Grafts Follow From Merge

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Abstract: In this article I intend to show that the concept of 'grafts' that I have argued for in a number of articles (cf. Van Riemsdijk, 1998b, 2000, 2001a) can be given a natural interpretation in a framework that makes use of internal and external merge. More specifically, I will argue that when all the logical combinations of internal and external merge are taken into account, grafts must exist and are not, as hitherto believed, an odd problem for phrase structure. It follows also that, in addition to my prime examples of grafts (free relatives (FRs) and transparent free relatives (TFRs)), we should expect there to be more constructions with the telltale properties of grafts. One such construction, "Horn Amalgams" will be introduced here in combination with an argument that Grosu's (2003) attempt at reducing TFRs to regular FRs fails.

1. Introductory remarks[1]

In a number of articles I have argued that there are constructions in which classical syntactic structures in terms of so-called well-formed trees are insufficient.[2] A typical simple example is (1).

(1) a far from simple matter

Clearly this is a noun phrase. The question is, what is its left-hand modifier? Is it the adjective *simple*, or is it the adjective *far*? Semantically, *simple* seems to be the head, but then what modifies it? *Far from* is not really a constituent. If *far* were the head, then it might be thought to have a PP-dependent in the form of *from simple*. But the latter option is unlikely anyway since adjectival heads in prenominal position must be adjacent to the noun.[3] This means we have a paradoxical situation. Under the assumption of grafts, trees can 'grow together' in unconventional ways, specifically in sharing terminal elements. Under such an analysis, (1) would consist of two simple trees, one corresponding to *a simple matter*, the other one representing *far from simple*. the adjective simple is the shared element, the 'callus' in my botanical metaphor. The paradox is avoided by the idea that the root node of the PP is not connected to any position in the host tree (the DP). Even in a simple case like this, interesting evidence exists in favor of an approach like this. Consider the fact that in Dutch attributive adjectives inflect, while predicative adjectives do not. In the equivalent of (1), the adjective is inflected by means of schwa:

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1 The ideas presented here have benefited from discussions with the students in my classes at the University of Vienna in June 2004, and from thoughtful comments by Edwin Williams. Thanks are also due to audiences at Tilburg University and at the Incontro di Grammatica Generativa in Rome, February 2005, as well as subsequent comments by Alex Grosu, Viola Schmitt and an anonymous reviewer. Parts of the present article appear in Van Riemsdijk (2004, to appear-b).

2 See Van Riemsdijk (1998b, 2000, 2001a) with antecedents in Nakau (1971), Kajita (1977), Lakoff (1974), and McCawley (1982, 1988). Lakoff coined the term 'syntactic amalgams for what I call grafts. My own work grew out of a critique of Wilder (1998, 1999).

3 Cf. Williams' (1982) Head Final Filter, going back to the Surface Recursion Restriction of Emonds (1976:19, Emonds, 1985:131). See also Van Riemsdijk (1998a) for more recent discussion.

(2) a. *een alles behalve eenvoudig-*(*e*) *oplossing*
a anything but simple solution

b. *deze oplossing is alles behalve eenvoudig-*(**e*)
this solution is anything but simple

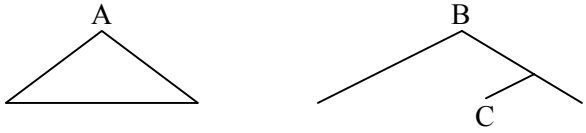
On the graft approach we can say that the uninflected adjective is the shared element, while the inflection marker remains outside the callus.

The most compelling evidence for grafts comes from the construction called 'transparent free relatives' which I will return to in section 4. Before doing so, however, consider the question of whether the introduction of grafts into the arsenal of descriptive tools in linguistic theory[4] does not constitute an excessive extension of power. The point of the present article is to argue that, on the contrary, the existence of grafts follows directly from the logic of external and internal merge, as developed in Chomsky (2001, 2005).

2. The logical necessity of displacement

In two recent lectures,[5] Chomsky has sharpened the reasoning concerning what used to be called the displacement problem. Until recently, the existence of movement (displacement) was seen as a problem: why does it exist?[6] Chomsky now argues that this is a misguided question. Recursive merge is now thought to be the defining property of the human language faculty (cf. Hauser et al., 2002). What Merge does is, it takes two elements, call them A and B, and puts them together. Now, in the simplest case, A and B are both simplex. That would be a case of 'very first merge'. Apart from this case, however, A and B will generally be syntactic trees that have been formed by previous instances of merge. Consider the following situation.

(3)



In a configuration like this, there are only two ways in which merge could apply to B: either B is merged with A, resulting in (4a), or it is merged with C, yielding (4b).[7]

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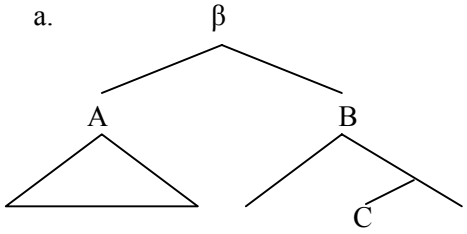
4 A formalization of grafts should be possible along the lines of the theory developed in Moltmann (1992). This is not to say that the task is trivial. For more recent discussion, see Guimarães (2004) and De Vries (2004, to appear). These authors share a number of the basic insights that I have been pursuing in the present work. Linearization, clearly a potential problem for any theory of grafts, is insightfully discussed in Guimarães (2004) and De Vries (to appear).

5 The lecture at the GLOW conference in Thessaloniki, April 2004, and the lectures at the TiLT conference in Budapest, May 2004.

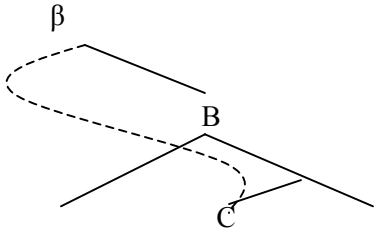
6 See, e.g., Chomsky (2004:164f).

7 I am assuming without further argument here that internal merge must be conceived of as remerge, that is as multiple dominance (cf. Gärtner, 2002) rather than as copy+deletion, as proposed in Chomsky (1995). The remerger of C with B under β is expressed as a dotted line here. For proposals arguing this point, see also Bobaljik(1995) Epstein et al. (1998) Guimarães (2004) De Vries (2004) and Zhang (2004).

(4) a.



b.

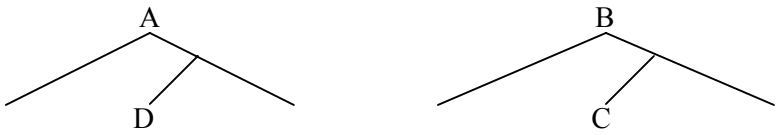


As Chomsky puts it, we would need a stipulation to prevent merge from applying to the pair {B, C}, therefore a theory that avoids this stipulation and hence admits internal merge (or remerge) is the simplest one. Therefore it is not the existence of displacement that constitutes a problem. The real problem would be if displacement did not exist.

