Romance Complex Predicates: In defence of the right-branching structure

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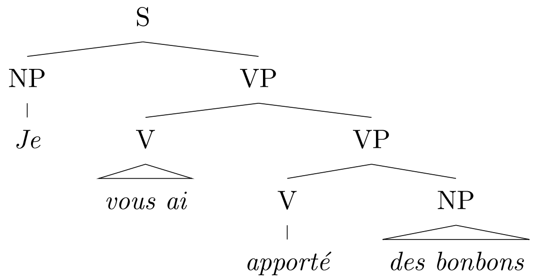
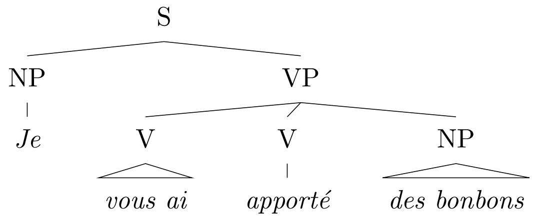
Abeillé and Godard (1994) seek to show that the rightward branching analysis of French tense auxiliaries shown in (1b), that I argued for in Manning (1992) and which is widely adopted in general, is wrong, and that rather we should adopt a flat analysis for this construction as shown in (1c), and they show how such an analysis can be realized within HPSG (Pollard and Sag 1994).

(1) a. Je vous ai apporté des bonbons
I you.DAT have brought candy
'I have brought you sweets.'

b.



c.



However, I believe that the evidence available still on balance favours the rightward-branching phrase structure, and so I will attempt to show in this paper why that structure is to be preferred and how there are responses to the points made in Abeillé and Godard (1994). I hope that this argument will seem convincing. If not, I seek still to establish a weaker point, namely to suggest that "There's more than one way to do it" (Wall and Schwartz 1994:xx). While Abeillé and Godard (1994) present many of their arguments as framework-independent arguments in favour of a flat structure, the truth is that in general this is not so. Indeed, I doubt that there is such a thing as framework-independent evidence for a particular syntactic structure. While some arguments adduced from data are more theory internal than others, I think evidence is only applicable across frameworks to the extent that frameworks share certain (often covert) assumptions. Below we will see that several of their supposedly framework-independent arguments actually are not applicable to an LFG analysis of phrase structure. Indeed towards the end, I wish to speculate a little about whether they are arguments about phrase structure at all, or whether they are really just showing the monoclausality of French periphrastic tenses. This will be considered in the context of the rise of linearization-based approaches within HPSG (Reape 1994, Pollard et al. 1993, Kathol 1995a), and their relationship to LFG (Manning 1995).

1 Arguments and counterarguments

Abeillé and Godard (1994) – henceforth A&G – present four arguments against a rightward-branching structure for French tense auxiliaries. I present my perspective on them all here, although I wish to consider these matters not merely within the context of French tense auxiliaries but within the larger domain of Romance complex predicates/restructuring constructions in general (A&G themselves note that "the core cases of **faire** illustrate the same structure" and similar HPSG structures have been employed by Monachesi (1993) for restructuring verbs in Italian).

1.1 Lack of VP movement, deletion, and pronominalization

The first argument is that while the infinitival VP complement of regular complement-taking verbs can be pronominalized, (unfelicitously?) deleted, or can appear separately (2), such structures are not possible with the putative VP complement of the tense auxiliaries, as shown in (3).

(2) a. Jean peut venir, mais il ne le veut pas
'Jean can come but he doesn't want it.'

b. Marie a voulu visiter le musée, mais moi, je n'ai pas voulu.
'Marie wanted to visit the museum, but me, I didn't want to.'

c. Que veut-elle? Partir.
'What does she want? To go away.'

(3) a. *Jean n'est pas arrivé hier à l'heure au rendez-vous, mais Marie l'est.
'Jean arrived on time at the meeting yesterday, but Marie didn't.'

b. *Marie a visité le musée, mais moi, je n'ai pas.
'Marie visited the museum, but me, I didn't.'

c. *Qu'a-t-elle? Vendu ses livres.
'What has she? Sold her books.'

Thus French periphrastic tenses do not provide the kind of classic arguments for a rightward branching VP structure that commonly appear in introductory syntax textbooks for English (Radford 1988). Indeed, A&G take this contrast to suggest that the phrase structure of French tense auxiliaries is fundamentally different. However, while these constructions do not provide evidence for a nested VPs constituency for French tense auxiliaries, absence of evidence is not evidence of absence. It would in general be too naive to say that we could only postulate constituents where they can be moved or deleted as a block since other principles of grammar constrain what is acceptable.

I believe that the observations above about French should be linked up with facts from Italian, Spanish, and Catalan, in which not only auxiliaries, but a rather nebulous class of other verbs with modal and aspectual meaning optionally show a close relationship with the following verb (phrase) (4). Evidence for this close relationship is shown both by the presence of a a clitic on the modal that semantically belongs to the lower verb and by the change of perfective auxiliary to **essere** (see Rizzi (1982), Manning (1992), and below for further discussion).

