



Towards a Unified Theory of *Wh*- and Non-*wh*-amalgams

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In this article I address the issue of whether what I have called ‘grafts’ exist or whether they can be interpreted as regular syntactic structures. My main arguments in favor of grafts had been based on transparent free relatives, but Grosu (2003) has argued that TFRs can be analyzed on a par with ‘standard’ free relatives. In reply to Grosu, I will show that Lakoff’s syntactic amalgams display shared constituents with the same properties as those in TFRs. Hence Grosu’s unification misses an important generalization. What we have to strive for is a unified theory of constructions involving shared constituents including at least TFRs and Lakoff’s amalgams.

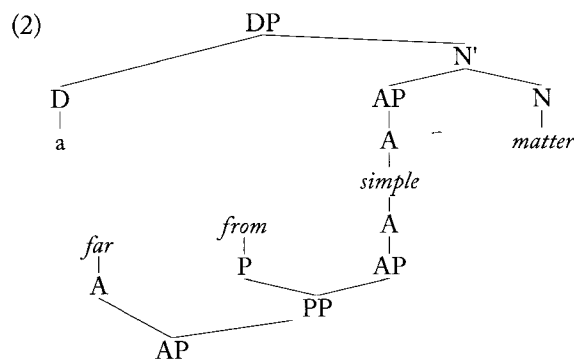
1. Grafts

Bracketing paradoxes are found not only in morphology but also in syntax.¹ Consider, for example, the following ‘headedness paradox’. In (1) we apparently find an adjective phrase *far from simple* in which *simple* seems to be the semantic head. Furthermore, *simple* should be the head because of Williams’ Head Final Filter² which excludes righthand recursion in prenominal (attributive) position, excluding such structures as **a proud of his son father*. At the same time, however, it looks as if *simple* is the object of the preposition *from* which in turn appears to be the complement of the adjective *far*. From the latter perspective, then, *far*

ought to be the head. A headedness paradox.

(1) a far from simple matter

While a simple example such as the present one may conceivably be solved by claiming that *far from* is grammaticalized and really functions as a single word modifier of the adjective *simple*, the example is illustrative for a whole range of cases that have been referred to under a variety of names: shared structure, amalgams, grafts. Interesting early discussions are actually found in some Japanese contributions, cf. Nakau (1971) and Kajita (1977). Kajita in fact specifically discusses cases like (1) and shows that there is a considerable range of them (*close on, close to, next to, other than, nearer to, greater than, anywhere near, as much as, more than, etc.*) casting doubt on the idea that grammaticalization might be involved. Other important explorations of this range of constructions are found in Lakoff (1974) and McCawley (1982, 1988). A particularly rich source of insight into syntactic bracketing paradoxes is the construction referred to as Transparent Free Relatives (cf. Van Riemsdijk, 1998b, 2000, 2001a, Wilder, 1998, 1999). What most of these studies have in common is that, at various levels of informality, they conclude that canonical tree structures (in which branches do not cross, in which multiple dominance is excluded etc.) are insufficient to handle the constructions in question. The idea in all these cases is that there is some constituent that is, in a sense, shared between two (sub-)trees that are independent of one another in every other respect. In the case of (1) above, this would amount to a structure like (2).



This is what Lakoff has called syntactic amalgams and what I refer to as 'grafts'. While quite exotic at first glance, I have argued (cf. Van Riemsdijk, 2005 and, more extensively in Van Riemsdijk, to appear) that the existence of grafts follows quite naturally from the concept of merge and the interpretation of movement in terms of remerge and multiple dominance.³ The formalization of this modified conception of phrase structure is not trivial. Insightful discussion and concrete proposals can be found in M. de Vries (2004, 2005a, 2005b).