3. Grafts as the missing case

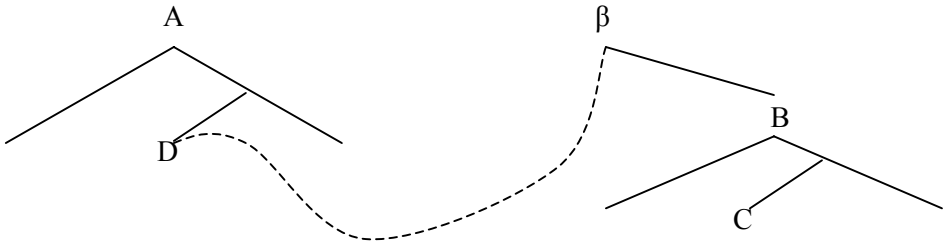
Pursuing this line of thinking, consider now a situation that is minimally different from (3), the only difference being that the internal structure of the tree dominated by A is partly specified.

(5)



Using the same style of reasoning as Chomsky's, we may say that a stipulation would be required to prevent merge from applying to the pair {B, D}. The result of such a merger operation can be depicted as in (6).

(6)



The resulting structure, of course, is exactly what I have been calling a graft. D is the shared element which, in the host tree β, is dominated by β and is a sister of B, while it preserves the structural relations it had in its source tree A.[8] It might be said that some fundamental

[8] Linearization seems rather straightforward. There is an asymmetry between the host tree and the graft tree; pronouncing elements of the host tree from left to right has precedence; as soon as we hit a shared element, here D, anything that precedes D in the graft tree A is pronounced first, followed by D itself, followed by whatever follows D in A. After D is exhausted, the remainder of β (that is, B) is pronounced. De Vries (to appear) shows, however, that the formalization of the linearization algorithm is far from trivial. One might raise the question, as did a reviewer, how we know which one of the two trees, floating in what Jean-Roger Vergnaud once, using a metaphor from molecular biology, called "the soup", is the matrix or host tree. The most preferable take on this, I feel, is to say that the operation as such is blind to this choice: all trees are equal. At some point in the derivation, however, one part of the tree will have to assume root character in not having an overt complementizer, for example, and in having the verb in second position in languages like German. Thereby that part of a complex tree that projects to the root will be defined as the host. Future research will have to show whether such an approach is tenable.

principle blocks access to D in (6), see for example the discussion on possible interactions between grafting and phase theory in section 4.3. below. But notice that this is equally true for Chomsky's argument concerning internal merge: whatever fundamental principle is invoked to block internal merge would be a stipulation in Chomsky's sense. I am not, of course, denying that the availability of grafting does not lead to massive overgeneration – it does. And one of the major tasks will be to severely constrain this particular instantiation of merge. But this necessity to constrain grafting is not different, in principle, from the necessity of constraining, say, internal merge. The only difference is that we have worked on constraining internal merge (formerly move) for several decades now, while the program to constrain external-internal merge (that is, graft) is only just starting.[9]

I conclude that we should not be surprised to find phenomena in natural language that point in the direction of grafts. On the contrary, if we did not find such phenomena, we should be seriously worried. With this in mind, let us first reexamine two major cases for the existence grafts: free relatives (FRs) and transparent free relatives (TFRs). Subsequently, in section 6, I will discuss a third construction, "Horn Amalgams" (HAs), and show that this construction has all the properties that we expect to find in grafts. Moreover, the analysis of HAs as grafts will be shown to invalidate the arguments of Grosu (2003) against my analysis of TFRs as grafts.

4. More thoughts on grafts: Free Relatives and Transparent Free Relatives revisited

4.1. Free Relatives

One of the most interesting properties of free relatives in many languages is the so-called case matching property, cf. Groos and Van Riemsdijk (1981) and Van Riemsdijk (to appear-a). In German, for example, a free relative in which a dative indirect object has been relativized must be in a position in the matrix clause to which dative case is assigned.[10]

(7) a. *Ich gebe^{DAT} die Belohnung wem$_{DAT}$ eine gebührt^{DAT}*
I give the reward whom one deserves
'I give the reward (to) who(m) deserves one'

b. *Ich gebe^{DAT} die Belohnung *wer$_{NOM}$ /*wem$_{DAT}$ eine verdient^{NOM}*
I give the reward who whom one deserves

c. **Wem$_{DAT}$ /*wer$_{NOM}$ eine Belohnung gebührt^{DAT} bekommt^{NOM} eine*
whom who a reward deserves receives one

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9 In Van Riemsdijk (2000) I speculate that it is not an accident that the shared element (the callus) in amalgamated constructions is typically a predicative constituent. For example, argument XPs are subject to the theta-criterion, which would mean that if some DP is an argument both in the host and in the graft a theta-criterion violation results. Predicate XPs are not subject to the theta-criterion. They typically are also less rigid in their morphological behavior, often fluctuating between case agreement and inherent case, often showing deviations from strict number agreement, etc. Pursuing such matters would be well beyond the scope of the present article, but we should take the program of constraining graft seriously. Note, however, that the above may well be overly restrictive. The analysis of TFRs, discussed below draws a close parallel between TFRs and internally headed relative clauses of the type found in languages such as Japanese (cf. also Van Riemsdijk, 2000). The latter may well be treated as grafts, but they are not limited to predicative XPs.

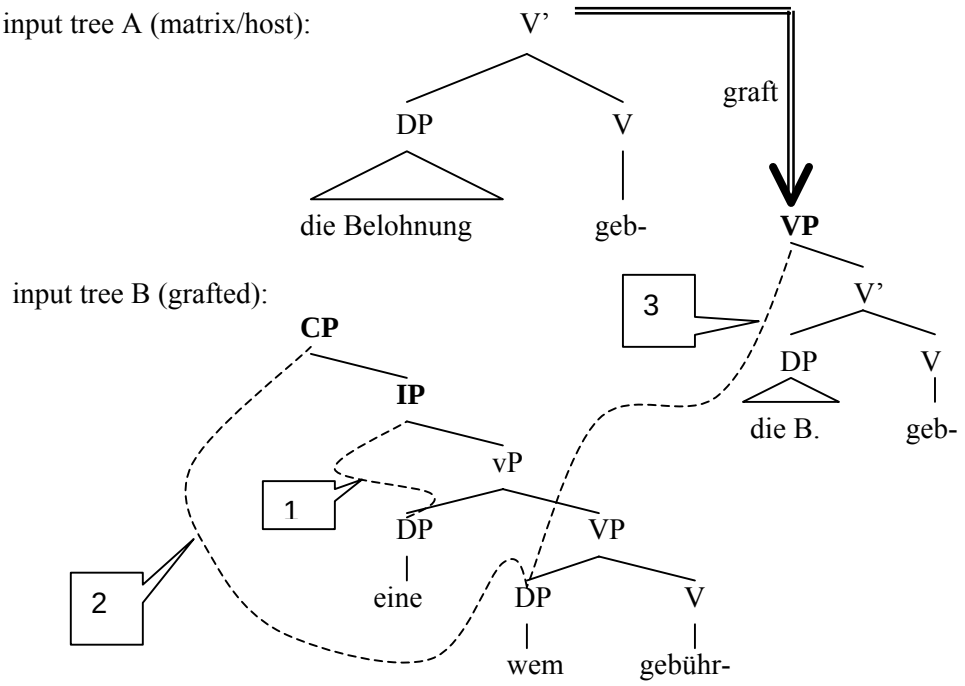
10 In the following examples, I use superscripts for case government properties of verbs and other case assigners, and subscripts for actual case forms.

