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Grappling with graft

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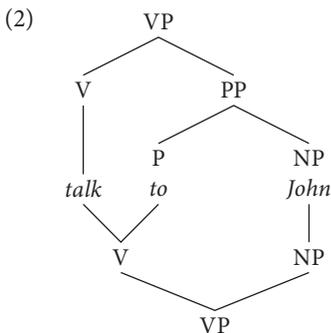
1. Preamble¹

The syntactic tree structure, a hallmark of generative grammar right from the start, quickly became a standard to which the field adhered. More or less implicitly, deviations from the core properties of trees were dismissed or, rather, not taken into consideration. Crossing branches, multiply dominated nodes and the like never really came up. But in his famous “Amherst Lectures”, Chomsky (1974) did propose a solution for pseudopassives and multiple passives that made use of a non-tree-compatible device: reanalysis. To account for the fact that objects of prepositions can sometimes be passivized, he suggested that in addition to the information contained in a canonical tree, additional groupings of nodes can be introduced, for which he used the graphical device of curly (instead of the standard square) brackets. A pseudopassive like (1a) was thus represented as in (1b).

- (1) a. John is talked to (by many people)
b. John_i is [_{VP} {_V talked to }_V [_i]]_{VP} (by many people)

The intention, of course, is to say that “talked to” is a kind of complex verb/predicate of which John is, in a sense, the direct object and hence passivizable.

Evidently, a structure like (1) is not compatible with the notion of a canonical tree. In fact it can most simply be depicted as two trees simultaneously characterizing this syntactic structure:



1. It is a real pleasure to dedicate this article to Jan Koster, who has, ever since my arrival in Amsterdam in 1970, been a great buddy, a passionate linguistics colleague, a tough critic, a paragon of erudition and last but not least a very enjoyable fellow gourmet: in short, a true friend.

Only few years after Chomsky's proposal, Lasnik & Kupin (1977) presented a formalization of phrase structure in which reanalysis finds a natural place. They define a syntactic structure as a set of so-called monostrings. Reanalysis then amounts to nothing more than the addition of a single monostriing.

- (3) {V to John, χ {V John}
 Talk PP,
 talk to NP,
 talk P John,
 talk to John}

Reanalysis and other deviations from the notion of canonical tree such as crossing branches (cf. Lakoff 1974, McCawley 1982) have mostly been treated with disdain. Jan Koster, in reply to Haegeman & van Riemsdijk (1986), has been a particularly vociferous critic (cf. Koster 1987: 279ff). The overall line of the critique has been that the "introduction" of new devices such as reanalysis renders the theory (unnecessarily) more powerful. My answer to that line of criticism has consistently been that reanalysis is actually more restrictive than head adjunction, its alternative, since it excludes the clustering of non-adjacent heads (cf. van Riemsdijk 1998a).²

Since then, a lot of water has gone down the Amstel, the Leij, the Aa, and the Arno. A variety of non-canonical types of structure³ are now gaining popularity and have found a safe haven under the broad umbrella of Merge. In my own work I have focused on what I call graft constructions.⁴

2. Some examples of grafts

In a series of publications, I have argued that two tree structures can "grow" together at non-maximal nodes, hence the metaphor "graft" (cf. van Riemsdijk 1998b, 2000, 2001, 2006a, 2006b, 2006c). Simple examples involve the resolution of apparent bracketing paradoxes such as *a far from simple matter*, where on the one hand it seems as if *from simple* is a PP-like dependent of the adjective *far*, much as in *far from Groningen*, but where the adjective *simple* is really the head of the attributive adjective phrase, both syntactically and semantically. A simple graft structure resolves the paradox:

2. The argument presupposes that head adjunction is banned as a matter of principle, which is what I propose in van Riemsdijk (1998a).

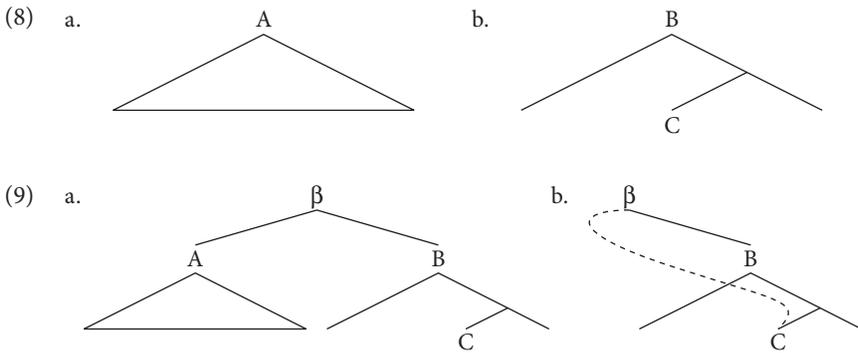
3. These include sideward movement (cf. Nunes 2001), parallel merge (Čitko 2000), three-dimensionality and multi-dominance (de Vries 2009).

