Clitic climbing in French complex predicates: a periphrasis account

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Clitic climbing, defined in Romance as the non-local realisation of clitic or affixal arguments, is limited in modern French to four cases: tense auxiliaries *avoir* and *être*, copular and passive *être*, causative *faire* ("make") and *laisser* ("let"), and certain perception verbs like *voir* ("see"). Examples (1-4) illustrate the phenomenon in the four classes of constructions, respectively.

(1) a. Le chat l'   a   cassé.
       the cat DO.SG havePRS.3SG broken

   'The cat broke it.'

   b. Le chat y   est   allé.
      the cat LOC be.PRS.3SG gone

   'The cat went there.'

(2) a. Un chat leur sera   donné.
       a   cat IO.PL be.FUT.3SG given

   'A cat will be given to them.'

   b. Le chat nous est   supérieur.
      the cat 1PL be.PRS.3SG superior

   'The cat is superior to us.'

(3) a. Je le   ferai   manger au   chat.
       I   DO.SG.M make.FUT.1SG eat   to.the cat

   'I will make the cat eat it.'

   b. Je le   laisserai   manger au   chat.
      I   DO.SG.M let.FUT.1SG eat   to.the cat

   'I will let the cat eat it.'

(4) Je l'   ai   vu   casser par le   chat.
    I   DO.SG have.PRS.3SG seen break by the cat

   'I saw the cat break it.'

Within Head-driven Phrase Structure Grammar (HPSG, Pollard & Sag, 1994), French clitic climbing has been analysed (Abeillé & Godard, 2002; Abeillé et al., 1997; Abeillé et al., 1998) as a case of argument composition (Hinrichs & Nakazawa, 1990), i.e. generalised raising of the downstairs verb's arguments by the auxiliary. In a more recent proposal, Aguila-Multner & Crysmann (2019) suggest an approach to clitic climbing based on the morphological relation that holds between the two verbs, building on a model of inflectional periphrasis in HPSG by Bonami & Webelhuth (2013); Bonami (2015). However, their analysis only accounts for temporal, passive and predicative constructions. In this paper we extend their periphrasis approach to causative and perceptive constructions.

We follow Abeillé et al. (1998) (after Hyman & Zimmer, 1976) in assuming two types of causative constructions in French, a generalisation summarised in the following section. The proposals based on argument composition by Abeillé & Godard (2002); Abeillé et al. (1998) are then presented in section 2. Section 3 argues for an inside-out approach that gives more control to the downstairs verb, and an analysis based on periphrasis is laid out in section 4.
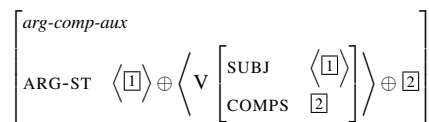

Figure 1: Argument composition

1 Two types of French causatives

When *faire* is followed by an infinitive, it can give rise to two sorts of causative meanings. One takes the form of a three-place predicate assigning roles to a causer, a causee, and a caused event; the first corresponds to the subject of *faire*, the second to an object of *faire* co-indexed with the downstairs verb's subject in a control construction, and the third argument corresponds to the verb phrase. We call this type of *faire* "control *faire*". The other *faire* only assigns two roles: a causer and a caused event. This type of *faire*, which we call non-control *faire*, contrasts with control *faire* in the semantic inferences it gives rise to: since a causee role is assigned by control *faire*, this kind of causation is generally interpreted as being direct, while non-control *faire* does not license such inferences (Abeillé et al., 1997, pp 66-67).

Several syntactic properties correlate with this distinction. Firstly, climbing is only licit with non-control *faire*. Secondly, realisation of the downstairs subject differs considerably between the two constructions. Morphosyntactic marking of the downstairs subject in the non-control case depends on properties of the downstairs verb: it is a direct object bare NP (alternating with an accusative affix) with intransitives, but an indirect object NP marked with *à* (alternating with a dative affix) with transitives. Whichever marking is assigned, non-affixal realisation of the downstairs subject in the non-control construction follows the infinitive, its position with respect to any possible complements being free. In the control case, in contrast, the causee is most often an accusative clitic, or rarely a dative, with no possible phrasal realisation.