(4) Maria c'è dovuta venire molte volte.
'Maria there "is" had to come many times.'

Using a transformational approach, Rizzi (1982) dubbed such verbs as having undergone a process of 'restructuring'. I seek a non-transformational, declarative description of what is happening, and will refer to these constructions as *complex predicate* constructions. In such constructions, the final verb will be termed the *heavy* verb and earlier verbs and auxiliaries will be referred to as *light* verbs. My analysis is that tense auxiliaries in French are verbs that necessarily form complex predicates with the following verb (phrase).

Note that the same kind of prohibitions on movement, pronominalization, and deletion are found with the complement of light verbs in Italian. Since restructuring is optional with verbs other than auxiliaries, we would expect processes of complement pronominalization, deletion or separation to occur when these verbs are used as main verbs, but for these processes not to cooccur when other diagnostics of complex predicate formation are present. Two diagnostics of complex predicate formation in Italian are clitic climbing and that the choice of the perfective auxiliary reflects the transitivity of not the light verb but the following heavy verb. Normally clitics in Italian remain with the verb they are semantically dependent on (5a–b), but members of this class of modal and aspectual verbs can either behave as regular (heavy) verbs (5c) or they can be light verb in which case clitic climbing usually occurs (5d).

(5) a. Piero affermava di conoscer-**la** molto bene.
Peter says 'of' to.know-her very well
'Peter says he knows her very well.'

b. *Piero **la** affermava di conoscere molto bene.

c. Maria finisce di batter-**la** a macchina domani.
Maria finishes 'of' to.hit-it on machine tomorrow
'Mary finishes typing it tomorrow'

d. Maria **la** finisce di battere a macchina domani.

Secondly, in Italian there is an alternation in the expression of the perfective auxiliary with **essere** being used with unaccusative verbs and **avere** being used elsewhere (see Rizzi (1982) and especially Burzio (1986)).

(6) a. Piero ha/*è mangiato con noi
'Piero has/*'is' eaten with us.'

b. Piero ha/*è voluto questo libro
'Piero has/*'is' wanted this book.'

c. Piero *ha/è venuto con noi
'Piero *has/'is' come with us.'

The facts of present interest are what happens when a restructuring verb that takes **avere** as its auxiliary, like **volere** in (6b), takes a verbal complement:

(7) a. Piero ha/*è voluto mangiare con noi
'Piero has/*'is' wanted to eat with us.'

b. Piero ha/è voluto venire con noi
'Piero has/'is' wanted to come with us.'

Avere is always good, but if the downstairs verb would normally take **essere**, then **essere** is also possible.[1] Importantly for present purposes, Rizzi (1982) discusses how, if other evidence shows that restructuring has occurred (for example, the occurrence of clitic-climbing), then **essere** is necessarily used as the auxiliary, as shown in (8). Conversely, if restructuring cannot occur, auxiliary change is impossible.

(8) a. Maria c'è dovuta venire molte volte.
'Maria there "is" had to come many times.'

b. *?Maria **ci** ha dovuto venire molte volte
'Maria has had to come there many times.'

Now notice that Italian has various constructions such such as VP pied-piping accompanying *Wh*-movement (9a–b) and cleft formation (9c) that can move an infinitival VP (which can be the complement of one of these modal or aspectual verbs).

(9) a. Questi argomenti, [a discutere dei quali] verrò al più presto, mi sembrano molto interessanti.
'These topics, to discuss (on) which, I will come as soon as possible, seem to me very interesting.'

b. La casa paterna, [tornare alla quale Maria avrebbe voluto già da
the house paternal return.INF to the which Maria have.COND wanted already since
molto tempo], ...
much time
'Her paternal home, to which Maria would have wanted to go back for a long time, ...'

c. E' [ad arretrare vistosamente] che la truppe hanno cominciato.
'It is to draw back considerably that the troops have begun.'

However, this is only possible if these verbs are serving as regular heavy verbs. As Rizzi (1982) discusses, such movements are inconsistent with diagnostics of complex predicate formation such as clitic climbing (10a) or auxiliary change (10b–c). Since these constructions are possible only with **volere** acting as a main (heavy) verb, there cannot be an auxiliary change in (10b–c).

[1] Restructuring verbs that take **essere** as an auxiliary always maintain this auxiliary. I will not further discuss this point, but it in no way undermines the point that is being made.