I have called transparent free relatives (TFRs) a particularly rich source of insight into grafts. This is so because the shared constituent exhibits a variety of properties that demonstrate its ambiguous status. Let me briefly point out some of the salient properties of this construction.⁴ Consider an example like (2).⁵

(2) I ate what they euphemistically referred to as a steak

While regular FRs are either definite (as in *I ate what she had prepared*) or universally quantified ('free choice' as in *I eat whatever she prepares*), (2) is indefinite. In fact, it means something like 'I ate a steak (or at least that is what they – erroneously – called it)'. The indefiniteness is shown in *there*-insertion contexts which do not tolerate regular FRs.

(3) a. There is what I suspect is a meteorite on the front lawn
b.*There was what she had prepared on the table

What determines the indefiniteness of the TFR in (2) is the predicate nominal, hence the name 'transparent'. If we treat them as regular FRs, 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 graft hypothesis provides us with a means to achieve precisely that result: the predicate XP is the shared element, the callus.

There is ample additional evidence for this view. In regular FRs it is the *wh*-word (here *what*) that determines subject-verb agreement. But in TFRs it is the predicate nominal:

- (4) 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

Extraction out of a regular FR is not possible, but extraction out of the predicate nominal of the TFR is, while perhaps not fully felicitous, considerably better:

- (5) 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]]?

In languages in which attributive adjectives agree with the head noun, as in Dutch, the predicative adjective in a TFR agrees despite the fact that predicative adjectives never show any agreement morphology. Again, such an adjective is in a sense simultaneously an attributive and a predicative adjective:

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

Idiom chunks in the predicative XP of a TFR can be licensed by a verb in the matrix clause, but in a regular FR this is not possible:

- (7) a. They didn't make what can reasonably be considered headway
 b. *They didn't make what we attributed to considerable headway

A bound anaphor in the predicative XP of a TFR can be bound by an antecedent in the matrix clause, as shown in (8), or by split antecedents inside and outside the TFR, as in (9).

- (8) 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

- (9) 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

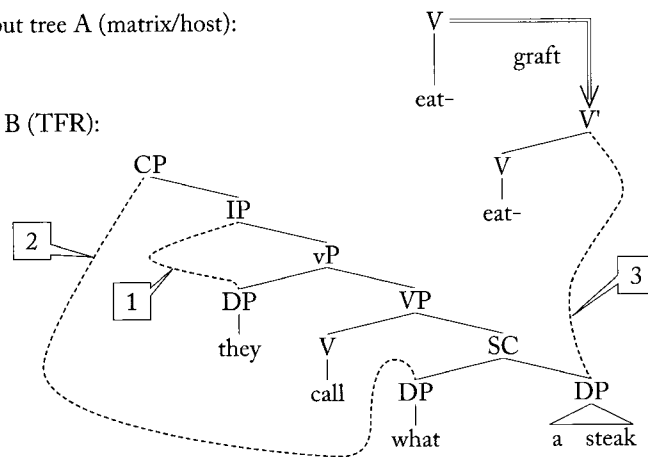
Finally, consider the phenomenon of case matching, known also from the syntax of regular FRs. While in regular FRs the case matching requirement applies to the *wb*-phrase, it affects the predicative XP in TFRs. In (10a/d) the case requirements of the matrix context and the embedded context are identical: both require the accusative in (10a) and the nominative in (10d). In (10b/c) however, the requirements are contradictory, resulting in ungrammaticality.⁶

- (10) 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 } genannt wird gekauft
 { *einen_{acc} schnellen_{acc} Wagen }
 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 } nennen wird selten gekauft
 { *einen_{acc} schnellen_{acc} Wagen }
 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'

Summing up this section, I believe that there is considerable evidence to the effect that TFRs should be treated by means of grafted trees. Let me illustrate this by sketching a simplified structure/derivation for the relevant portion of (2) above by making use of the idea that grafts arise by the application of internal/external merge (where merge is interpreted as multidominance) as briefly discussed above.

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

input tree B (TFR):



Step 1 in the derivation is immaterial to the issue at hand. Step 2 affects *what*, which is *wh*-moved to the Spec, CP of the TFR. But crucially, the small clause predicate *a steak* is externally merged with the verb *eat* of the matrix clause.