In (7b) we have a case conflict: the matrix verb requires a dative on the *wh*-word, while the verb in the relative clause (unlike the verb in (7a)) requires a nominative. Similarly, in (7c) we also have a case conflict because the opposite situation is found: the matrix requires a nominative while the relative clause requires a dative.

Observations like these have led some researchers to propose that the fronted *wh*-element in the free relative clause is not in the usual position of *wh*-phrases in relative clauses, the Specifier of CP, but in the position of the (apparently missing) head of the free relative (cf. Bresnan and Grimshaw, 1978). Such an analysis, similar in many ways to the so-called raising analysis of headed relative clauses,[11] would account for case matching in a straightforward way. What might be considered problematic, however, is that under such an analysis there is a single element, the *wh*-word, that is assigned a θ-role both in the relative clause and in the matrix clause, which constitutes a violation of the Theta Criterion of Chomsky (1981). This is, however, a problem that also attends the graft approach to free relative clauses that I now turn to (cf. also footnote 9).

In Van Riemsdijk (to appear-a) I propose to treat free relatives as grafts. The above example (7a) would accordingly be derived in the following manner.[12]

(8) input tree A (matrix/host):



11 See Vergnaud (1974, 1985), Kayne (1994), Bianchi (1999). Pursuing the arguments given for these raising approaches, it is natural to investigate the possibility that headed relative clauses might be analyzed as grafts in ways similar to what I propose for free relatives in the text. Undertaking an attempt at such an analysis would go beyond the limits of the present article, however. Still, contemplating a derivation analogous to (8) for headed relatives is not hard, and it sheds considerable light on the relationship between head-external and head-internal relative clauses. In particular, it is easy to see that reconstruction effects with bound anaphors contained by the head of the relative clause being bound either in the matrix clause or in the relative clause are straightforwardly accounted for.

12 The structures are greatly simplified. No inflectional functional structure has been taken into account. I remain agnostic as to the proper way of handling datives. Also, I stick to pre-bare-phrase-structure labeling. The final steps of the derivation of (7a) have also been omitted: merging the matrix subject and internal merge of the finite verb (Verb Second).

Three steps involving merger are depicted in (8). Step 1, which is not directly relevant to our purposes but included for completeness, is the internal merge of the subject of the relative clause by which the bold-faced IP is created. Step 2 is the internal (re-)merger (*wh*-movement) of *wem* inside the relative clause, creating the bold-faced CP. The crucial third step is the **external merge of an internal element** in the dependent relative clause tree to the partial matrix tree, creating the bold-faced VP. This third step is what I call the process of grafting.

4.2. Transparent Free Relatives

Transparent Free Relatives are exemplified by the following sentences (cf. footnote 2 for references).

(9) a. I ate what they euphemistically referred to as a steak
b. There is what I suspect is a meteorite on the front lawn

These examples deviate from 'normal' free relatives in a number of ways. First, free relatives generally have either a definite interpretation or a free choice (universal) interpretation.[13] Take (10), which either means that I eat the thing that is on the table, or that I eat whatever is on the table, no matter what it is.

(10) I eat what is on the table

In contrast, the examples in (9) are indefinite. For example, the most plausible paraphrase of (a) is something like 'I ate a steak – at least they called it a steak'. The indefiniteness of such examples is also shown by the fact that in (9b) the free relative occurs in a *there*–insertion context. It appears, in fact that what determines the indefiniteness of the free relative in (9) is the predicate nominal (*a steak, a meteorite*). This is a first indication that it may be not the properties of the *wh*-element but the properties of the predicate nominal (or AP) that determine the behavior of the free relative. This is precisely why they are called 'transparent'. If we treat them as regular free relative clauses, the predicate XP is deeply embedded inside the relative clause. Yet, it seems to act as if it were the head of the relative clause construction. The most direct or radical approach to account for this observation would seem to be to take the predicate XP to be the shared element, the callus. It turns out that there is ample evidence for such an approach. I will first review a number of the more salient pieces of evidence, and then present a few new considerations supporting the same point.[14]

The *wh*-word *what* normally dictates singular agreement, as shown in (11a), both inside the relative clause, if it is a subject, and also as the virtual head of the free relative.

(11) a. What pleases/*please me most adorns/*adorn the living room wall
b. What *seems/seem to be some meteorites *was/were lying there
c. What seems/*seem to be a meteorite was/*were lying there

In (11b) the situation is precisely the reverse. The plural agreement appears to be dictated by the predicate nominal, not by *what*, as (11c) confirms.

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13 This is uncontested for argument free relatives. With adjunct free relatives, however, the situation is less clear, cf. Caponigro (2004).

14 See Wilder (1998, 1999) and Van Riemsdijk (1998b, 2000, 2001a) for extensive discussion of these and other properties.

Elements inside a (free) relative clause resist extraction, that is, they are subject to the Complex Noun Phrase Constraint. But if the predicate nominal is a shared element, it is also part of the matrix clause and should therefore allow extraction from it. This is precisely what we find.

(12) a. *Who did they copy a photograph that was identified as [a picture of [e_i]] ?
b. *Who did they copy whatever was identified as [a picture of [e_i]]?
c. Who did they copy what was identified as [a picture of [e_i]]?

(12a) shows that extraction from the predicate nominal is not possible out of a headed relative clause. (12b) shows that the same fact holds for regular free relatives. And (12c) shows that extraction is OK (or at least significantly better) from a TFR.

Consider next the fact that the adjectival agreement facts in Dutch that we discussed above in connection with example (2) hold with equal force for TFRs:

(13)

een	*wat*	*ik*	*zou*	*noemen*	*eenvoudig-*(e)*	*oplossing*
a	what	I	would	call	simple	solution

Inside the relative clause the adjective is a predicative adjective which should not be inflected. But in the matrix noun phrase it is an attributive adjective that requires the schwa. Note furthermore that the position between the article and the head noun is not a position where we would expect to find any kind of relative clause.[15]

The arguments that have been used to support the raising analysis of headed relative clauses can be applied to the predicate XP of a TFR as well. Take the idiom chunk argument. The noun *headway* can only exist as part of the idiom in which it is the object of the verb *make*. In this light (14) is odd.