(10) a. *Questi argomenti, a parlare dei quali ti verrò al più presto, ...
'These topics, to talk with you about which I will come as soon as possible, ...'

b. *La casa paterna, [tornare alla quale Maria sarebbe voluta già da
the house paternal return.INF to the which Maria 'be'.COND wanted already since
molto tempo], ...
much time
'Her paternal home, to which Maria would have wanted to go back for a long time, ...'

c. *E' [ad arretrare vistosamente] che la truppe sono cominciato.
'It is to draw back considerably that the troops have begun.'

Thus we note that in Italian there is evidence for an infinitival VP serving as complement to modal and aspectual verbs, and for its ability to move/appear fronted. Nevertheless, we see that this possibility cannot be combined with complex predicate formation. Now one possibility is that this difference is to be accounted for by proposing a radically different phrase structure in the cases where complex predicate formation has taken place, as A&G propose. But I would prefer to suggest that this is instead to be accounted for simply by showing that VP topicalization of this sort is inconsistent with complex predicate formation (quite independently of any choices of phrase structure for verbal complementation).[2]

Given the feature-sharing operations available in modern constraint-based grammar frameworks it is quite possible to implement the distinction between complex predicate structures and regular complementation structures by other means than proposing a different phrase structure for the two cases, and I will argue below that such an alternative is desirable. I do not wish to dally on a complete analysis of Italian pied-piping or cleft formation, but I think there is a quite straightforward approach within LFG to why these constructions are inconsistent with complex predicate formation. In a sentence like (9a), the displaced pied-piped material would have a discourse function as the FOCUS of the clause (Bresnan and Mchombo 1987). Firstly, if we suppose that possession of a discourse function is inconsistent with sharing of grammatical relations (just as Andrews and Manning (1993) argue that having a grammatical function is inconsistent with the sharing of grammatical relations), then this alone is sufficient to rule out complex predicate formation in this case.[3] But secondly, note that the focused material should be identified with its role in the clause by means of a functional uncertainty expression (Kaplan and Zaenen 1989). Such an expression should say what *grammatical function* the discourse function has within the sentence. But the key to our analysis is that the VP complement to a light verb does not bear a grammatical function (but rather is part of a domain over which grammatical functions are shared), and this makes the construction of such a functional uncertainty path impossible (Alsina 1993:240). Similarly the clefted material will gain a grammatical function in the matrix clause, and complex predicate formation will be blocked.[4]

[2] A&G (p. 159) indeed seem to realize the weakness of this argument, noting that:

> There may well exist independent reasons for which each of these constructions is impossible. Yet, it must be acknowledged that the structure proposed [the rightward-branching structure] is not supported by syntactic tests.

[3] See Andrews and Manning (1993) for details, but the essential idea is that the monoclausality of complex predicates is to be captured by saying that they are a multi-predicate domain over which grammatical relations are shared.

[4] A similar approach could be applied to *le*-pronominalization, but note that the failure of *le*-pronominalization may be for reasons other than that the complement of the tense auxiliary is not a constituent: as Kayne (1975:299)

1.2 Bounded dependencies and causatives

A&G's third and fourth arguments turn on similar questions. The observations are that a sequence of a tense auxiliary and a following verb (phrase) functions in some sense as a single clause, rather than as clausal embedding. They note that *tough* constructions and **à** infinitival relative clauses are strictly clause bounded in French (as they are in other Romance languages), as shown in (11).

(11) a. Cette chanson est facile à apprendre.
'This song is easy to learn.'

b. *Cette chanson est facile à promettre d'apprendre
'This song is easy to promise to learn.'

Similarly, for example, in Spanish, one cannot form a long distance *tough* construction with cases of regular verbal complementation (12):

(12) *Tales cosas son difíciles de insistir en hacer
'Such things are difficult to insist on doing.'

A&G then proceed to note that *tough* constructions and **à** infinitival relatives do occur with French periphrastic tenses. Similarly, apparently long distance *tough* constructions appear in Spanish just in cases where complex predicate formation is possible:

(13) Estos mapas serán difíciles de empezar a hacer
'These maps will be difficult to begin to make.'

But these arguments crucially depend on the assumption that the distinction between monoclausal complex predicate constructions and regular multiclause complementation constructions cannot be captured unless they are given different phrase structures. But in a framework like LFG the distinction at hand is most appropriately captured by giving French periphrastic tenses (and light verb constructions in Romance more generally) a representation that is monoclausal at f-structure, whereas regular VP-complement constructions have a representation that is multiclausal at f-structure. This is because f-structure is the appropriate place in LFG to capture the defining property of complex predicates: that they are domains with a single array of grammatical relations (Manning 1992, Andrews and Manning 1993, Butt 1995). But these different f-structure representations only weakly constrain possible surface phrase structure representations for these structures. In particular, they do not preclude a rightward-branching source for complex predicate constructions, as we will see below.

