Romance pronominal clitic systems feature “climbing” of the pronom from the verb it is an argument of to some other verb, like an auxiliary or a restructuring verb. Consider for example the following French sentences:

1. Alice les envoie.
2. Alice les a envoyés.
3. ‘Alice sends them.’

This apparent displacement (i.e. from the downstairs verb to the upstairs verb) suggests syntactic mobility, while the clitics’ attachment properties suggest they are morphologically bound. To resolve this analytical paradox, generative studies have typically resorted to movement to deal with the syntactic aspect of the problem (Kayne, 1977), while in lexicalist frameworks like HPSG emphasis has been placed on the morphological properties.

Previous HPSG analyses of French clitic climbing (Miller & Sag, 1997; Abeillé & Godard, 2002) therefore rely on argument composition (Hinrichs & Nakazawa, 1990) whereby the auxiliary inherits the argument structure of its participial complement, allowing the arguments of the lower verb to be realised on the auxiliary. This mechanism effectively triggers systematic object raising in all analytic tenses (in fact, in all complex predicates where clitic climbing is possible), and has therefore the important side-effect of giving rise to a flat structure (Figure 1a) for such constructions, as opposed to the hierarchical structure traditionally assumed in generative grammar (Figure 1b).

In this paper we build on recent developments in morphological theory and propose to account for clitic climbing in French analytic tenses as an instance of inflectional periphrasis, where the lexical verb delegates parts of inflectional exponence to the auxiliary. We suggest that this opens up the possibility to maintain a standard hierarchical structure of VP, and we argue in favour of this structure on empirical and theoretical grounds.

1 Climbing by argument composition

1.1 The classical HPSG approach

Based on the rigorous application of Zwicky & Pullum (1983)’s diagnostic criteria in Miller (1992), Miller & Sag (1997) argue that French pronominal clitics should be regarded as pronominal affixes, lexically attached to their host, rather than as postlexical clitics: in particular they exhibit a high degree of selection with respect to their host (A), arbitrary gaps in the set of combinations (B), as well as morphophonological (C) and semantic idiosyncrasies (D), they are subject to haplogy, and cannot take wide scope over a coordination of hosts.

In order to do full justice to their affixal status, Miller & Sag (1997) propose a lexical analysis of French clitics: more specifically they suggest that pronominal affixes lexically realise arguments of their host. Building on argument composition (Hinrichs & Nakazawa, 1990), they generalise this approach to clitic climbing, as observed with tense auxiliaries, such as avoir and être: if these auxiliaries inherit the argument structure of their complement, as sketched in Figure 2, these arguments will be locally available on the auxiliary, including morphological expression as pronominal affixes. Argument composition implies that the verbal complement of the auxiliary be unsaturated, i.e. a lexical verb, rather than a VP. They cite evidence due to Abeillé & Godard (2002) suggesting that the complements of French auxiliary avoir/être do not behave like VP complements in English or like the complements of French modals. In particular, they cannot be fronted, nor can they be pronominalised or elided.

(3) * Jean croyait avoir compris, mais il ne l’avait pas. Jean believed have understood but ‘he had not
(4) * C’est trop de vin qu’il a it is drunk too much of wine that he has
(5) Jean peut venir chez nous, mais il ne le veut pas. Jean can come to us but ‘he wants not
‘Jean can come to our house but he doesn’t want to.’
(6) C’est partir au Japon qu’il veut. it is leave.to.the Japan that he wants
‘It is going to Japan what he wants’

Abeillé & Godard (2002) argue that argument composition captures these properties quite effortlessly, since under their account, auxiliaries do not take a VP as their complement, but a lexical V the arguments of which are raised.

Another important observation pertaining to clitic climbing relates to the boundedness of the phenomenon, a property which is quite well captured by argument composition, but quite less so by A-movement or SLASH feature percolation.

1.2 Discussion

1.2.1 Coordination

A first problem faced by the argument composition approach is the coordination data illustrated below.

(7) Alice envoie un SMS et obtient un code. Alice send.PRS.3SG a text and get.PRS.3SG a code
‘Alice sends a text and gets a code.’
(8) Alice a envoyé un SMS et obtenu un Alice have.PRS.3SG send.PTCP a text and get.PTCP a code.
‘Alice has sent a text and gotten a code.’

Under a traditional layered structure analysis, the two examples (7–8) receive a uniform analysis as VP coordination. Under the flat structure posited by Abeillé & Godard, however, the coordination in (8) is unpredicted, since the conjoined sequence does not form a constituent. Abeillé & Godard suggest resorting to a non-constituent coordination analysis, but this amounts to generalizing to the worst case, as to our best knowledge no criterion has been used to show a difference in status between (7) and (8).\(^1\)

1.2.2 Dissociation of clitic climbing and VP status

The classical approach to French tense auxiliaries derives its elegance from the fact that it relates clitic climbing as well as the failure of the participial VP complement to undergo extraction or pronominalisation to a single unifying property, namely argument composition.