(14) The headway they made was impressive

But if the head noun is raised from the position of the direct object inside the relative clause into the head position, then this type of reconstructive behavior is explained. Observe now, that we have the same effect in (15).

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

If *headway* is a shared element, that is, if it is simultaneously the predicate of *consider* and the object of *make*, the problem disappears.

With bound anaphors, typically used to illustrate reconstructive behavior, we get the same pattern.

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

In both cases it is the subject of the matrix clause that binds the anaphor in the predicative XP. This should not be possible if the relative clause were a 'real' relative clause. But if the

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15 Recall from the discussion of (2) above that I am assuming that the inflection marker is external to the callus, and hence an element of the host tree. It is fair to ask, as does an anonymous reviewer, why case inflection could not be similarly treated, thereby circumventing the case matching requirement in examples like (7). The answer is that case, at least in languages like German, is fusional and hence cannot be kept outside the callus.

predicative XP is shared with the matrix clause, the binding relation between *they* and *each other* and between *she* and *herself* comes as no surprise.[16]

In this example, the binder is in the matrix clause. But if the callus, the DP containing the bound anaphor is truly shared, we might expect to find cases in which the bound anaphor is jointly bound by elements both in the TFR and in the matrix clause. Such cases are not easy to construct, but the following examples are candidates.

(17) a. Bush_i would never acknowledge what Cheney_j refers to as [each other's]$_{i+j}$ mistakes
b. John_i hates to discuss what Mary_j calls [each other' s]$_{i+j}$ sexual deficiencies

The next fact we will briefly elucidate concerns case matching. If TFRs are grafted at the predicative XP, we expect case matching effects to show up when the XP is a noun phrase. That is, case matching should be found at the predicate nominal, the callus, instead of at the *wh*-word. This is indeed what we find (cf. Van Riemsdijk, 2000, 2001a). Predicate nominals agree in case with their subject, which may either be a nominative or an accusative.
Accordingly the TFR will have to be in a nominative or accusative position in the matrix clause.[17]

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16 It is important to keep in mind that in general TFRs generally also allow a construal as standard free relatives. In trying to keep the two apart in establishing introspective judgements, it is helpful to take into account the fact that TFRs are used to create an intensional context, see section 6 for some discussion. It is not easy to construct direct tests, but one possibility could be based on the question of how c-command works in grafts, as suggested to me by Viola Schmitt. Take bound pronouns in regular free relatives.

(i) Every German_i likes what he_i considers peasant food

On standard assumptions *every German* should c-command the bound pronoun *he*. In my analysis of regular free relatives this should not be a problem (though a formal account remains to be given) since *every German* c-commands *what* and *what* c-commands *he*. By transitivity *every German* c-commands *he*. On a TFR construal, however, things should be different since *every German* c-commands *peasant food*, but *peasant food* does not c-command *he*. Does this correspond to your judgment, in other words is it true that (i) lacks the intensional interpretation typical of TFRs? I find this very difficult to ascertain. But notice that we can force a TFR situation by invoking idiom chunks. Consider the following pair, taken from German this time.

(ii) a. *Jeder Teilnehmer hat die unterschiedlichen Standpunkte auf* [*was manche für* ***einen gemeinsamen Nenner*** *halten*] ***gebracht***
every participant has the distinct points-of-view on what some for a common denominator take brought
'Every participant has reduced the various points of view to what some take to be a common denominator'

b. *Jeder Teilnehmer$_i$ hat die unterschiedlichen Standpunkte auf* [*was er$_i$ für* ***einen gemeinsamen Nenner*** *hält*] *gebracht*
'Every participant has reduced the various points of view to what he takes to be a common denominator'

While judgements are still not crystal clear, I get a discernible contrast between (iia) and (iib). In (iib) the idiomatic reading of *auf einen gemeinsamen Nenner bringen* is harder to get and the intensional interpretation is largely lost. Needless to say, these are complicated issues that deserve to be pursued elsewhere.

17 It should be noted that the judgments require some thinking. This is so because a TFR generally also allows for a construal as a regular free relative clause. On such a construal, the free relative will mean something like 'the thing that we call X' or 'the thing that is called X'. Of course, in a regular free relative we expect the matching effect to occur, but the form *was* is syncretic: the nominative and the accusative of the neuter wh-word have the same form (*was*). As I argue in Groos and Van Riemsdijk (1981) and Van Riemsdijk (to appear-a), it is the forms, not the features that determine the matching effect. Indeed, if instead of a masculine noun as in (18) we choose a feminine or a neuter noun, all four combinations of active and passive are grammatical since these case forms are also syncretic. In the following examples, the noun Wagen, which is masculine, is replaced by Auto, which is neuter.

(i) a. *Ich habe was man ein$_{acc}$ schnelles$_{acc}$ Auto nennt gekauft*
b. *Ich habe mir was ein$_{nom/acc}$ schnelles$_{nom/acc}$ Auto genannt wird gekauft*
c. *Was viele ein$_{nom/acc}$ schnelles$_{nom/acc}$ Auto nennen wird selten gekauft*
d. *Was ein$_{nom}$ schnelles$_{nom}$ Autogenannt wird wird selten gekauft*

(18) a. *Ich habe was man einen$_{acc}$ schnellen$_{acc}$ Wagen nennt gekauft*
I have what one a fast car calls bought
'I have bought what one calls a fast car'

b. *Ich habe was* { * ein$_{nom}$ schneller$_{nom}$ Wagen / * einen$_{acc}$ schnellen$_{acc}$ Wagen } *genannt wird gekauft*
I have what a fast car called is bought
'I have bought what is called a fast car'

c. *Was viele* { * ein$_{nom}$ schneller$_{nom}$ Wagen / * einen$_{acc}$ schnellen$_{acc}$ Wagen } *nennen wird selten gekauft*
what many a fast car call is rarely bought
'What many call a fast car is rarely bought'