1.3 Manner adverbs

This leaves only some very interesting data from manner adverbs which initially do appear challenging to an LFG analysis that employs a rightward-branching phrase structure. A&G note that there is a class of manner adverbs which can appear between the tense auxiliary and the participle (14a), but not sentence initially (14b). They argue that their behaviour is inconsistent with the rightward-branching VP analysis. They suggest that these adverbs cannot be left adjoined to the lower VP because (unlike some other adverb classes) they cannot appear before a VP in other

notes, *le*-pronominalization is not accepted or marginal for a variety of other governing verbs.

contexts such as a participial absolute (14c) or a fronted infinitival clause (14d), and they cannot be a daughter of the higher VP because they cannot take wide scope over a coordination of lower VPs (14e) and such a proposal would wrongly predict a word order that allowed temporal adverbs to follow manner adverbs (14f) given that there is independent evidence that the former can left adjoin to a VP (14g).

(14) a. Jean a attentivement écouté son professeur.
'Jean listened attentively to his teacher.'

b. ??Attentivement, Jean a écouté son professeur
'Attentively, Jean listened to his teacher.'

c. ??Bruyamment sortis, les députés on fait connaître leur désapprobation.
'Loudly gone out, the M.P.s made their disapproval known.'

d. *Attentivement prendre des notes ne suffit pas à faire un bon étudiant.
'To attentively take notes is not sufficient to make one a good student.'

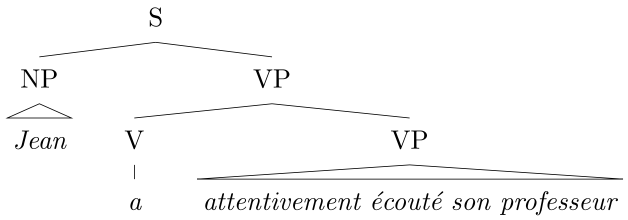
e. Jean a attentivement écouté son professeur et pris des notes.
'Jean listened attentively to his teach and took notes (*attentively).'

f. ??Jean a bruyamment immédiatement contre-attaqué.
'Jean loudly immediately counter-attacked.'

g. Immédiatement descendu, il a pu apprécier les dégâts.
'Immediately gone down, he could evaluate the damage.'

This is an interesting set of data, and in this section I will provide some tentative remarks about how these data might be handled in an LFG account that uses rightward-branching nested VP phrase structures. Although the argument from coordination (14e) depends on certain assumptions about how adverb scope is handled, I do take it as a powerful indication that the adverb does not appear in the higher VP, and therefore would adopt a phrase structure along the lines of (15) for (14a) (glossing over whether the adverb is simply the leftmost member of the expansion of the VP or forms an adjunction structure, possibly with either the VP or just the V):

(15)



If our expansion of the VP rule or possibilities for adjunction license this structure, then the question is how can we exclude the possibilities in (14c–d). In particular, (14c) shows that the exclusion cannot be based on the verbal form (VFORM feature) of the VP in which it appears. But actually things are somewhat more subtle than this, because within the theory of Andrews and Manning (1993) and Andrews (1996), the adverb is within a domain of shared grammatical relations with a finite verb. That is, they share all features of the f-projection. So one possibility would be to say that the adverb can only left adjoin to a participial verb (phrase) if it is within a finite f-projection.

An alternative would be to work simply with linear order, taking the basic generalization to be that *some* word of the verb complex should precede the manner adverb. Such a proposal could be worked out using the notion of relativized f-precedence from Zaenen and Kaplan (1995).

These remarks may appear a little tentative and unconvincing (and indeed a fuller account of adverb placement possibilities is called for), but at any rate it is important to realize that at present these data in no way provide an argument for preferring A&G's HPSG account to the LFG account being assumed here (a fuller version of which appears in Andrews and Manning (1993)). A&G do not return to a full consideration of the adverb data within the HPSG account that they present, and most importantly their account, as presented, would incorrectly generate ill-formed examples such as (15c) which are the only evidence against a structure where the adverb appears as the leftmost element of a complement VP. Therefore, while these data deserve fuller consideration, they are not (yet) an argument for choosing one approach over another.

2 In favour of the right branching analysis

In this section I present the arguments and concerns that lead me to adopt a right-branching phrase structure for French tense auxiliaries and other cases of restructuring. These arguments address three main areas: (i) concerns for a restrictive universal theory of both phrase structure and the mapping between phrase structure and functional structure within LFG, (ii) issues in the treatment of coordination, and (iii) extendability to other cases of complex predicates.

2.1 Universals of phrase structure

A basic goal of generative linguistics is to provide a constrained theory of phrase structure configurations. Within recent LFG (Bresnan forthcoming) this is generally done by assuming a modified form of X′-licensing (the modifications essentially provide for the optional realization of heads and non-heads so as to obviate the need for the movements used in GB versions of X′ theory). Such concerns for a restrictive theory of surface phrase structure would suggest as the null hypothesis a rightward-branching structure for complex predicates, as well as multiclausal VP complement constructions, since the local tree shown in (16) is in general well-attested. It is the default phrase structure not only for all cases of complementation but also for constructions like these where there are functional co-heads.