2 Argument composition

Argument composition approaches to clitic climbing (Abeillé & Godard, 2002; Abeillé et al., 1997; Abeillé et al., 1998) rely on raising of the entirety of the downstairs verb's argument structure (and/or valence lists) by the upstairs verb. Arguments that are inherited in this way are naturally predicted to be hosted by the upstairs verb whenever they are affixal. In the case of causatives, non-control *faire* is then analysed as an argument composition auxiliary. Figure 1 gives a schematic representation of such verbs.

One key characteristic of this approach is the flat verb phrase structure that argument composition gives rise to: since the lexical non-finite verb combines with the auxiliary as one of its complements, it does not itself combine with its own complements to project a VP. The resulting flat VP results in a more difficult treatment of the coordination data in (5), while the traditional layered VP structure would lead to a more straightforward account in terms of non-finite VP coordination (as pointed out for tense constructions by Manning, 1997; Aguila-Multner & Crysmann, 2019).

(5) Elle la   leur a   fait apprendre par
    she DO.SG.F IO.PL have.3SG.PRS made learn   by
    cœur et réciter le lendemain.
    heart and recite the next.day
    'She made them learn it by heart and recite it the next day.'

Miller (1992) gives several arguments in defence of the flat structure of causatives. First, the free position of the downstairs subject relative to the complements of the infinitive is taken as evidence that the latter cannot form a VP with is complements alone. This does not rule out the possibility of a VP incorporating the downstairs subject, which we will explore in the analysis. Secondly, he draws an argument from the ungrammaticality of embedding of tense auxiliaries under a causative. He however admits that this ungrammaticality could be due to "some sort of independent semantico-pragmatic restriction" (p. 240 fn. 6), which is confirmed by the felicitous examples provided by Abeillé & Godard (1996, p. 38). Thirdly, preverbal negation in the form of *ne pas* is impossible before the infinitive in the non-control case, which can easily be captured under the flat structure hypothesis, given that there is no infinitive VP for the negation to attach to. We return to this argument in the analysis.

3 Restrictions imposed downstairs

As we have just seen, argument composition manages to reconcile climbing with a lexical perspective on pronominal affixation by means of giving the upstairs verb (auxiliary, *faire*) full control over the argument structure of the downstairs verb. In the *faire*-construction, however, there are still several cases where the downstairs verb maintains control over construction-specific aspects of realisation.

3.1 Trapping

With non-control *faire*, we typically observe climbing, i.e. upstairs realisation of all pronominal affixes of the downstairs verb. However, there are several exceptions: intrinsic arguments, medio-passive *se* and for most speakers even reflexive *se* resist climbing, as shown in (6).

(6) a. Le snobisme fait   se vendre bien les classiques.
        the snobism makes self sell well the classics
        'Snobism makes the classics sell well.'

    b. La chaleur a   fait s'évanouir Paul.
        the heat   has made self.faint Paul
        'The heat made Paul faint.'

    c. (*) Marie a   fait se laver les enfants.
           Marie has made self wash the children
        'Marie has made the children wash themselves.'
        (Abeillé et al., 1998, 24)

What is more, these arguments also prevent any other pronominal affixes from being realised upstairs, with the exception of the downstairs subject.

(7) a. * Tout   leur en fait vouloir à Paul.
         everything IO.PL EN make angry   to Paul
        'Everything makes them/Paul angry at Paul/them.

    b. Tout   leur fait en vouloir à Paul.
        everything IO.PL make EN angry   to Paul
        'Everything makes them angry at Paul.

c. Tout   leur fait vous en vouloir.
    everything IO.PL make 2.PL EN angry
    'Everything makes them angry at you.'
    (Miller & Sag, 1997, 609–610)

Miller & Sag (1997) address the case of trapping by means of several technical assumptions: first, argument composition by *faire* targets the COMPS list of the downstairs verb and composes it with its own ARG-ST list. This contrasts with e.g. auxiliaries, which target the ARG-ST list of their verbal complement. Second, they distinguish the HEAD value of verbs as to whether they are basic (*bas-vb*) or reduced (*red-vb*) and require *faire* to combine with basic verbs only. Finally, while standard pronominal affixation will restrict the host's HEAD value to *red-vb*, downstairs affixal realisation in the case of trapping will exceptionally set the host's HEAD value to *bas-vb*. While this may correctly capture the data, the diacritic use of HEAD values certainly has an ad hoc ring to it.[1]

3.2 Subjects marked with *de/par*

Koenig (1998) notes another peculiarity of French *faire* construction which suggests that the downstairs verb plays a more active role with respect to argument realisation than what would be expected under an argument composition approach.

