type *this, that, what* or a virtual synonym of the idiom chunk in question**. These special types of (secondary) predicates appear to be positions in which these constraints are mitigated or even suspended. Putting it differently, (secondary) predicates are immune to certain idiom binding constraints. And this fact may well explain why the TFR must always contain a (secondary) predicate which serves as the callus.

We find the same facts with idioms that contain a bound pronoun.

(9) a.   Nick lost what seems to be called his marbles
     b.   ?We call someone's good sense his marbles
     c.   ?the brains that we idiomatically refer to as his marbles

Again we see that the predicate is largely immune to the constraint on idiom binding.

If, as is frequently the case in English, the idiom chunk in question is at the end of the TFR, it is sometimes difficult to see where the TFR ends and where the matrix clause continues. This is particularly relevant in cases where the relevant idiom chunk consists of more than one element.

(10) a.   Neil hit what you call the nail on the head
     b.   They took what can only be characterized as God's name in vain
     c.   She has what amounts to one foot in the grave

In these examples it is not entirely clear whether the callus is limited to the noun phrase (*the nail, God's name* and *one foot* respectively) or whether it extends to the whole non-verbal part of the idiom. One would expect both options to be possible, and if they are there should be a subtle semantic difference between them. Take (10c). When the callus is limited to *one foot*, this will be taken to mean that we are talking about someone who is seriously ill in the first place, which would have the effect that *in the grave* is, in a sense, presupposed. The part of the idiom which is singled out for the modification by the TFR is only that part which expresses the relative nearness to death: *one foot*. On the other reading, with *one foot in the grave* in its entirety as the callus, we say that this female person is close to dying, or at least that her health situation amounts to that. Similar subtle differences can be detected in the two other cases.

2.2.   Bound variables as calluses

Pronouns can be bound by quantifiers as well. In a sentence like (11a) the bound reading corresponds with the paraphrase in (11b), in contrast with the rigid reading in (11c), in which the pronoun refers to a specific third person.

(11) a.   Every musician will play his last work
     b.   Every musician will play the work that that student composed last
                 ($\forall$x [x = musician], x will play x's last work)
     c.   Every musician will play the work that that specific composer (sc. Verdi) composed last
                 ($\forall$x [x = musician], x will play y's last work)

The question then arises whether the bound reading is possible in a TFR. The following examples show that this is indeed possible.

(12) a.   Every American president has had what can be considered his Monica Lewinsky
     b.   Every politician will be held accountable for what we can describe as his political past
     c.   Nobody could remember what is known as his PIN-code

Here again, the first conclusion we can draw is that the pronoun in question cannot be bound within the TFR, simply because there is no appropriate antecedent, let alone a quantified one: *what* does not qualify. In fact, even if the TFR does contain a quantified antecedent, binding cannot apply within the TFR:

(13) Every tycoon wants to take what everybody considers his secretary to bed

This sentence has one true and one marginal reading. The true reading is the one in which *his* is bound by *every tycoon*. There is a marginal reading in which *his* is exclusively bound by *everybody*. This reading is marginal because the free relative, which in this case is a 'normal' free relative, not a TFR, being headed by *what*, refers to a non-human entity and hence is inappropriate as the object of *take to bed*. Finally, and importantly, *his* cannot be simultaneously bound by *every tycoon* and *everbody*. One would perhaps expect this double binding to be possible in view of the fact the the bound phrase is, after all, the callus, that is simultaneoulsy a constituent of the stem and of the scion. But from the perspective of logic, it is hardly surprising that this double binding is not possible. After all, this would amount to a logical formula in which a single variable would be bound by two separate quantifiers. Such a formula, needless to say, would be entirely ill-formed from a logical point of view.

The question then is why the callus, despite its status as shared constituent, can nevertheless be monovalently bound. I suspect that the answer is again to be found in the fact that the predicative constituent is a very liberal position in which many of the usual syntactic and semantic constraints can be suspended. Examples that show this for pronouns bound to quantifiers are not hard to come by. Consider, for example, the following dialogue:

(14) A: Every tycoon has brought his secretary along.
     B: It would be more appropriate to call that his mistress.

It is clear that *his mistress* in the B-sentence cannot be syntactically bound since the sentence does not contain an appropriate antecedent. Instead, it seems as if the B-sentence is in some way elliptic and that there is a kind of mental substitution or reconstruction in which the corrected term *his mistress* is put in the position of the term to be corrected (*his secretary*). And in that position the pronoun is properly bound to the quantifier *every tycoon*.

Here, again, we may speculate that it is precisely this syntactic immunity of the predicate position which guarantees that the TFR can survive in the first place and that that is the reason why every TFR must contain a predicate position which serves as the callus.

2.3.   *Bound anaphors as calluses*

Bound anaphors can also occur as (part of) the callus, as in the following examples.