2. 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 push 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 we find 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 (6) 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, 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 (6), for instance. Grosu does not deal with this argument as such, but he discusses some relevant facts under the heading "right edge constraint" in section 7.5. (Grosu, 2003:311ff). By right edge constraint Grosu refers to Williams' (1982) Head Final Filter discussed above in connection with example (1) (cf. note 2).⁷ What Grosu apparently failed 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 (6). As a result of this exceptional AP-extrapolation, 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*):

(12) 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 (13a) and (13b).

- (13) 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 (11). Grosu is therefore 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). (11) shows that this is not the case.

In addition, of course, there are the usual empirical discussions which I will go into here only marginally. It is true, of course, 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 (14).

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

But consider again the example (3a), repeated here as (15).

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

It is still a fact that (15) contrasts with (16), despite the fact that both could be rephrased by means of some expression like *the kind of thing*, as (17) shows.

- (16) *There is what originates in outer space on the front lawn
 (17) 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

The examples in (17) may or may not be fully felicitous (hence the #-mark), but there is no denying that there is a clear contrast between (15) and (16).

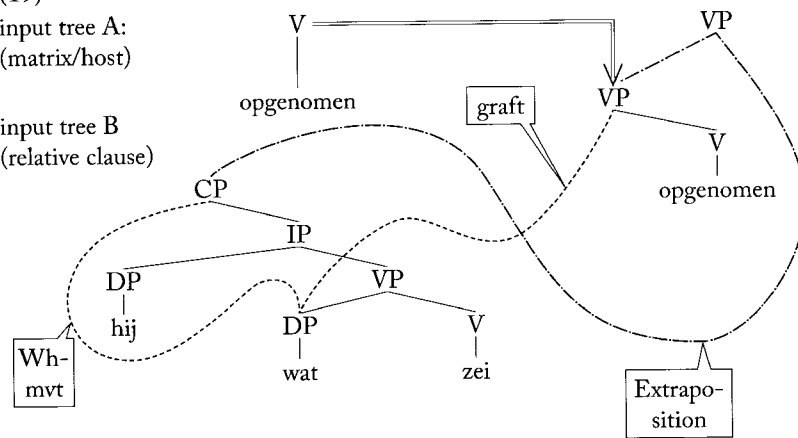
Another area where the facts are contested is that of case matching phenomena discussed above in connection with (10). It is true that judgments are notoriously difficult, especially in the domain of case morphology, where many German dialects have deficient systems compared to the standard language, but I remain convinced that there is a matching effect there which cannot be explained by assuming that case features are carried along by *was* since *was* syncretizes the nominative and accusative, a fact that is also significant in the analysis of regular FRs, see also note 6.

A last issue that I want to briefly allude to 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 I pointed it out in Groos and Van Riemsdijk (1981). The point is this. In Dutch and German, by and large, CPs can be extraposed but DPs cannot. In FRs the *wb*-word must extrapose along with the rest of the FR, hence the *wb*-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 (18) would roughly be represented as (19).

- (18) Wij hebben wat hij zei opgenomen
 we have what he said recorded
 ‘We have recorded what he said’

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

input tree B
(relative clause)



Extrapolation is possible:

(20) Wij hebben opgenomen wat hij zei

The question then is what structure we should attribute to (20). 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 (19), I have assumed that extrapolation 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. On the assumption that rightward movement does not exist, a more complicated situation arises which I will not attempt to work out here.

Observe that indeed TFRs pattern identically:

- (21) 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 (21b) is identical in all relevant respects to that of (19) 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 of that will have to wait for some future occasion.

3. 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 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.⁸ The following is an example:

- (22) John is going to, I think it’s Chicago on Saturday
 (Lakoff, 1974:324 ex (13a))

I will use the term Larry-Horn-amalgams (LHAs) to refer to this construction.

Right away we can observe that the semantic or pragmatic function of LHAs 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 'TFR-internal' we can also read 'LHA-internal'. Lakoff's examples show the contrast between intensional and non-intensional contexts quite clearly (Lakoff, 1974:324):⁹

- (23) 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 really hedges but rather statements of fact that are embellished or modified by some additional qualification.