Agents of French passives can be expressed by either a *par*-phrase, or a *de*-phrase, the choice depending on the lexical aspect of the verb, i.e. whether it is dynamic (*par*) or stative *de*.

(8) Jean a   été suivi   *de / par Paul.
    Jean has been followed of / by Paul
    'Jean has been followed by Paul.'

(9) Le poisson a   été suivi   de / *par rôtis.
    the fish   has been followed of / by   roasts
    'The fish has been followed by a roast.'

In the *faire*-construction, realisation of the agent of the downstairs verb by an oblique by-phrase is equally possible, and we still observe sensitivity to the lexical aspect of the downstairs verb.

(10) Marc a   fait suivre Jean *de / par Paul.
     Marc has made follow Jean of   / by Paul
     'Marc had Jean followed by Paul.'

(11) Marc a   fait suivre le poisson de / *par rôtis.
     Marc has made follow the fish   of / by   roasts
     'Marc had the fish be followed by a roast.'

With infinitives, however, realisation as a by-phrase is not a standard option. Koenig (1998) concludes that the grammatical function change must take effect on the downstairs verb, yet be conditioned inside-out on embedding in the causative construction.

4 Analysis

We have seen in the previous section that the downstairs verb in constructions with non-control *faire* exerts a significant amount

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[1]Furthermore, argument composition from COMPS will complicate the principle of argument conservation, since upstairs pronominal affixation will give rise to non-canonical synsem objects on the downstairs COMPS list.

of control on argument realisation, both in terms of the realisation of the downstairs subject and in terms of the possibility vs. impossibility of clitic climbing. Rather than using argument composition to make as much information as possible available to the causative verb, we shall build on recent work by Aguila-Multner & Crysmann (2019) who have proposed to treat clitic climbing with auxiliaries as an instance of inflectional periphrasis in the sense of Bonami (2015).

Before we launch into the presentation of our formal analysis of non-control *faire*, a brief remark is due to its counterpart, control *faire*: essentially, we shall follow Abeillé et al. (1998) in assuming that control *faire* is a standard object equi verb that assigns the thematic role of causee to its direct object complement, the controller of the downstairs subject. Cf. Figure 2 for a sample lexical entry. As shown below in Figure 5, non-control *faire* crucially differs from this in that the upstairs verb does not assign a role to the downstairs subject. Rather, it is only the downstairs verb that enters into a semantic, and, as we shall argue a syntactic relationship. Climbing then merely constitutes periphrastic realisation of the downstairs verbs morphology.
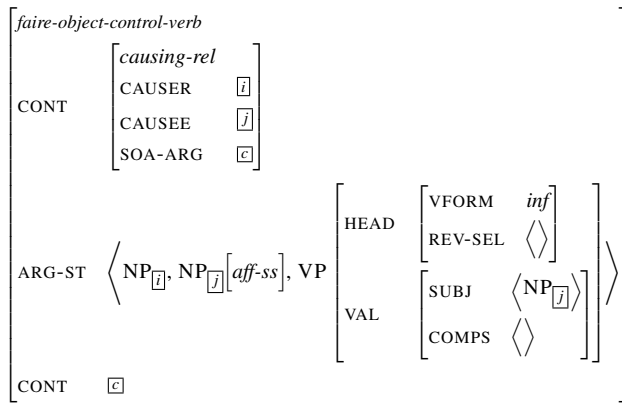
$$
\begin{bmatrix}
\textit{faire-object-control-verb} \\[2pt]
\text{CONT} \begin{bmatrix} \textit{causing-rel} \\ \text{CAUSER} & \boxed{i} \\ \text{CAUSEE} & \boxed{j} \\ \text{SOA-ARG} & \boxed{c} \end{bmatrix} \\[10pt]
\text{ARG-ST} \left\langle \text{NP}_{\boxed{i}}, \text{NP}_{\boxed{j}}[\textit{aff-ss}], \text{VP} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \text{VFORM} & \textit{inf} \\ \text{REV-SEL} & \langle \rangle \end{bmatrix} \\ \text{VAL} \begin{bmatrix} \text{SUBJ} & \langle \text{NP}_{\boxed{j}} \rangle \\ \text{COMPS} & \langle \rangle \end{bmatrix} \end{bmatrix} \right\rangle \\[10pt]
\text{CONT} \quad \boxed{c}
\end{bmatrix}
$$