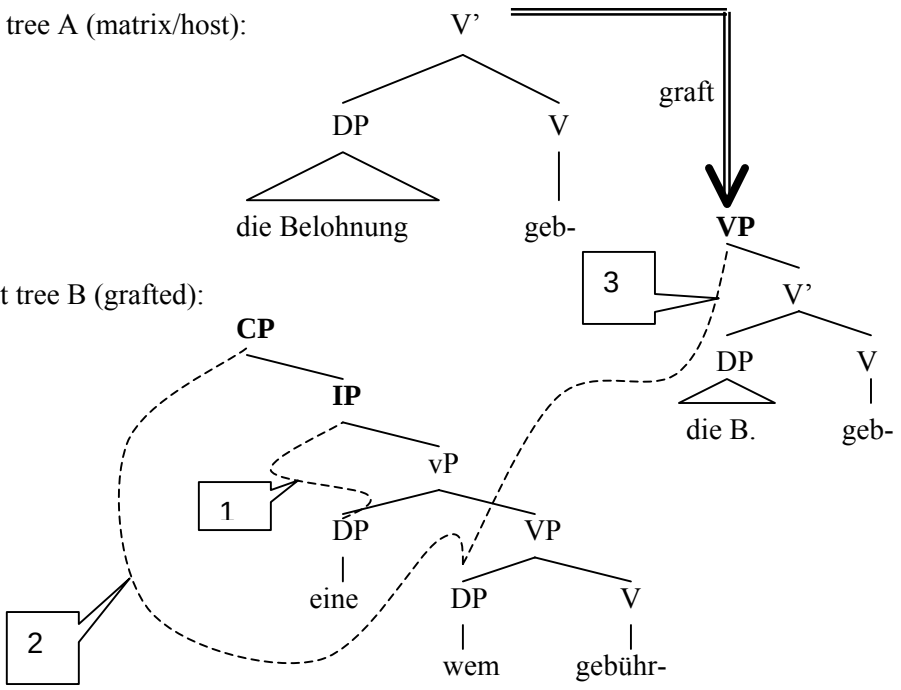
d. *Was ein$_{nom}$ schneller$_{nom}$ Wagen genannt wird wird selten gekauft*
what a fast car called is is rarely bought
'What is called a fast car is rarely bought'

In the active variants (both in the matrix clause and in the TFR) we have a small clause construction in which the subject of that predicate is marked accusative by the verb *nennen* ('call'). If that construction is passivized, that small clause subject appears in the nominative. In the b- and c-examples we have a conflict since the matrix requires an accusative while the TFR requires a nominative (18b), and vice-versa (18c).

4.3. Grafts and Phases

The complex derivation that was presented as (8) above, and which I repeat here as (19) for convenience, presents a problem.

(19) input tree A (matrix/host):



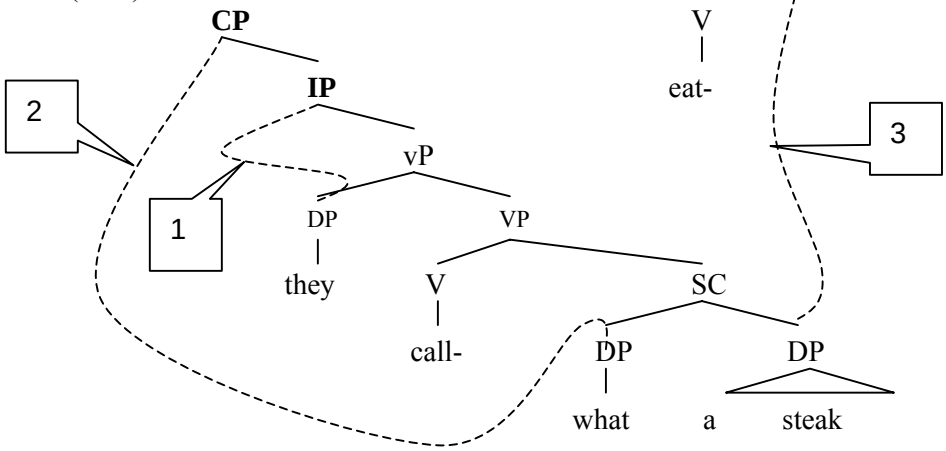
The problem is that if we take the numbering of steps 2 and 3 literally, the graft (step 3) seems to be in conflict with Phase Theory (cf. Chomsky, 2001). Following Chomsky, vP and CP may be thought to be the phases (essentially what used to be called cycles). In building up tree B, once we leave the domain of vP and start building the IP, the vP is immediately shipped off to the PF-interface. That is, any constituent inside the vP (such as the DP *wem*) is no longer accessible to operations of syntax. Therefore, step 3 appears to be incompatible with Phase Theory.

In this particular case, however, this reasoning does not apply. This is so because the DP *wem* is also dominated directly by the CP and is therefore also a member of the higher phase. But notice that this easy way out is not available for TFRs, since in TFRs the predicative XP that is shared does not move to a higher position inside its clause. In order to see this, consider the derivation of (a simplified variant of) (9a):

(20) I ate what they called a steak

(21) input tree A (matrix/host):

input tree B (TFR):



Step 1 in the derivation is, again, immaterial to the issue at hand. The crucial difference between (8/19) and (21) is that in (8/19) steps 2 and 3 affect the same element (*wem*) while in (21) it is *what* that gets remerged (*wh*-moved to Spec,CP) and the predicative DP *a steak* that is grafted to become the direct object of *eat*. Now, if we complete the building of tree B before applying graft (step 3), we do have a problem with Phase Theory because the DP *a steak* has already been transferred to PF. However, there is no reason why we should assume that tree B is already completed when graft applies. Specifically, graft may apply at any stage (DP, SC, VP, vP) until the vP is sent off to spell-out (PF).

I conclude that external merge of any kind, that is including graft, can apply to a pair of nodes that each belong to their respective trees, where every one of these trees can be at some intermediate stage of its growth. Phase Theory can be thought of as one of the conditions that partly regulate this process.[18]

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[18] Exactly how Phase Theory interacts with principles of linearization is rather unclear. In view of the fact that, very roughly speaking, trees tend to be higher on the left and lower on the right, the first phases to be shipped

4.4. Preliminary Conclusions

Grafts are by no means the marginal and exotic creatures that most linguists like to ignore. Once we recognize that the most non-stipulative theory of merge includes graft as one of the subcases of external merge, the study of grafts assumes considerable importance. Many questions impose themselves. For example, TFRs are quite similar to parentheticals in many ways. For example, both constructions are mostly used as hedges, creating a certain distance between the speaker and the choice of a specific term in a sentence. The main difference is that parentheticals do not seem to share any material with the matrix clause. Is there a way to treat parentheticals on a par with TFRs? A second question, already mentioned in footnote 11, is whether headed relative clauses, and perhaps adjuncts in general, could be conceived of as grafts.

5. Grosu's critique

In a very substantial study, Grosu (2003) argues against my analysis of TFRs in terms of grafts. Within the size limitations of the present article, I cannot do full justice to an 85 page long article, obviously, so I will have to limit myself in the present section to a few remarks on those passages that deal specifically with the arguments that I present in favor of the graft analysis. In the next section, however, I will show that Grosu's line of argument is seriously on the wrong track in one crucial respect.

By and large, Grosu accepts the notion that the predicative XP in TFRs, which he calls the "transparent nucleus" (TN), displays some properties that indeed make it look transparent. By criticizing my arguments, Grosu wants to support his idea that TFRs are really the same thing as regular FRs in which the transparent properties of the TN are passed along, presumably as a kind of free riders on the *wh*-word *what*, into a position where they are indeed accessible to the matrix clause in very much the same way that fronted *wh*-elements are in regular FRs. Unfortunately, Grosu remains rather vague about the precise way the relevant features are carried along.