(16) [VP V VP]

In contrast, the kind of flat phrase structure that A&G propose is not broadly motivated. Indeed, if there are other ways to treat the data that they analyze in this way, then this possibility might be excluded from UG entirely.

Another respect in which I regard a rightward-branching structure as the null-hypothesis is with respect to the optionally light modal and aspectual verbs of Italian and Spanish. Contrary to common assertions that optionally light verbs can be lexically listed, Napoli (1981) shows that the membership of this class is extremely fluid: while certain verbs regularly appear as light verbs, many other verbs occasionally appear in complex predicate constructions depending on subtle features of the aspect and conceptualization of the event. The fact that verbs can slip so easily between being light verbs and heavy verbs suggests that they should have minimally different representations.

Assuming the same phrase structure for both, as in the LFG account of Andrews and Manning (1993) is a step in this direction. The difference in LFG between the light and heavy forms reduces to a difference in functional annotations, rather than having to say that the two cases have radically different phrase structures (and rather different lexical entries).

2.2 Coordination

However, the best evidence for the lower nested VPs being constituents comes from examining conjunction (the facts that we consider in this section come from Kayne (1975:97), though he was unable to provide a satisfactory interpretation for them within his model which involved gapping following sentential conjunction (see Miller 1991)). With simplex verb forms, a clitic cannot have wide scope over two conjuncts. The clitic must be repeated as shown in the examples below:

(17) a. Paul **la** déteste et **la** considère comme fort bête
'Paul hates her and considers her very stupid.'

b. *Paul **la** déteste et considère comme fort bête

c. Paul **te** bousculera et **te** poussera contre Marie
'Paul will bump into you and push you against Marie.'

d. *Paul **te** bousculera et poussera contre Marie

Miller observes that this is strong evidence for verbal 'clitics' being affixes rather than clitics, as clitics usually can take wide scope in this way (contrast English *John and Mary'll eat together tonight*). At any rate further examination of this phenomenon gives us compelling evidence for embedded rightward-branching VPs. For we observe that in compound tenses, just this sort of wide scope becomes possible:[5]

(18) a. Paul **m**'a bousculé et poussé contre Marie
'Paul bumped into me and pushed me against Marie.'

b. Paul **l**'a insulté et mis à la porte
'Paul insulted him and threw him out.'

c. La bonne femme **les** a cuits au four et fait manger à son fils
'The woman cooked them in the oven and had her son eat them.'

Here the clitic is and must be interpreted as also being an argument of the second verb (which subcategorizes for a direct object). I would argue that it is very hard to make sense of this contrast between simple and compound verb tenses under the flat structure proposal of A&G. A&G do not provide an explicit account of this data but suggest that it is an instance of non-constituent coordination, parallel to an example like (19), and that there is "a flat structure for the VPs ... with the Aux taking as complement the concatenation of the two complement lists".

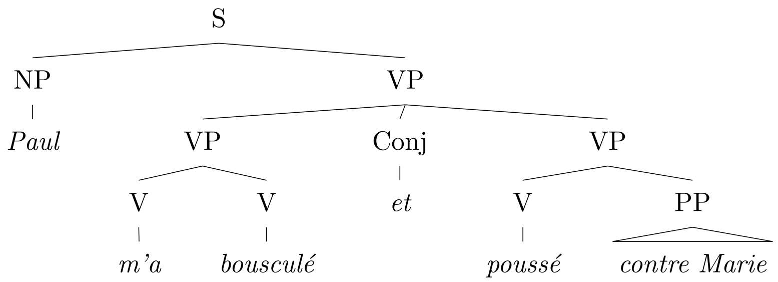
(19) Paul donnera un livre à Gilles et un disque à Henriette.
'Paul will give a book to Gilles and a record to Henriette.'

[5] Of course, possible does not mean necessary; repeating the clitics and auxiliaries is also perfectly good: *Paul m'a bousculé et m'a poussé contre Marie*. Such a sentence would be analyzed as (maximal) VP conjunction in a way exactly parallel to the examples in (17a,c).

I confess to being a little confused about precisely what A&G intend, but nevertheless I would like to make two points that I think argue against any instantiation of this approach. From an empirical point of view I wish to argue that this does not appear to be non-constituent coordination, and then, more from the viewpoint of HPSG theory, I wish to suggest that there is a serious technical problem in combining the 'argument composition' (or, better, division categories) analysis of Hinrichs and Nakazawa (1994) with coordination constructions in this way.