Figure 2: Control *faire*

4.1 Realisation of pronominal affixes

The periphrasis approach to clitic climbing (Aguila-Multner & Crysmann, 2019) assumes two kinds of rules for morphological realisation of arguments: a synthetic rule for local realisation, and a periphrastic rule for delegation to an auxiliary. The synthetic rule is the one finite forms go through, having no auxiliary to delegate their affixes to; it also regularly applies to infinitives not involved in a periphrasis construction (e.g. complements of control or modal verbs). It is illustrated in Figure 3. It is specified to apply to a non-participle verb and creates an object of type *praf* under the PRAF list (an agenda of affixes to realise during inflection) for every element on COMPS of type *aff-ss*. Such elements are removed from COMPS in the output.

The periphrastic rule, illustrated in Figure 4, applies to a verb in an inside-out relation with an auxiliary, relying on a REV(ERSE)-SEL(ECTION) feature. Following Bonami (2015); Aguila-Multner & Crysmann (2019), this feature imposes constraints on the auxiliary's INFL, i.e. its morphology, PRAF list included, and can therefore contain a requirement for certain pronominal affixes. This is exactly what the delegation rule does, effecting the same discharge of affixal elements from COMPS as the synthetic rule, but transferring them to the PRAF
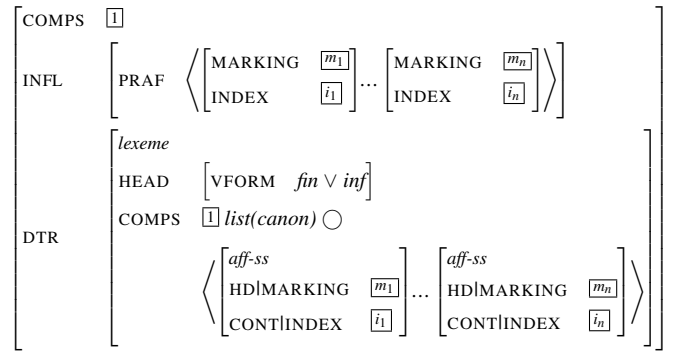
$$
\begin{bmatrix}
\text{COMPS} & \boxed{1} \\[4pt]
\text{INFL} \begin{bmatrix} \text{PRAF} & \left\langle \begin{bmatrix} \text{MARKING} & \boxed{m_1} \\ \text{INDEX} & \boxed{i_1} \end{bmatrix} \cdots \begin{bmatrix} \text{MARKING} & \boxed{m_n} \\ \text{INDEX} & \boxed{i_n} \end{bmatrix} \right\rangle \end{bmatrix} \\[12pt]
\text{DTR} \begin{bmatrix} \textit{lexeme} \\ \text{HEAD} \begin{bmatrix} \text{VFORM} & \textit{fin} \vee \textit{inf} \end{bmatrix} \\ \text{COMPS} \; \boxed{1} \textit{list(canon)} \bigcirc \\ \left\langle \begin{bmatrix} \textit{aff-ss} \\ \text{HD|MARKING} & \boxed{m_1} \\ \text{CONT|INDEX} & \boxed{i_1} \end{bmatrix} \cdots \begin{bmatrix} \textit{aff-ss} \\ \text{HD|MARKING} & \boxed{m_n} \\ \text{CONT|INDEX} & \boxed{i_n} \end{bmatrix} \right\rangle \end{bmatrix}
\end{bmatrix}
$$