(15) a.   They live in what is often referred to as each other's backyard
     b.   She was what what can only be interpreted as proud of herself

It is again clear that the bound anaphor, *each other* and *herself* respectively, is bound within the stem (by *they* and *she* respectively). But in the scion the anaphor is not bound because an appropriate antecedent is absent: *what* can neither be an antecedent for *each other* nor for *herself*. But even if the TFR did contain an appropriate antecedent, simultaneous binding of the anaphor would not be possible. Take (16).

(16) They live in what you guys often refer to as each other's backyard

There are, again, three logical possibilities:

(17) a.   *each other* bound in the stem by *they*
     b.   *each other* bound in the scion by *you guys*
     c.   *each other* simultaneously bound in the stem and in the scion by *they* and *you guys* respectively

(17a) is the normal reading of (16). The reading in (17b) is not really excluded, but then the free relative is a 'normal' free relative, not a TFR, and the reading is somewhat weird: if *they* is A and B, and if *you guys* is C and D, the sentence, on this reading, would mean that A and B live in the place that C calls D's backyard and what D calls C's backyard. Not impossible but not terribly plausible either. The reading given in (17c) is entirely excluded, however. Again, this fact is readily explained by the fact that even in simplex (that is, ungrafted) structures bound anaphors can never have more than one antecedent, or, as they are often referred to, split antecedents. This is shown in (18).

(18) a.   *John kissed Mary in each other's bedroom
     b.   *John$_i$ told Mary$_j$ about the lawsuit against themselves$_{i+j}$

The answer to the question as to why the anaphor is permitted to be monovalently bound even though the callus is a shared element can again be related to the syntactic immunity of the predicate position. I will limit myself here to giving another instructive dialogue which exemplifies this.

(19) A: John and Bill have fallen in love with each other's secretaries.
     B: Well, strictly speaking they are each other's mistresses.

The three sets of binding phenomena that I have discussed in this section warrant two conclusions:

- the callus has to be fully accessible for syntactic operations in the matrix clause and must therefore be considered a true constituent of the stem;
- while the callus is also, and at the same time, part of the TFR, the elements that must be bound cannot be simultaneously bound within the scion; logico-semantic conditions on quantification and split antecedents rule that out, and the relative syntactic immunity of the predicate position makes this possible.

3.   The case of the callus

Let us now turn to a second way in which we can test whether the callus is part of the stem, of the scion, or of both. This test is concerned with case marking. After all, case marking is also a contextual phenomenon on the basis of which we can determine whether the case is imposed by a governing element in the stem or in the scion. English and Dutch have only minimal rudiments of the formerly richer case morphology, but German still has a full-fledged case system. We therefore turn to German now, noting in passing that the German TFR-construction is otherwise identical in the relevant respects to that of English and Dutch.

If the predicative constituent is nominal, it has to be case-marked. In German, the case is determined by agreement with the element of which the predicate is predicated, that is, the subject (nominative) or the direct object (accusative). This is also true when the predicative constituent is introduced by a pseudo-prepositional element: German *als* and *für*, corresponding to English *as*.

(20) a.   Wir nannten ihn$_{acc}$ einen$_{acc}$ Dreikäsehoch
               we   called   him   a   little-runt (literally: three cheeses tall)

     b.   Er$_{nom}$ wird ein$_{nom}$ Dreikäsehoch genannt
               he   is   a   little-runt   called

(21) a.   Er betrachtet dich$_{acc}$ als einen$_{acc}$ geeigneten$_{acc}$ Nachfolger
               he regards   you   as a   suitable   successor

     b.   Du$_{nom}$ wirst als ein$_{nom}$ geeigneter$_{nom}$ Nachfolger betrachtet
               you   are   as a   suitable   successor regarded

What happens now if the predicative element in such sentences is part of a TFR, whereby it becomes a callus, a shared element. Consider the following examples.

(22) a. Ich habe mir was man als einen$_{acc}$ schnellen$_{acc}$ Wagen bezeichnen könnte gekauft
I   have me what one as a   fast   car   characterize could bought
'I have bought what one could characterize as a fast car'

b. Ich habe mir was von vielen als $\begin{cases} * \text{ein}_{nom}\, \text{schneller}_{nom}\, \text{Wagen} \\ * \text{einen}_{acc}\, \text{schnellen}_{acc}\, \text{Wagen} \end{cases}$ bezeichnet werden

I   have me what by many as   a   fast   car   characterized be

würde gekauft
would bought

'I have bought what by many would be characterized as a fast car'

c. Was viele als $\begin{cases} * \text{ein}_{nom}\, \text{schneller}_{nom}\, \text{Wagen} \\ * \text{einen}_{acc}\, \text{schnellen}_{acc}\, \text{Wagen} \end{cases}$ bezeichnen würden wird selten gekauft

what many as   a   fast   car   characterize would   is rarely bought

d. Was als ein$_{nom}$ schneller$_{nom}$ Wagen bezeichnet werden könnte wird selten gekauft
what as a   fast   car   characterized be   could is   rarely bought