Observe that there is one quite obvious difference between TFRs and LHAs. LHAs are not subject to an indefiniteness restriction, unlike TFRs. This is already apparent from (22), and also shown in the following example.

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

I will now proceed to show that the predicative XP in LHAs does indeed exhibit the transparency phenomena that we know from TFRs. Consider first the issue of bound anaphors. Alongside (8) we have the corresponding LHA (25).

- (25) 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 chunks inside LHAs that are licensed by some element of the matrix clause:

- (26) 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.

- (27) 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 LHAs functions in exactly the way that we found in TFRs, cf. (6) above.

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

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.¹⁰

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 LHA have to satisfy the LHA 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:¹¹

- (29) a. Er hat sich, ich glaube das nennt^{nom} sich $\left\{ \begin{array}{l} *ein_{dat} \\ *ein_{nom} \end{array} \right\}$
 he has refl. I believe that calls itself a
Wahrsager anvertraut^{dat}
 soothsayer trusted
 'He entrusted himself to, I believe it is called a soothsayer'

- b. Er hat sich, ich glaube das nennt^{acc} man einen_{acc} Wahrsager
 he has refl. I believe that calls one a soothsayer
 angelacht^{acc}
 engaged
 'He has gotten himself, I believe you call it a soothsayer'

While space prevents me from going through the complete range of cases, I believe these facts are incontrovertible. Consequently, I believe I have shown that LHAs 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).¹²

4. Conclusion

On the basis of the above considerations, and in particular the analysis of LHAs, I conclude that the true unification lies in developing a theory that will account for the properties of both TFRs and LHAs. I believe the theory of grafts goes a fair part of the way in the right direction. And consequently I also believe that Grosu's (2003) attempt to unify TFRs with regular FRs is on the wrong track.

Endnotes

- 1 This paper is dedicated to Heizo Nakajima in recognition of his contributions to generative syntax and to the flourishing of the field in Japan.
- 2 See in particular Williams' (1982) Head Final Filter, going back to the Surface Recursion Restriction of Emonds (1976:19, Emonds, 1985:131), cf. also Van Riemsdijk (1998a).
- 3 See in particular Gaertner (2001) and Bobaljik (1995). The notion of merge implies the existence of interarboreal relations in that external merge will generally join two partially formed tree structures. For interesting extensions of the applicability of interarboreal relations, see Bobaljik and Brown (1997) and Nunes (2001).
- 4 In Van Riemsdijk (2006) I argue that regular free relative clauses should also be treated as grafts, but with the difference that it is the *wb*-word (or phrase) that constitutes the

shared element. The advantage is on the one hand that the COMP vs. Head issue is resolved in that the *wb*-element is in COMP in one of the constituent trees and is a head-like constituent in the matrix clause. The other advantage is that the graft approach yields a straightforward account for the matching effects that are so characteristic for free relatives.

- 5 See Wilder (1998, 1999) and Van Riemsdijk (1998b, 2000, 2001a) for extensive discussion of these and other properties.
- 6 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 *wb*-word have the same form (*was*). As I argue in Groos and Van Riemsdijk (1981) and Van Riemsdijk (2006), 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} Auto genannt wird wird selten gekauft

- 7 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.
- 8 There is a second construction that Lakoff discusses which I believe to be amenable to an analysis in terms of grafts. This construction Lakoff attributes to Avery Andrews and accordingly I will call them AAAs. These are cases like the following:
 (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 relevant discussion.

- 9 I am using Lakoff's own typographical devices to identify the amalgam. The judgments are also Lakoff's – they may be felt as somewhat exaggerated in their contrast by some speakers.
- 10 Recall that, in order to satisfy the Head Final Filter, the adjective is (exceptionally) extraposed inside the inserted clause.
- 11 The superscripts indicate the case that the respective predicates govern.
- 12 I do note in passing one potential problem. LHAs 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 LHAs 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.

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