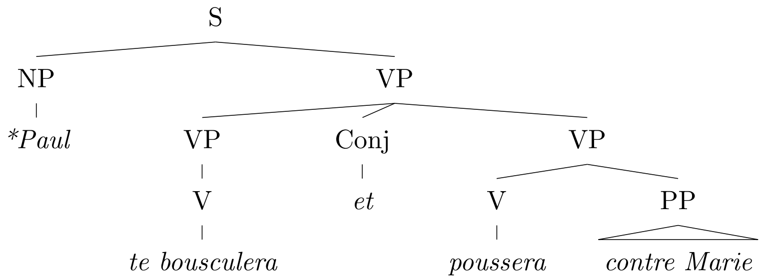
Under the assumption of a flat VP and non-constituent coordination, we have to suppose a gapped structure for these coordinations something like this:

(20)



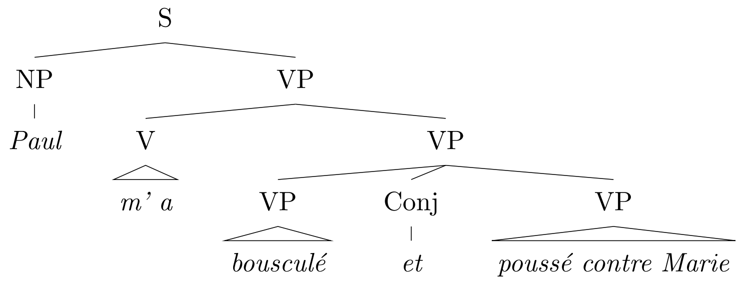
A corresponding structure for the coordination of verbs in simple tenses would presumably be as in (21). Such sentences are ungrammatical (17b,d), but there seems to be no sensible way to make structure (21) ungrammatical while continuing to admit structure (20). Any form of gapping or interpretation scheme that would allow a structure such as (20) would surely also admit the simpler structure shown in (21) but this is the wrong result.

(21)

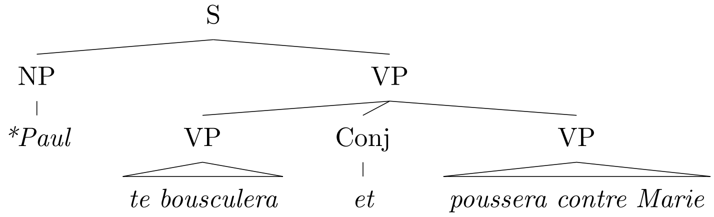


However, we can make perfect sense of the ungrammaticality of (17b,d) if we assume the rightward-branching structures shown in (22). In (22a) the object clitic is higher up and necessarily has scope over all conjuncts, whereas with a simple tense form, we have a phrase structure as in (22b). Now, the clitic is inside one of the conjuncts and so we expect this sentence to be bad because the subcategorization requirements of the verb in the righthand conjunct have been violated.

(22) a.



b.



Bratt (1990:41) contests this test for constituency, also suggesting that we could be dealing with non-constituent coordination, citing degraded acceptability when there are non-parallel conjuncts, but the data do not seem to square with cases of non-constituent coordination. In a paradigm case of non-constituent coordination, various ‘components’ can be repeated in the second conjunct and the rest appear to be syntactically or semantically reconstructed, as shown in (23).

(23) a. Paul gave the cassettes to Marie on Wednesday and the CDs on Thursday.

b. Paul gave the cassettes to Marie on Wednesday and to Kim on Thursday

c. Paul gave the cassettes to Marie on Wednesday and the CDs to Kim on Thursday.

We would thus predict that it should be possible to introduce a different direct object into the second conjunct. But this is not the case: it is necessary to gap arguments that are realized as clitics on the verbal auxiliary in all conjuncts, as shown in (24).

(24) a. *Paul l’a frappé et mis sa soeur à la porte
‘Paul struck him and threw his sister out.’

b. *Je lui ai parlé et écrit à sa femme
‘I spoke to him and wrote to his wife.’

Again this makes perfect sense if one adopts the rightward-branching structure shown in (22a). The clitic on the auxiliary must distribute over both conjuncts; it cannot play a role in just one. Moreover, note that the construction we are dealing with is not an allowed type of nonconstituent coordination in English. Compare this example and its English translation:

(25) Paul m’a bousculé et poussé contre Marie
‘Paul bumped into me and pushed me against Marie.’

Note how in the English translation, *me* must be repeated in each conjunct. If the second *me* is omitted, the meaning of the sentence is completely changed: it cannot retain the same meaning via semantic reconstruction. To the extent that non-constituent coordination is parallel between English and French, this is an unexpected result under a theory that pins this data on non-constituent coordination.

Again this set of observations apply not only to the tense auxiliaries in French. Similar conjunction facts hold for causatives and for restructuring verbs in other Romance languages. For example, embedded VPs can be conjoined after **faire** in French (26a) and after restructuring verbs in Spanish (26b–c).