Consider first the adjectival agreement facts illustrated in (13) above. I consider this a strong argument in favor of the graft approach. If the adjective (or AP) is purely a predicative constituent inside a free relative, we would not expect to find any agreement morphology, since predicative adjectives never inflect in Dutch. Prenominal attributive adjectives, however, do inflect. More specifically, attributive adjectives carry a schwa-suffix unless the head noun is a singular neuter indefinite. The number, gender and definiteness features in question are unlikely to be passed along by the *wh*-word *wat* because *wh*-pronouns have such features of their own. Since *wat* is a neuter singular pronoun, we would not expect it to be able to pass along the feature non-neuter as would be required in the case of example (13), for example. Grosu does not deal with this argument as such, but he discusses some relevant facts under the heading "right edge constraint" in his section 7.5. (Grosu, 2003:311ff). By right edge constraint Grosu refers to Williams' (1982) Head Final Filter discussed above in

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off to spell-out will be among the last to be pronounced, while the first chunks of a sentence to be pronounced are most likely among the last phases that the derivation reaches. Hence some mechanism must be assumed to keep track of all these chunks of phonetic material waiting to be arranged in some sequence in order to be pronounced as a complex sentence. In lectures in Thessaloniki and Budapest, Chomsky addressed this problem (jokingly?) by saying that there had to be a kind of humunculus taking care of this. This humunculus would have to be like a superb parking lot attendant with a very good survey of all the parked vehicles and an excellent memory of where they came from and who they belong to.

connection with example (1) (cf. note 3).[19] What Grosu apparently fails to appreciate is that these adjectival inflection phenomena, which are absent in German due to the Head Final Filter (the verb will always follow the predicative adjective inside the TFR due to the SOV-property of German), do occur in Dutch by virtue of the (quite exceptional) fact that the predicative adjective can follow the verb in TFRs as illustrated in (13). As a result of this exceptional AP-extraposition, the Head Final Filter is obeyed.

Grosu also objects to my idiom chunk argument. He uses my own observation that idiom chunk licensing is virtually suspended in a small clause predicate whose subject is *this/that* (the non-*wh* variant of *what*):

(22) I would not call this *significant headway* (Grosu's example (76b)

But thinking about what *this* means in an example like this, it would be quite plausible to say that *this* stands for *what we made*. At any rate, this observation does not make the argument go away because there still is a quite appreciable contrast between (23a) and (23b).

(23) a. Nick has made what one may call *significant headway*
b. ?*Nick has achieved what one may call *significant headway*

Grosu is justified in observing that some of my arguments are difficult to evaluate because I did not fully elaborate the theoretical framework in which the concept of graft could be formalized. This deficit on my part is now, at least partly, remedied by the interpretation of grafts as internal/external remerges as illustrated in (21) and by the works of Guimarães (2004) and De Vries (2004, to appear). Nevertheless, Grosu is to be forgiven for assuming that in my analysis "the semantic nucleus *qua* element of the matrix c-commands the relative CP (and thus, itself, *qua* element of that CP)" (2003:288). Still, he is wrong. (21) shows that this is not the case.

In addition, of course, there are the usual empirical discussions which I will go into only marginally here. It is true, clearly, that the *there*-insertion argument is always somewhat complicated by the fact that sometimes, under certain specific conditions, definite DPs can also show up in this construction. One example Grosu mentions is (24).

(24) In this vat, there is just the {kind, amount} of wine that I consider ideal

But consider again the example (9b), repeated here as (25).

(25) There is what I suspect is a meteorite on the front lawn

It is still a fact that (25) contrasts with (26), despite the fact that both could be rephrased by means of some expression like *the kind of thing*, as (27) shows.

(26) *There is what originates in outer space on the front lawn

(27) a. #There is the kind of thing that I suspect is a meteorite on the front lawn
b. #There is the kind of thing that originates in outer space on the front lawn

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[19] Grosu's choice of terminology is somewhat unfortunate here because Wilder (1998, 1999) had suggested to treat TFRs as "right edge phenomena" on a par with the right node raising construction.

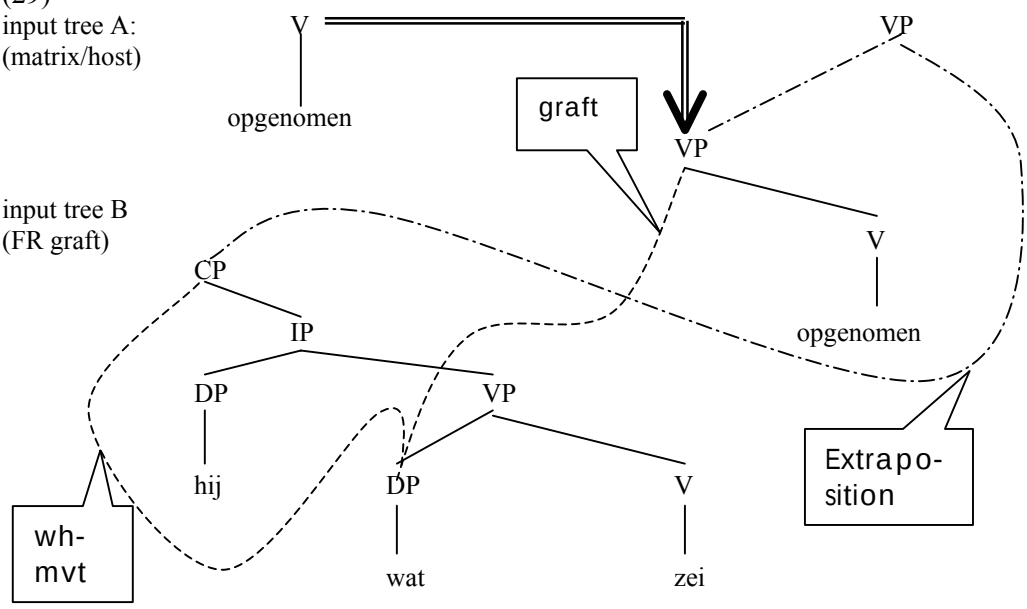
The examples in (27) may or may not be fully felicitous (hence the #-mark), but there is no denying that there is a clear contrast between (25) and (26).

Another area where the facts are contested is that of case matching phenomena discussed above in connection with (18). It is true that judgments are notoriously difficult, especially in the domain of case morphology, where many German dialects have deficient systems compared to the standard language. The fact remains, however, that there is a discernible matching effect there. Furthermore, this effect cannot be explained away by assuming that case features are carried along by *was* since *was* syncretizes the nominative and accusative (see note 13 on this issue), a fact that is also significant in the analysis of regular FRs.