4. An early precursor is Lakoff (1974), who used the term "amalgam" where I use graft.

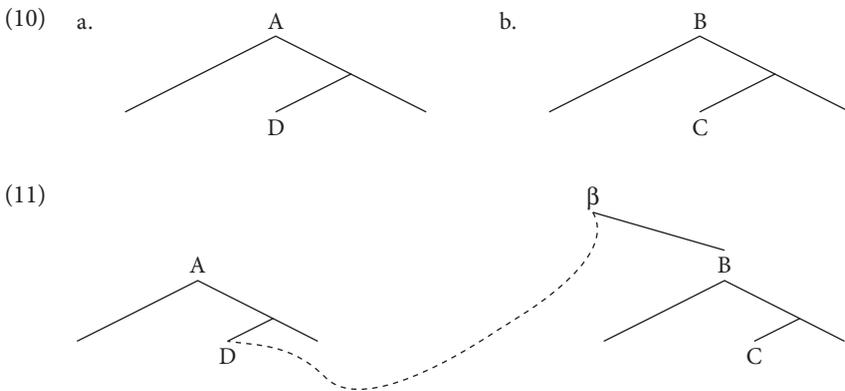
- (7) a. there are **several meteorites** lying on the front lawn
- b. what appear to be **several meteorites**

3. Graft is merge

The introduction of the notion of Merge, in particular the proposal that Move is really Internal Merge (or Remeerge),⁷ has put the issue of non-canonical phrase structure in a totally new light. Standardly, Merge will apply to (8) to yield (9a) – external merge, and (9b) – internal merge.



Observe now that Graft is merely a combination of internal and external Merge. If D is externally merged with B in (10) we derive (11), a typical graft structure.



7. See Chomsky (2005, 2008), and also Čitko (2005) for relevant discussion.

To use Chomsky's terms, a stipulation would be needed to prevent Merge from combining D and B.⁸

There is no question that Merge in the most general sense as intended here is an extremely powerful device. But the situation is not logically different from that of the late 60s and early 70s, when through the work of Ross (1967, 1986) and Chomsky (1973) the program was defined that was to lead to severe constraints on transformations, which now carry over to Move, the Internal Merge subcase of Merge. Similarly, X-bar theory can be thought of as a set of constraints on External Merge. Other subcases include Parallel Merge (cf. Čitko 2005) and Sideward Merge (cf. Nunes 2001). The situation for Graft is not different. I hope to have shown that Graft is needed. What is needed now is a program to sharply reduce overgeneration by Graft (and thereby more generally Merge). The present essay is a first attempt at offering some suggestions on how to constrain Graft.

4. Graft, internally headed relatives, and the theta criterion

One of the salient properties of TFRs is that the shared element is always a predicate nominal or adjective. (12) can only be interpreted as a regular FR, not as a TFR.

- (12) What led to insanity manifested itself when he was only 34
 = the thing that led to his insanity manifested itself when he was only 34
 ≠ insanity (or what led to it) manifested itself when he was only 34

Why should that be so? A plausible answer is provided by the Theta-Criterion. After all, in a TFR like (13), the shared element is an NP/DP. In the matrix clause, the NP/DP *a steak* is the direct object bearing the theta role theme. But in the free relative, *a steak* is a predicate, that is, an element that does not participate in theta structure. Let us say that predicate nominals are theta-neutral. Consequently, this NP/DP bears exactly one theta role, in conformity with the theta criterion.

- (13) They served me what they erroneously called a steak

In (12) on the other hand, if *insanity* is a shared nominal, it would have two theta roles, a subject theme role in the matrix clause and a goal role in the free relative. Manifestly a theta criterion violation. Hence, by this line of reasoning we predict that TFRs are limited to shared predicates.⁹

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

9. One question that arises is why it cannot be the matrix structure that is theta-neutral instead. I have no answer to this question beyond the suggestion that it might have to do with

This idea seems attractive enough except for one thing. The operation of Graft appears to yield an ideal way to deal with head internal relative clauses (HIRCs) in those languages that have them.¹⁰ Consider examples like (14) and (15) from Korean and Japanese.¹¹ The NPs *totwuk* ('thief') and *keeki* are the shared elements.

(14) John-un [_{DP}[**totwuk-i** tomangka]-nun kes]-ul cap-ess-ta
 John-TOP thief-NOM run.away-REL.IMPV KES-ACC catch-PST-DECL
 "John caught a/the thief who was running away"

(15) Yoko-wa [Taroo-ga sara-no ue-ni **keeki-o**
 Yoko-TOP Taroo-NOM dish-GEN top-DAT cake-ACC
 oi-ta]-no-o tabe-ta
 put-PST-NO-ACC eat-PST
 "Yoko ate the cake that Taro put on the dish"

The question then is, how can we have the cake and eat it too? That is, how can we preserve the explanation of the restriction to predicate nominals in TFRs of the English-German-Dutch type and still use Graft to account for HIRCs in languages like Korean and Japanese?