Figure 3: Lexical rule for synthetic realisation of affixes

$$
\begin{bmatrix}
\text{COMPS} & \boxed{1} \\[4pt]
\text{REV-SEL} \; \boxed{2} \left\langle \begin{bmatrix} \text{PRAF} & \left\langle \begin{bmatrix} \text{MARKING} & \boxed{m_1} \\ \text{INDEX} & \boxed{i_1} \end{bmatrix} \cdots \begin{bmatrix} \text{MARKING} & \boxed{m_n} \\ \text{INDEX} & \boxed{i_n} \end{bmatrix} \right\rangle \end{bmatrix} \right\rangle \\[12pt]
\text{DTR} \begin{bmatrix} \textit{lexeme} \\ \text{COMPS} \; \boxed{1} \textit{list(canon)} \bigcirc \\ \left\langle \begin{bmatrix} \textit{aff-ss} \\ \text{HD|MARKING} & \boxed{m_1} \\ \text{CONT|INDEX} & \boxed{i_1} \end{bmatrix} \cdots \begin{bmatrix} \textit{aff-ss} \\ \text{HD|MARKING} & \boxed{m_n} \\ \text{CONT|INDEX} & \boxed{i_n} \end{bmatrix} \right\rangle \\ \text{REV-SEL} \; \boxed{2} \langle [] \rangle \end{bmatrix}
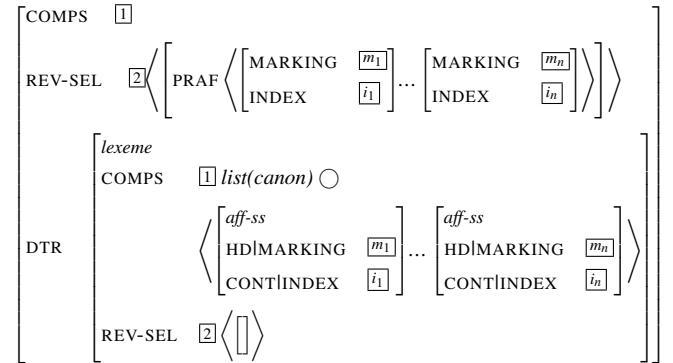\end{bmatrix}
$$

Figure 4: Lexical rule for periphrastic realisation of affixes

list of the auxiliary via REV-SEL instead of the verb's own PRAF. A description for a periphrasis auxiliary in the form of causative *faire* is given in Figure 5, showing the identification of the content of the VP complement's REV-SEL with the INFL value of the causative auxiliary.

4.2 Realisation of the downstairs subject

All that is required now in order to model clitic climbing in causatives is a lexical rule to introduce the reverse-selection for *faire*. As argued by Koenig (1998), causativised infinitives independently need to carry an inside-out constraint for their licensor (causative *faire*) to properly constrain realisation of their subject as a *par* or *de*-phrase. I.e. the downstairs verb's subject is demoted to an oblique complement, contingent on the embedding under the causative verb. Our analysis goes piggy-back on this independently required inside-out dependency (Koenig actually assumes argument composition together with a flat structure of VP): on the one side, we shall generalise realisation of the downstairs subject as an oblique complement to the case of
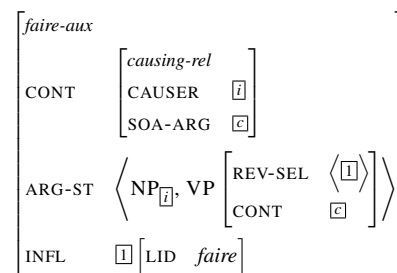
$$
\begin{bmatrix}
\textit{faire-aux} \\[2pt]
\text{CONT} \begin{bmatrix} \textit{causing-rel} \\ \text{CAUSER} & \boxed{i} \\ \text{SOA-ARG} & \boxed{c} \end{bmatrix} \\[10pt]
\text{ARG-ST} \left\langle \text{NP}_{\boxed{i}}, \text{VP} \begin{bmatrix} \text{REV-SEL} & \langle \boxed{1} \rangle \\ \text{CONT} & \boxed{c} \end{bmatrix} \right\rangle \\[8pt]
\text{INFL} \quad \boxed{1} \begin{bmatrix} \text{LID} & \textit{faire} \end{bmatrix}
\end{bmatrix}
$$