A last issue that I want to briefly touch upon here is that of extraposed free relatives. This is important both for the graft analysis of FRs and that of TFRs and it involves an observation that has played an important role in the debates about FRs ever since it was pointed out in Groos and Van Riemsdijk (1981). The point is this. In Dutch and German, by and large, CPs can be extraposed (to the postverbal position, these languages being SOV) but DPs cannot. In FRs the *wh*-word must extrapose along with the rest of the FR, hence the *wh*-word must be inside the CP and cannot be in the position of the head of the relative clause, as claimed by Bresnan and Grimshaw (1978). In a graft analysis the situation is a bit different. A FR like (28) would roughly be represented as (29).

(28) *Wij hebben wat hij zei opgenomen*
we have what he said recorded
'We have recorded what he said'

(29)



Extraposition is possible:

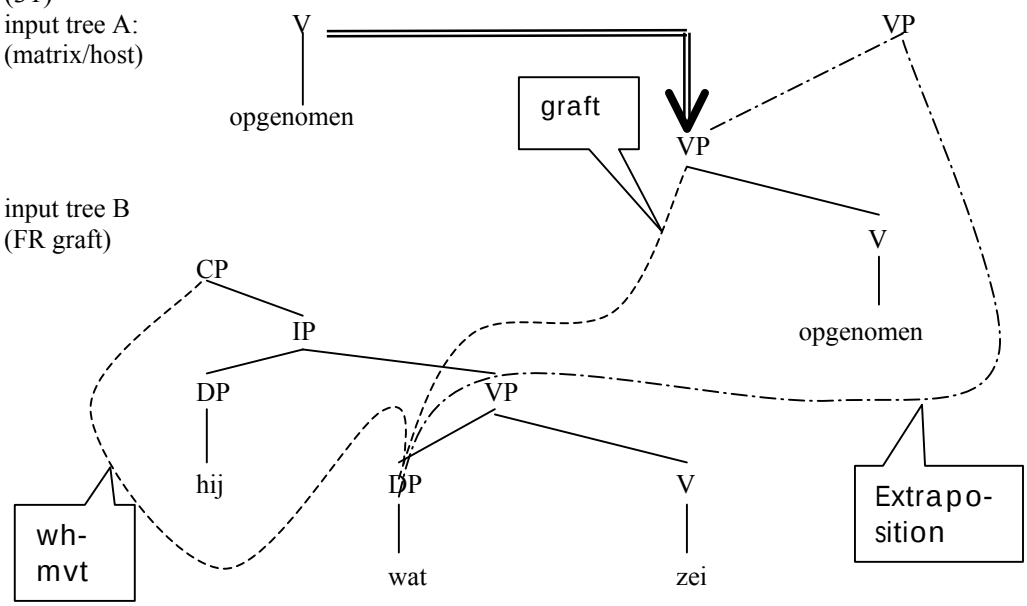
(30) *Wij hebben opgenomen wat hij zei*

The question then is what structure we should attribute to (30). Observe that much is unclear about this question in more or less standard versions of minimalism. Many hold that

rightward movement does not exist (cf. e.g. Beerman et al., 1997, Kayne, 1994), and if it does exist, it is difficult to determine where the CP moves to. In (29), I have assumed that extraposition is external merge to the right. On this assumption there is no surprise: it truly is the CP that moves into a postverbal position. This does not affect the fact that the DP *wat* is multiply dominated both by the matrix VP, by the FR-VP, and by the FR-CP.[20]

There is also a second way of looking at things, however. Suppose that extraposition is indeed external merge to the right of VP. But suppose that extraposition applies blindly to any XP. In that case we could also say that, indeed, it is the DP *wat* of the FR-tree that is extraposed. The corresponding derivation is given in (31), which is minimally different from (29) in precisely this point.

(31)



Such a derivation would seemingly lead to a violation of the generalization that DPs may not extrapose in Dutch and German, as Grosu objects. But now consider the situation from the perspective of linearization, cf. note 8 above. No matter how exactly the linearization algorithm is formulated, it will have to ensure that all elements of the graft are spelled out contiguously to the left and to the right of the shared element. That is, all elements of the matrix are pronounced (*wij hebben opgenomen*) until we get to the shared element *wat*, which is then spelled out preceded by what precedes it in the graft, which is nothing, and followed by what follows it in the graft, which is *hij zei*.[21] Thereby (30) results. Looking at the linear sequence of elements, now, we can see that what follows the matrix verb (*opgenomen*) is *wat hij zei*, which is a CP and not a DP and hence is expected to be grammatical.

Observe now that indeed TFRs pattern identically:

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20 On the assumption that rightward movement does not exist a more complicated situation arises which I will not attempt to work out here.

21 Note, incidentally, that this presupposes that the linearization algorithm is formulated in such a way that the "highest" merge site determines the locus of spell-out. In other words, *wat* is both the left hand sister of the matrix V and the right hand sister of the matrix VP in (31). But the latter is location "higher" up in the tree and therefore wins. As a consequence *wat* is part of the extraposed material.

(32) a. *Wij hebben wat hij een genie noemt benoemd*
we have what he a genius calls appointed
'We have appointed what he calls a genius'

b. *Wij hebben benoemd wat hij een genie noemt*

The structure/derivation of (32b) is identical in all relevant respects to that of (29) except that the predicative DP *een genie* is now multiply dominated only by the two VPs. This difference does not affect the point that it is the CP that is externally merged to the right of the matrix VP. I tentatively conclude that the original argument from extraposition stands, and that it does not stand in the way of interpreting the *wh*-word in FRs or the predicative DP (TN) in TFRs as an external head from the perspective of the matrix clause.

Much more remains to be said about Grosu's (2003) article, but all I can do in the remainder of this article is discuss one very general point of logic in his line of thinking.

6. Lakoff's Horn-amalgams

What drives Grosu, witness the title of his article ("A unified theory of "standard" and "transparent" free relatives"), is the desire to provide a uniform analysis for every syntactic construct that superficially looks like a headless relative clause. Unification is, of course, always a noble goal. Still, sometimes you have to think about what should be unified with what. Faced with three constructions, call them A, B and C, there might be one set of properties (for example absence of a head and appearance of a *wh*-clause) that A and B share to the exclusion of C. But there might be another property (for example transparency phenomena on the predicative XP) that is shared by B and C to the exclusion of A. In such a case we have to be careful to make the right choice. What I wish to show in the present section is that there is a construction that indeed shares with TFRs, but not with regular FRs, the property that the predicative XP exhibits transparency phenomena. The construction has been brought to the attention of the (generative) linguistic world by George Lakoff at a time when the first observations about TFRs were seeing the light and led Lakoff to (informal) conclusions that can be considered antecedents of my graft theory (cf. Lakoff, 1974). More specifically I propose to discuss a construction apparently pointed out to Lakoff by Larry Horn.[22] The following is an example:

(33) John is going to, <u>I think it's Chicago</u> on Saturday
(Lakoff, 1974:324 ex (13a))

I will use the term Horn Amalgams (HAs) to refer to this construction.