The answer, I would like to suggest, is to be found in the transparently agglutinative structure of noun phrases in these languages. The examples show very clearly that what is shared is the nominal without its case marker. The internal case marker is nominative in both cases, while the matrix case marker is accusative. Regardless of whether we adopt a Kase Phrase or a postpositional structure for these case morphemes, we can say that it is a case-less NP inside the relative clause that is grafted into the NP-slot of the matrix clause.¹²

Based on this observation, my proposal is to tie the location of the theta role to the position of case, as is quite natural in that case often serves to express theta information (dative/allative ≈ goal, accusative ≈ theme, etc.). This way the theta criterion violation is avoided. But then, what prevents us from circumventing the theta criterion in languages like English or German? English has no morphological case, so there is no

the fact that the graft might then not have a plausible expletive *what* that appears to be obligatory (for clause typing reasons?) in the languages in question.

10. The literature on HIRCs is vast. Here are a few of the major references: Basilico (1996), Cole (1987), Grosu (2000), Hiraiwa (2005), Kim (2004), Kuroda (1992), Tellier (1989), Williamson (1987).

11. The Korean example is from Kim (2004) and the Japanese one from Yurie Hara (pc). *Kes* and *no* are a kind of nominalizing complementizers.

12. A similar proposal is presented for attributive adjective inflection in Dutch in van Riemsdijk (2006a).

reason to assume that case projects a head of its own. German does have case, but it is highly fusional, which I take to indicate that it is impossible to distribute matrix and embedded case information over an internal and an external case head. This is, in fact, precisely what leads to the case matching effect in languages like German.

Not all languages with HIRCs have an (agglutinative) case system, however. Others, such as Dagbani, distribute determiners over the internal and external positions.¹³ And here again I suggest that these determiner positions constitute the locus of the theta role.

- (16) [n nə puhi saan-so] la tʃanya
 I SUB greeted stranger-SPEC.ID D has.gone
 “The stranger who I greeted has gone”

Other, still less transparent languages with HIRCs may use phonetically unrealized functional positions as loci for theta roles. Space and lack of knowledge prevent me from presenting a fuller picture here.

5. A typological conjecture

There is, however, an interesting typological speculation that ties in with the above analysis. There are, indeed, three typological correlations that may be related to one another, two of them well documented in the literature, the third based on my proposal in Section 3. The first of these is called OV-Generalization by Hiraiwa (2005: 240):

- (17) **HIRC-OV Generalization:** $\text{HIRC}^? \Rightarrow \text{OV}$
 (cf. Cole 1987; Culy 1990; Downing 1978; Gorbet 1977; Kuroda 1992;
 Langendoen 1977)¹⁴

The second correlation may be called the OV-Agglutination Generalization. It was originally proposed by Lehmann (1973) and taken up again in van Riemsdijk (1998a).

- (18) **OV-Agglutination Generalization:** $\text{OV}^? \Rightarrow \text{Agglutinative Morphology}$

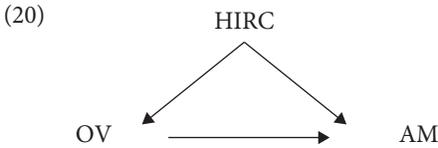
The third correlation is the one proposed above in Section 3. Let us call it the HIRC-Agglutination Generalization.

- (19) **HIRC-Agglutination-Generalization:**
 $\text{HIRC}^? \Rightarrow \text{Agglutinative Morphology}$

13. The example is from Peterson (1974: 77) as cited in Hiraiwa (2005: 216). The status of the subordinator is a conjecture, SPEC.ID stands for “specific identity”, that is specific indefinite.

14. Kuroda’s article is actually from 1974 and he attributes the generalization to S.I. Harada (p.c.).

These three generalizations fit together nicely in a typological triangle:



Full elaboration of this very suggestive typological picture must await future research, but at this point I must conclude with just a few remarks.

(17) is contested, see in particular Tellier (1989) and Hiraiwa (2005). Virtually all potential counterexamples come from the Gur group of the Niger-Congo family (West Africa), however.¹⁵ Some languages of the Gur group have HIRCs and are VO: Bùli, Mooré, Dagbani. On the other hand, some Gur languages are VO but do not have HIRCs: Dàgáàrè, Sisaala, Gurene, Kurumfe, Konni. At least one Gur language has HIRCs and is OV: Supyire.

The question arises as to whether the Gur languages could not be taken to be underlyingly OV. This, of course, is a very speculative conjecture, but note that (at least some of) the closely related Kru languages are known to be OV and to exhibit Verb Second. Furthermore, all the relevant Gur languages are postpositional. There is, therefore, some basis for this conjecture.

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15. But see also Gil (2000).

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