Figure 5: Non-control auxiliary *faire*

$$\begin{bmatrix} \text{HEAD} & \begin{bmatrix} \text{VFORM} & \textit{inf} \\ \text{REV-SEL} & \left\langle \begin{bmatrix} \text{LID} & \textit{caus-lid} \end{bmatrix} \right\rangle \end{bmatrix} \\ \text{COMPS} & \boxed{1} \oplus \left\langle \text{NP}_i \right\rangle \\ \text{DTR} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \text{REV-SEL} & \langle \rangle \end{bmatrix} \\ \text{SUBJ} & \left\langle \text{NP}_i \right\rangle \\ \text{COMPS} & \boxed{1} \end{bmatrix} \end{bmatrix}$$
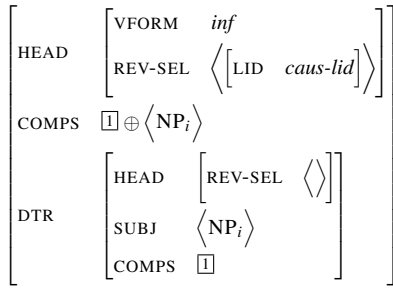
Figure 6: Lexical rule for causative infinitives

realisation by an indirect object (transitives) or a direct object (intransitives). On the other hand, we shall argue that if there is already an inside-out dependency on a causative predicate, an analysis of clitic climbing as periphrasis will come at little extra cost. This is highly similar to the case of tense auxiliaries (Aguila-Multner & Crysmann, 2019) where periphrastic realisation of pronominal affixation depends on an already existing periphrastic relation between the participle and the auxiliary for the expression of tense.

The relevant lexical rule is given in Figure 6, using the feature LID for identification of the causative auxiliary. Generalising the case of oblique by-phrase realisation of the downstairs subject to direct and indirect objects, we suggest to extend the COMPS list of the downstairs verb with an NP co-indexed with the first element of ARG-ST. I.e. we essentially entertain an extraposition analysis for downstairs NP subjects.

Let us now examine how such a rule can account for the various possible realisations of the downstairs subject, including its marking (accusative/bare NP or dative/NP[$\grave{a}$]) and its obligatory climbing whenever it is affixal. The marking we analyse using two subtypes of the rule that check transitivity by looking at the second element of ARG-ST. If it is an NP, then the new COMPS element is NP[MARKING $\grave{a}$]; if it is not an NP or if the verb only has one argument, then the new NP is [MARKING *bare*]. This approach to the realisation of the subject makes it a purely local decision based on the argument structure of the infinitive that obviates the need to make the information about transitivity visible to the upstairs verb. A similar approach can account for the possible realisation as an oblique introduced by *de* or *par* of the subject of transitives, this time depending on a lexical semantics distinction between stative and dynamic predicates, respectively. Finally, the obligatory climbing of the new argument is dictated by the ordering of the three rules: the causativisation rule applies after the synthetic realisation rule and before the periphrastic realisation rule. If the new element is of type *aff-ss*, its only way out of the COMPS list is therefore through deferral to REV-SEL.

4.3 Intrinsic arguments and trapping

Having laid out the basic line of analysis, we shall now turn to the treatment of trapping. As described above, trapping is triggered by lexically specified intrinsic arguments as well as inherent, medio-passive, and, for most speakers, reflexive *se*, so an important question is how such arguments are represented as part of the lexical entry of the verb. There are two basic observations regarding all these arguments: first, they are always realised affixally (cf. Abeillé et al., 1998), and second, intrinsic arguments, including inherent *se*, are not assigned a thematic

$$\begin{bmatrix} \text{HEAD} & \begin{bmatrix} \text{VFORM} & \textit{inf} \\ \text{REV-SEL} & \left\langle \begin{bmatrix} \text{LID} & \textit{caus-lid} \end{bmatrix} \right\rangle \end{bmatrix} \\ \text{COMPS} & \boxed{1} \oplus \left\langle \text{NP}_i \right\rangle \\ \text{DTR} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \text{REV-SEL} & \langle \rangle \end{bmatrix} \\ \text{INFL} & \begin{bmatrix} \text{PRAF} & \boxed{p} \end{bmatrix} \\ \text{SUBJ} & \left\langle \text{NP}_i \right\rangle \\ \text{COMPS} & \boxed{1} \\ \text{ARG-ST} & \boxed{a} \end{bmatrix} \end{bmatrix}$$