(26) a. Marie le fera lire à Jean et déchirer par Paul
‘Marie will make Jean read it and Paul tear it up.’

b. Carlos me siguió topando y empujando contra María
'Carlos kept on bumping into me and pushing me against María.'

c. Carlos me estaba tratando de topar y de empujar contra María
'Carlos was trying to bump into me and push me against María.'

Note, here, that prepositional markers (e.g., **de**) are repeated on each conjoined infinitive. Under Miller's analysis, this would be indicative of these markers also being inflectional affixes. The arguments for a rightward branching VP analysis are perhaps stronger with some of these light verbs since I believe that they cannot be gapped in other circumstances (whereas French tense auxiliaries sometimes can be).

2.3 A technical problem for the HPSG 'function composition' approach

There remains one other issue in the HPSG treatment of coordination in the presence of 'function composition' auxiliaries that strikes me as problematic. Consider a sentence such as (27a). Under the function composition approach, the auxiliary verb would be given a lexical entry such as (27b) so that it would combine with the heavy verb and inherit its complements, which would then be discharged as sisters of the auxiliary. But what happens then when there is a coordination, as in (27c)?

(27) a. Paul a frappé Pierre.
'Paul struck Pierre.'

b. $$\begin{bmatrix} \text{SUBJ} & \langle \text{NP}_i \rangle \\ \text{COMPS} & \boxed{1} \oplus \begin{bmatrix} \text{VFORM} & \text{PPART} \\ \text{COMPS} & \boxed{1} \end{bmatrix} \end{bmatrix}$$

c. Paul a frappé Pierre et mis sa soeur à la porte
'Paul struck him and threw his sister out.'

It appears that any attempt to 'share' the auxiliary between the first and second conjuncts (regardless of whether this involves the rightward-branching analysis or reconstructing a second copy of the auxiliary under the non-constituent coordination analysis) would lead to problems in the presence of the lexical division categories analysis of auxiliaries because contradictory subcategorization requirements will be placed on the auxiliary. In particular, here the first conjunct subcategorizes for one complement, while the second conjunct subcategorizes for two. This problem (noted in passing in Kathol (1995b)) deserves further attention.

However, this example is straightforwardly handled in LFG (for example, under the constituent coordination proposal of Kaplan and Maxwell (1988)). The coordination introduces a set of f-structures to represent the sentence, and the subject and information from the auxiliary (including clitics, if present) is distributed over the elements of the set, as shown schematically in (28).

(28) $$\left\{\begin{array}{l}\left[\begin{array}{ll}\textsc{subj} & [\text{ Paul }] \\ \textsc{obj} & [\text{ Pierre }] \\ \textsc{pred} & \text{`hit}\langle\textsc{subj}, \textsc{obj}\rangle\text{'}\end{array}\right] \\ \left[\begin{array}{ll}\textsc{subj} & [\text{ Paul }] \\ \textsc{pred} & \text{`put}\langle\textsc{subj}, \textsc{obj}, \textsc{obl}_{\text{go}}\rangle\text{'} \\ \textsc{obj} & [\text{ his sister }] \\ \textsc{obl}_{\text{GO}} & [\text{ door }]\end{array}\right]\end{array}\right\}$$

On the other hand, I should not conclude this section without mentioning that some things that I had earlier thought problematic for verbal complex and flat analyses of these Romance constructions have turned out not to be problems, and my earlier assertions show only limitations of my analytic creativity. For instance, I had tended to feel that the way the negative **ne ... pas** wraps itself around the first verbal word had a more natural explanation under a rightward-branching analysis than under the flat analysis. But the neat account of the distribution of **pas** in Kim and Sag (1995, 1996) shows that this is not so.