However, upon further scrutiny, we find that these empirical properties are actually disconnected: To start with, auxiliar avoir et être are not the only temporal auxiliaries in French whose verbal complements fail to extract, pronominalise or elide. As shown in (9) and (10), the very same holds for the auxiliaries aller and venir de, which are used in the futur proche and the passé récent.

---

\(^1\) It should also be noted that the non-constituent analysis is considerably more complex than the straightforward VP coordination analysis, and that no efficient computational implementation has so far been developed for it.
Most interestingly, neither of these auxiliaries may serve as a host for clitic climbing.

Furthermore, clitic climbing is also attested for the copula and passive auxiliary être.

However, their verbal or predicative complements can in fact be extracted or pronominalised, as shown in (15) and (16) (Abéillé & Godard, 2002).

Following Miller (1992), we attribute this property to the morphological selectivity of pronominal affixation.

1.2.3 Bounded dependencies

Another argument for argument composition is the transparency of analytic tenses to bounded dependencies, such as à-infinitival modifiers. In example (19), a dependency is established between the direct object of the verb and the noun modified by the whole construction, even though the same dependency fails to be established across a control construction (20) (Abéillé & Godard, 2002).
Yet another empirical argument put forth by Abeillé & Godard is the placement of a subclass of manner adverbs, exemplified by bruyamment. Like most French adverbs, members of this class can intervene between the auxiliary and the participle; however, this is, according to Abeillé & Godard, the only context in which they can pre-modify a verb, as the sentences in (23-24) show. Furthermore, when the participle is involved in a coordinate structure (25), they have narrow scope over the first conjunct only.

(23) Elle est bruyamment sortie.  
    she is noisily exited  
    ‘He has gone out noisily.’

    noisily exited she is come back soon  
    ‘Having gone out noisily, she came back soon.’

(25) Jean a attentivement écouté son professeur et pris des notes.  
    Jean has attentively listened his professor and taken notes  
    ‘Jean has carefully listened to his teacher and taken notes.’

These data are taken to jointly show that the adverb can neither attach to the participle (otherwise sentence in (24) should be grammatical) or to the auxiliary (otherwise sentence (25) should allow wide scope over the whole coordinate structure). They suggest that the appropriate attachment is to the root of the flat structure.

There are two important issues with this argument, one empirical, the other theoretical. First, the empirical status of the data is far from clear. Examples from corpora and the literature alike contradict the alleged unacceptability of the preverbal modifier is more commonly past, at least in some varieties of French.

Second, a flat VP structure where modifiers are interspersed or may not (in the non-compositional case) correspond to the tactical features and purely morphological features further allows the expression of the relevant morphosyntactic properties to originate on the lexical verb; a distinction between morphosyntactic features and purely morphological features further allows the lexical verb to impose constraints on the morphological features of the auxiliary, which may (in the compositional case) or may not (in the non-compositional case) correspond to the morphosyntactic properties that the periphrase inflects for. The tree in Figure 3 provides a simplified schematic representation of feature percolation in a basic French composed tense.

3 Analysis

In what follows, we are going to propose a reanalysis of clitic climbing in French analytic tenses in terms of morphological periphrasis. We argue that once climbing is understood as a morphological phenomenon, French clausal syntax can be uniformly analysed in terms of a layered VP structure. We show that this move is beneficial for three main reasons: First, it provides for a straightforward analysis of conjoined participial phrases in terms of standard constituent coordination. Second, it facilitates semantic composition, permitting the use of binary branching interleaved head-complement and head-adjunct structures, as opposed to n-ary branching head-complement-adjunct structures. And third, it completely avoids spurious ambiguity with passives or predicative XPs.

---

For our purposes, a characterisation of the aspectual contribution of the periphrase as perfectivity will suffice. For a more in-depth study of the French TAM system, see Verkuyl et al. (2004).
3.1 Clitic climbing as periphrasis

The intuition behind the periphrasis approach that we propose is as follows: As we have seen in section 2, the mutual selection relation between the auxiliary and the lexical verb in French analytical tenses is independently required to capture the periphrastic nature of these constructions. Reverse selection, which constitutes half of this mutual selection, provides a direct way for the lexical verb to impose constraints on the morphology of the auxiliary: it enables the past participle to defer the realisation of various inflectional properties to the auxiliary. In much the same way, it will let the past participle defer the morphological realisation of its arguments to an auxiliary. All that is required is a morphological representation of the pronouns that express the argument which will be relegated to the auxiliary. As we have already mentioned in section 1.1, French weak forms are best understood as lexically bound pronominal affixes, i.e. the morphological realisation of a verb’s arguments. An encoding of these affixes as verbal morphology therefore seems most adequate.

Following Bonami (2015), who relies on (head) projections to percolate the reverse selection feature, we make REV-SEL a HEAD feature. Indeed, the phenomenon we are interested in is a bounded dependency, and consequently only the participle and its projections in syntax should be able to pass on the periphrastic exponence constraint. This analysis of clitic climbing as periphrastic exponence is therefore compatible with the hierarchical structure of the VP defended in section 3.2, since the VP projected by the participle will successfully inherit its head’s REV-SEL constraint via the Head Feature Principle.