(23) a. Ich habe mir was man als ein$_{acc}$ schnelles$_{acc}$ Auto bezeichnen könnte gekauft

b. Ich habe mir was von vielen als ein$_{nom/acc}$ schnelles$_{nom/acc}$ Auto bezeichnet werden
würde gekauft

c. Was viele als ein$_{nom/acc}$ schnelles$_{nom/acc}$ Auto bezeichnen würden wird selten gekauft

d. Was von vielen als ein$_{nom}$ schnelles$_{nom}$ Auto bezeichnet würde wird selten gekauft

(24) a. Gestern ist was als ein$_{nom}$ Meteorit identifiziert wurde bei uns eingeschlagen
yesterday is what as a   meteorite identified was   near us struck
'Yesterday what was identified as a meteorite struck at our place'

b. Gestern ist was Experten als $\begin{cases} *\text{ein}_{nom}\, \text{Meteorit}_{nom} \\ *\text{einen}_{acc}\, \text{Meteoriten}_{acc} \end{cases}$ identifiziert haben bei uns

yesterday is what experts as   a   meteorite   identified   have near us

eingeschlagen
struck

'Yesterday, what experts identified as a meteorite struck at our place'

c. Wir haben was als $\begin{cases} *\text{ein}_{nom}\, \text{Meteorit}_{nom} \\ *\text{einen}_{acc}\, \text{Meteoriten}_{acc} \end{cases}$ identifiziert wurde gesehen

we have what as   a   meteorite   identified   was   seen

'We saw what was identified as a meteorite'

d. Wir haben was Experten als einen$_{acc}$ Meteoriten$_{acc}$ identifiziert haben gesehen

(25) a. Gestern ist was als eine$_{nom}$ Sternschnuppe identifiziert wurde bei uns eingeschlagen
yesterday is what as a   falling-star   identified   was near us struck
'Yesterday what was identified as a falling star struck at our place'

b. Gestern ist was Experten als eine$_{nom/acc}$ Sternschnuppe identifiziert haben bei uns
eingeschlagen

c. Wir haben was als eine$_{nom/acc}$ Sternschnuppe identifiziert wurde gesehen

    d.   Wir haben was Experten als eine$_{acc}$ Sternschnuppe identifiziert haben gesehen

In the masculine paradigm, which we find in (22) and (24), the form of the nominative and that of the accusative is different. The examples show that the TFR can only yield a grammatical output if the case required by the stem is identical to that imposed by the scion. This pheonomenon is known unde the term 'case matching' and can also be observed on the *wh*-word in (normal) free relatives in German (cf. Groos & Van Riemsdijk 1981).

In the neuter and feminine paradigms, illustrated in (23) and (25) respectively, the form of the nominative and the accusative is identical: a instance of case syncretism. In this case it turns out that it is the surface from, not the abstract case features, which determine the outcome of the matching process. Hence, in these examples the construction is grammatical even if the case requirements of the stem and the scion are different: the ambiguous callus can satisfy a nominative required in the stem and at the same time an accusative required in the scion, or vice-versa. This effect of case syncretism is also known from the analysis of case matching in regular free relatives in German.

These facts can be summarized in the following table.

TABLE 1.		**masculine**		**feminine**		**neuter**	
		scion wants:		scion wants:		scion wants:	
		nom	**acc**	**nom**	**acc**	**nom**	**acc**
s t e m	**nom**	√ **(22d/24a)**	* **(22c/24b)**	√ **(25a)**	√ **(25b)**	√ **(23d)**	√ **(23c)**
w a n t s	**acc**	* **(22b/24c)**	√ **(22a/24d)**	√ **(25c)**	√ **(25d)**	√ **(23b)**	√ **(23a)**

From these facts we can derive the conclusion that the stem and the scion are equal partners when it comes to case marking, in that all case marking requirements can only be satisfied if either (a) the stem and the scion govern the same case, or (b) the stem and the scion govern different cases but the resulting form is identical due to syncretism. This means that these case matching phenomena constitute strong support for the proposed analysis in terms of a shared constituent, the callus. We also note that what I called the relative immunity of the predicate constituent in the TFR plays no role when case marking phenomena are taken into account. And this is what we would expect, since predicate nominals are fully required to satisfy any case marking properties imposed on them under all circumstances. The following dialogue shows this:

(26) A: Ist dieser Mann neben der Sieglinde ihr$_{nom}$ Chef?
           is   this   man next-to the Sieglinde her   boss

      B: Nein, ich halte   ihn eher für *ihr$_{nom}$ / ihren$_{acc}$ Liebhaber
           no,   I regard him rather as   her   lover

4.   Concluding remarks

The transparent free relative clause construction turns out to be a rich source of analytical insight. Many properties which, as far as I can determine, have so far escaped the notice of the grammarians, constitute as many indications that the TFR has to be interpreted as an independent tree structure which is grafted onto another tree structure through the means of a shared element, the callus, which has a bivalent status and therefore has to be simultaneously subject to the grammatical requirements of the stem and the scion.

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