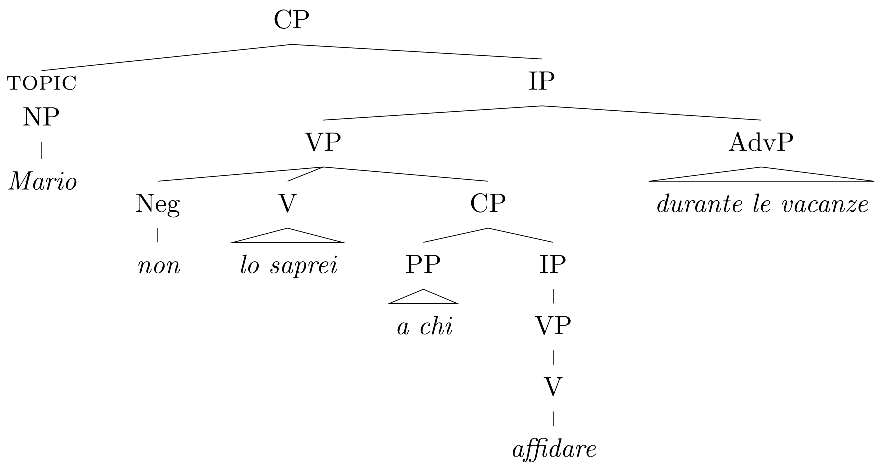
2.4 Colloquial Italian

However, Rizzi (1982:35–36) mentions a special case of restructuring in Italian that I think does give further powerful support for separating the concept of whether something is or is not a complex predicate from issues of phrase structure. Unfortunately, the phenomenon is rather restricted, occurring in limited contexts only in colloquial Italian, but the data is very suggestive and so I will mention it here. The phenomenon is that complex predicates can occur that involve the verb **sapere** which takes a CP complement. So we get the data in (29). The structure of (29b) is presumably roughly as in (30). Various details of this proposed structure are open to question, but unimportant. However, I take it as beyond question that **sapere** is here taking a full complement clause – a CP or its equivalent in other theories. On the other hand, note the clitic climbing which is definitive evidence of complex predicate formation.

(29) a. Su questo punto, non ti saprei che dire.
'On this point, I you wouldn't know what to tell.'

b. ?Mario, non lo saprei a chi affidare, durante le vacanze.
'Mario, I him wouldn't know to whom to entrust, during my holidays.'

(30)



I believe such data have no natural explanation in the argument composition approach (if argument composition is taken to represent the surface phrase structure – more on this below). Such data suggests rather that complex predicate formation is a more abstract process that must be somewhat divorced from a particular phrase structure configuration. We want to be able to say that although such sentences preserve the same surface phrase structure as other instances of CP complementation, that, marginally, the CP can cease to be a COMP at f-structure, but instead form a complex predicate with the characteristic sharing of grammatical relations across the whole domain. I also believe stronger evidence for the LFG separation of c-structure and f-structure can be found in other languages. For example, Butt (1995) shows that Urdu has complex predicates without any requirement of adjacency between a light verb and its heavy dependent verb. Moreover, she shows that the permissive light verb and verbs of telling have the same surface phrase structure, but differ in that the former is a light verb that can form complex predicates while the latter cannot.

3 Adding linearization to the pot

The theme of the first section of the paper was that the data that Abeillé and Godard (1994) present were speaking to the issue of French periphrastic tenses being monoclausal, and that in LFG this is an issue of grammatical relations structure (f-structure), not surface phrase structure (c-structure). If we take Abeillé and Godard (1994) to simply be arguing that French periphrastic tenses have a flat (i.e., monoclausal) grammatical relations structure, then I am in perfect agreement with them. There is no argument. Similarly when A&G (p. 164) remark that they agree with the analysis that "a sequence made of an aux + a participle + the complements has in a certain sense two heads: a morpho-syntactic one (the aux) and a semantic one (the participle)", then this analytic goal is completely consonant with the motivations underlying Andrews and Manning (1993) and Andrews (1996). The question, then, is whether A&G should be interpreted as talking about surface phrase structure or about grammatical relations structure. Overtly, A&G seem to be talking about the former. But it is worth noting that much recent HPSG work has been arguing for introducing an Order Domain level that then reflects the surface phrase structure, while the traditional HPSG daughters structure no longer need do so (Reape 1994, Pollard et al. 1993, Kathol 1995a, Kathol and Pollard 1995, Gunji 1995). If this analytic approach is adopted, Manning (1995) argues that the correct comparison between HPSG and LFG is to compare LFG c-structures with HPSG order domains and LFG f-structures with HPSG 'syntax' (the DTRS and VALENCE parts of the *sign*) –

essentially, because the c-structure and the order domain are the levels in each framework that are required to reflect the observed word order and constituency constraints of the language being analyzed, while the f-structure in LFG and the DTRS and VALENCE features in HPSG indicate syntactic depence and obliqueness at the level of grammatical relations. Thus I am in danger of falling into the trap of arguing with a moving target – in particular note that Kim and Sag (1996) make a couple of non-committal remarks (e.g., p. 33) that they might want to employ order domains and linearization in their treatment of adverbs in English and French. It would be nice if the HPSG position was clarified in this respect.[6] In the meantime, though, I will continue to assume that A&G are writing about surface phrase structure, and the arguments of the preceding section then still stand.

4 Conclusions

This paper has had a very limited aim: reassessing the flat versus right-branching structure debate in the light of Abeillé and Godard (1994). I have not aimed to present an LFG analysis of Romance auxiliaries and other complex predicate constructions; for that see Alsina (1993), Andrews and Manning (1993) and Andrews (1996). However, I hope that I have established that a variety of evidence does still suggest that French periphrastic tense constructions, and Romance complex predicate constructions in general, do have a rightward-branching phrase structure, and that the phenomenon of monoclausality that complex predicates exhibit can and should be given a more abstract characterization than in terms of phrase structure.

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[6] Though, on the ground, the issue of whether to do linearization or not seems to have existed now for several years with no sign of it going away any time soon.

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