The auxiliary entry in Figure 4 shows the auxiliary taking a VP complement whose REV-SEL feature has to be matched against its own inflection (INFL). This contains the auxiliary’s lexical identity (LID), which ensures the appropriate auxiliary (avoir or être) is used, as well as inflectional features not relevant to clitic climbing: INFL also contains a PRAF feature that contains a (possibly empty) set of pronominal affixes. We choose to make REV-SEL a list-valued feature mainly to allow it to stay empty: non-auxiliary verbs can then constrain their verbal complement to have an empty REV-SEL.

The AVM in Figure 5 illustrates the periphrastic exponence rule that participles are subject to. This rule simply inserts the content of the PRAF feature into REV-SEL, thus delaying the realisation of any pronominal affixes to the auxiliary. The type periphr-inf-rule can be cross-classified with inflectional rules, e.g. the participle rule.

The tree in Figure 6 summarises the analysis. We represent pronominal affixes as objects of type proaf. These objects contain two features, INDEX and MARKING. The former stores the index of the argument to be realised, which serves two purposes: it allows the correct semantics to be derived by binding the index of the lexical verb’s argument to the pronominal affix realised on the auxiliary; and the person, number and gender features contained in the index determine the proper realisation. The MARKING feature reflects the affixes’ sensitivity to grammatical function. Taken together, these two features thus contain all the information that auxiliaries need to access in order to produce the correct realisation and establish proper reference.

3.2 VP extraction and pronominalisation

As we have discussed in section 1 above, the main evidence in favour of a flat structure independent of clitic climbing is provided by the failure of the tense auxiliaries’ complement to undergo extraction, pronominalisation, or elision, and we further observed in section 1.2.2 that this property is independent of clitic climbing.

Under the lexical, head-driven approach to unbounded dependencies (Sag, 1997; Bouma et al., 2001; Ginsburg & Sag, 2000), gaps are represented on argument structure, in terms of a synsem type gap-ss distinct from that of canonically realised arguments (canon-ss). Thus, in order to control whether a complement can be extracted or not, it appears sufficient to constrain it to be of type canon-ss. Thus, by restricting the VP complement of tense auxiliaries such as avoir/être and venir/dealler to be of that type, non-extractability is readily captured.

Given that pronominalisation of French VPs is expressed by pronominal affixes, the same constraint will equally account for the pronominalisation facts, because aff-ss is a just another subtype of a non-canonical synsem (cf. Miller & Sag, 1997).

Finally, if we assume that unexpressed arguments, as found in VP ellipsis, are equally a case of non-canonical realisation — an assumption explicitly made in the English Resource Grammar (Copestake & Flickinger, 2000) — all three phenomena are straightforwardly accounted for by a simple constraint. In contrast to the flat structure approach, this constraint generalises across constructions with and without clitic climbing.

One case that we have glossed over so far concerns the possibility of partial fronting with passives and predicatives (Abœillé & Godard, 2002).

(29) Envoyée, la lettre l’a été à Marie.

sent the lettre Cldo has been to Marie

‘Sent, the letter has been to Mary.’

Most strikingly, the auxiliaries that permit partial fronting are exactly the ones that independently allow extraction of their XP complement. Conversely, auxiliaries that do not permit fronting of their VP complement, such as tense auxiliaries, do not allow partial fronting of V either. This provides further evidence that canonicity of realisation is actually a lexemic property. To derive partial fronting, we shall propose a lexical rule for partial fronting that (i) restricts the verbal or predicative complement of an auxiliary to be non-canonical and (ii) raises the arguments of this complement onto its own argument structure. Thus, we derive the connection between XP fronting and partial fronting, effectively rule out application to tense auxiliaries, which are lexically constrained to take a canonical VP complement, and avoid spurious ambiguity for in situ passives and predicatives. Under the morphological perspective we have proposed here, the treatment of clitic climbing is largely independent of the VP’s constituent structure. Therefore, we can restrict argument composition to the only irreducible case, namely partial fronting, while enjoying the advantages of a layered VP structure for coordination and modification.

4 Conclusion

Building on recent advances in the theory of inflectional periphrasis, we have argued for a fresh look on clitic climbing in French, picturing the phenomenon as a morphological dependency. We have subjected the original evidence in favour of a flat VP structure to further scrutiny and concluded that the evidence from modifier placement is inconclusive, and that flat VP structures resulting from argument composition severely complicate the treatment of VP coordination. We have further shown that the impossibility to extract or pronominalise complements of auxiliaries is dissociate from the possibility of clitic climbing. Finally, we have argued that à-infinitivals are passive-like constructions to be treated in terms of simple subject raising.

In our analysis, which builds on Bonami (2015), we use inside-out selection to model periphrastic exponence of both tense and argument realisation. While this morphological perspective is fully in line with the morphological status of French pronominal affixes, including boundedness of climbing, it is at the same time compatible with a layered VP structure, simplifying the analysis of VP coordination in analytic tenses. Finally, we suggested that the extraction and pronominalisation facts found with tense auxiliaries can be captured straightforwardly by means of the distinction between canonical and non-canonical synsem objects.
References