$$\wedge \boxed{p} \left\langle [\,], \dots \right\rangle \leftrightarrow \text{member}\left(\begin{bmatrix} \textit{aff-ss} \\ \text{CONT} & \textit{expl} \vee \textit{refl} \end{bmatrix}, \boxed{a} \right)$$

$$\wedge \boxed{p} \left\langle \, \right\rangle \leftrightarrow \neg \, \text{member}\left(\begin{bmatrix} \textit{aff-ss} \\ \text{CONT} & \textit{expl} \vee \textit{refl} \end{bmatrix}, \boxed{a} \right)$$
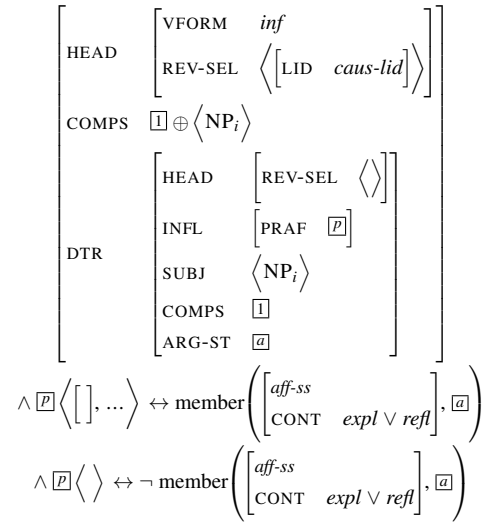
Figure 7: Lexical rule for causative infinitives (refined)

role. This observation already carries over to medio-passive *se*, which is best understood as an exponent of grammatical function change (Grimshaw, 1982; Wehrli, 1986). Following Crysmann (2003), we shall therefore assume that intrinsic arguments and reflexives can be represented on ARG-ST as *aff-ss* objects whose CONT value is either *expl*, as is the case of intrinsic arguments, or else *refl*.

Given such an explicit representation of argument type, we shall always be able to detect the presence of intrinsic arguments and enforce their local realisation prior to the application of the causative lexical rule. This can be ensured by augmenting the causative lexical rule in Figure 6 with two relational constraints, as given in Figure 7: iff ARG-ST contain the description of an intrinsic or reflexive affixal argument, PRAF must be non-empty (trapping), whereas iff ARG-ST is free of such elements, PRAF must be empty, enforcing periphrastic realisation of pronominal affixes.

Before closing, a remark is due concerning negation with non-control *faire*: as observed by Miller (1992), the downstairs infinitive cannot be modified by *ne pas*, unlike standard VPs. One way to capture this constraint is to ensure that negative modifiers cannot disrupt morphological periphrasis, e.g. by requiring that these modifiers select for a head whose REV-SEL value of the head is the empty list.

5 Conclusion

In this paper we have provided an analysis of clitic climbing in French causatives that is based on reverse selection from the downstairs infinitive to the causative auxiliary. Building on Koenig (1998)'s argument for an inside-out view of such constructions and on Aguila-Multner & Crysmann (2019)'s proposal for clitic climbing by periphrasis with tense auxiliaries and passives, this approach disposes with the need for argument composition and the concomitant flat structure of the VP. Instead, by giving the downstairs verb not just partial (Koenig, 1998) but full control over the realisation of its arguments, it covers the possibilities of climbing or trapping of arguments, the possible realisations of the subject including their dependence on lexical aspect, and the two possible realisations of the

subject as either a climbing affix or a local phrasal complement. Moreover, the present approach to non-control *faire* is highly parallel to the periphrastic approach to climbing advanced by Aguila-Multner & Crysmann (2019): in both cases, morphological periphrasis goes piggy-back on an independently required inside-out dependency, and in both cases, the syntax-semantics mismatch entailed by argument composition has been resolved in favour of syntax-semantic alignment. Finally, the present approach provides the missing piece towards a morphological theory of clitic climbing, showing that the periphrasis approach does scale up from auxiliary constructions to the full range of climbing phenomena.

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