Right away we can observe that the semantic or pragmatic function of HAs is very similar to that of TFRs: the predicate XP is the semantic nucleus and the rest is a hedge by means of which the speaker distances him-/herself from the choice of the term or directly calls it into doubt. Putting it in Grosu's terms (Grosu, 2003:279), "the small clause whose predicate is the TN is felicitous just in case it is in the scope of a TFR-internal **intensional operator**". For

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22 There is a second construction that Lakoff discusses which I believe to be amenable to an analysis in terms of grafts. Lakoff credits Avery Andrews with the discovery of the relevance of this construction, which is exemplified by cases if the following kind:
(i) John invited you'll never guess how many people to his party (Lakoff, 1974:321 ex (1))
Space prevents me from pursuing this line of investigation here, but see Van Riemsdijk (2001b) for some discussion.

'TFR-internal' we can also read 'HA-internal'. Lakoff's examples show the contrast between intensional and non-intensional contexts quite clearly (Lakoff, 1974:324):[23]

(34) a. John is going to, is it Chicago? on Saturday
b. John is going to, I'm sorry to say it's Chicago on Saturday
c. *John is going to, God knows it's Chicago on Saturday
d. *John is going to, it's odd that it's Chicago on Saturday

The c- and d-examples are not hedges but rather statements of fact that are embellished or modified by some additional qualification. Putting things in a somewhat wider context, the shared element (callus), both in TFRs and HAs, seems to have the status of a quote (cf. i.a. Abbott, 2003, Geurts and Maier, 2003, Potts, to appear, Recanati, 2001, and von Fintel, 2004).

Observe that there is one quite obvious difference between TFRs and HAs. HAs are not subject to an indefiniteness restriction, unlike TFRs. This is already apparent from (33), and also shown in the following example.

(35) John is taking did he say his daughter? out today

A second difference, also illustrated in (28) is that HA's can be questions. TFRs involve (relative) *wh*-movement, hence interrogative *wh*-movement is excluded. But nothing precludes *wh*-question formation in HAs.

I will now proceed to show that the predicative XP in HAs does indeed exhibit the transparency phenomena that we know from TFRs. Consider first the issue of bound anaphors. Alongside (16) we have the corresponding HA (36).

(36) a. They live in, don't the Americans call it each other's backyard?
b. She was, I think you might call it proud of herself

Similarly, we find idiom chuncks inside HAs that are licensed by some element of the matrix clause:

(37) a. They didn't make a lot of, I think the correct term is headway
b. Bill kicked, I seem to remember you call it the bucket

The extraction facts can also be reproduced.

(38) a. Who$_i$ did they publish, I believe it was a dirty picture of e_i?
b. What conversation$_i$ did John make, I think it very probably was an unauthorized recording of e_i?

Turning now to the morphological properties, observe that Dutch adjectival agreement in HAs functions in exactly the way that we found in TFRs, cf. (13) above.

(39) *Dit is een, ik denk dat je het zou mogen noemen eenvoudig-*(e) oplossing*
this is a I think that you it would may call simple solution
'This is a, I think you might call it simple solution'

23 I am using Lakoff's own typographical devices to identify the amalgam.

As we saw before, the adjective must carry the schwa-inflection characteristic of attributive adjectives even though, from the point of view of the inserted clause, it is a predicative adjective which should not inflect.[24]

Turning now to case matching, things ought to be rather simpler since there is no *wh*-element to take into consideration. The question simply is, does the predicate nominal in a German HA have to satisfy the HA case requirement, or the matrix case requirement, or both? The following examples show that indeed both requirements must be satisfied, that is, case matching is obligatory:[25]

(40) a. *Er hat sich, <u>ich glaube das nennt^{NOM} sich</u>* {* einem$_{DAT}$ / * ein$_{NOM}$}
he has refl. I believe that calls itself a

<u>*Wahrsager*</u> *anvertraut^{DAT}*
soothsayer trusted

'He entrusted himself to, <u>I believe it is called a soothsayer</u>'

b. *Er hat sich, <u>ich glaube das nennt^{ACC} man einen$_{ACC}$ Wahrsager</u>*
he has refl. I believe that calls one a soothsayer

angelacht^{ACC}
engaged

'He has gotten himself, <u>I believe you call it a soothsayer</u>'

While space prevents me from going through the complete range of cases, I believe these facts are incontrovertible. Consequently, I feel that I have shown that HAs truly pattern like TFRs with respect to the ambiguous status of the shared element, the TN (or the 'callus' as I call it, extending the botanical metaphor).[26]

I conclude that the true unification lies in developing a theory that will account for the properties of both TFRs and HAs.[27] I believe the theory of grafts goes a fair part of the way in

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[24] Recall that, in order to satisfy the Head Final Filter the adjective is (exceptionally) extraposed inside the inserted clause. I use the dotted underline on the inflection marker to reflect the fact that it is not, properly speaking, part of the graft but of the matrix clause.

[25] The superscripts indicate the case that the respective predicates govern.

[26] I do note in passing one potential problem. HAs do not extrapose the way TFRs do. Given what I say about extraposition of TFRs above, this is somewhat unexpected. I believe the answer must be that HAs have the structure of root clauses: verb second order, no complementizer, etc. But I am not, at this point, prepared to present a more formal account of this fact.

[27] Alex Grosu (p.c.) points out an interesting asymmetry between TFRs and HAs. He observes that HAs cannot modify (be grafted onto) subjects;

(i) a. *I think it is Chicago is a large city.
b. *Is it Chicago? is a large city.
c. *It's Chicago isn't it? is a large city.

I feel, however, that these facts have nothing to do with subjects. In fact any subject that is not clause initial will tolerate a HA. Consider the following examples:

(ii) a. There were I believe it was five hijackers on the plane
b. Many Italians resent that isn't it Turin? is organizing the Winter Olympics.
c. Under no circumstances will I believe her name is Faye Lovsky ever win the European Song Contest.

the right direction. And consequently I also believe that Grosu's (2003) attempt to unify TFRs with regular FRs is on the wrong track.

7. Conclusion

On the basis of the above considerations, I conclude that it is time to take the notion of merge seriously. This implies that the theory of grafts, hitherto considered a dangerous oddity from a theoretical perspective and "only" concerned with completely marginal and exotic constructions such as TFRs and HAs, now finds itself right in the middle of the very core or narrow syntax. And the empirical range of linguistic facts that the theory of narrow syntax is to be held accountable for turns out not to be quite as narrow as some would like us to believe.

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The contrast between the examples in (i) and (ii) is due, I believe, to perceptional clause typing effects: the HAs in (i) could also be root clauses. Apparently this is a garden path situation that must be avoided. A similar confusion is avoided in the examples in (ii).

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