Constructing Spanish Complex Predicates

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Abstract

Abeillé and Godard (2007) describe a variety of Spanish whose complex predicates differ structurally from the more familiar flat VP type of complex predicate common to other varieties of Spanish and Romance. I present a verb cluster analysis of this variety which both captures these structural differences, and at the same time preserves those features that are common across both construction types. Coupled with a simple morphological treatment of affixation, this analysis predicts the range of 'clitic climbing' facts. The parsimony of the affixation analysis is afforded by an alternative approach to the constraints on reflexive affix distribution in Spanish complex predicates. I depart radically from previous morpho-lexical approaches to the phenomenon, instead showing how the constraints follow from independently motivated binding principles. This approach not only handles more of the Spanish data, but also has the potential to provide a unified account of the phenomenon across Romance.

1 Introduction

It is generally agreed that periphrastic causatives and perception verbs with infinitival complements fall into two basic construction types in Romance languages (Abeillé et al., 1997; Abeillé et al., 1998; Miller and Lowrey, 2003). The first is the double complement construction (1), where the causative/perception verb selects for both an NP controller and an infinitival VP complement, as shown in the following examples from Spanish:

(1) *Yo hice a Pedro comer la manzana*
I made.1sg to Pedro eat the apple
'I made Pedro eat the apple'

The second is a structure in which the finite causative/perception verb and the infinitive together form a complex predicate (2), as evidenced by various telltale properties. The first is the word ordering: in cases where the subject of the infinitive is realised as an NP, it must not intervene between the two verbs (2):

(2) *Yo* ***hice*** ***comer*** *la manzana a Pedro*
I made.1sg eat the apple to Pedro
'I made Pedro eat the apple'

A second is the placement of pronominal affixes[1], which appear on the finite verb, even where they are semantic arguments of the infinitive (so-called 'clitic-climbing'[2]):

[†]Particular thanks to Inbal Arnon, John Beavers, Danièle Godard, Philip Hofmeister, Beth Levin, Ivan Sag, Harry Tily, and the audience of the HPSG07 conference for their valuable input.

[1]There is a good deal of evidence supporting an affixal, as opposed to a clitic analysis of these elements, see Miller (1991) for overview and discussion.

[2]I will henceforth use the traditional term 'clitic climbing' as a shorthand for this behaviour, even though (unsurprisingly) I present here neither a clitic, nor a movement analysis of the phenomenon.

(3) *Yo* ***la*** *hice* *comer* *a* *Pedro*
I it.acc made.1sg eat to Pedro
'I made Pedro eat it'

Further properties, which space prevents me from illustrating here,[3] include middle-passive SE and periphrastic passive formation, and occurrence in bounded dependencies, all of which may target the object of the infinitive as though it were an argument of the complex predicate head.

Together, these properties attest to the monoclausality of Romance complex predicates. In the HPSG literature they are analysed in terms of argument structure sharing: the head of the complex predicate inherits all of the arguments of the unsaturated V argument on its own argument structure list (so-called 'argument composition', Hinrichs and Nakazawa (1990)):

(4)
$$\left[\begin{array}{l} \textit{composition-verb-lxm} \\ \text{ARG-STR} \quad \langle\, \text{NP}\rangle \oplus \boxed{A} \oplus \langle \boxed{1}, \text{V}\left[\begin{array}{ll} \textit{word} \\ \text{ARG STR} & \langle \boxed{1} \rangle \oplus \boxed{A} \end{array}\right] \rangle \end{array}\right]$$

Abeillé and Godard (2007) have convincingly demonstrated that these monoclausal properties are common to complex predicate structures across the Romance family, which argues for a common argument composition analysis for these languages. At the level of constituent structure however, they show that Romance complex predicates do not form a homogenous class. On the basis of a number of tests, the existence of two basic structures are motivated. The first is a flat VP (figure 1). The second is a 'verb cluster', where the two verbs form a constituent (figure 2).

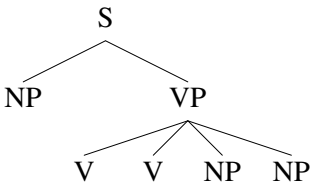


Figure 1: Flat VP

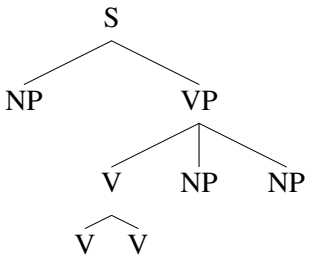


Figure 2: Verb cluster

The flat VP structure characterises the French, Portuguese, Italian complex predicates, as well as one variety of Iberian Spanish (henceforth S1).[4] The verb cluster characterises complex predicates in a second variety of Iberian Spanish (S2).[5] The structural differences reveal themselves in the placement of adverbials,

[3] See Abeillé and Godard (2007) for a detailed description.

[4] Romanian shows mixed behaviour depending on the specific verb.

[5] Non-Iberian varieties of Spanish are not discussed.

and in coordination and subject-verb inversion facts. By contrast with members from the former group, in S2, adverbials may not intervene between the head and the infinitival V, coordination of sequences of non-finite verbs with their complements are not allowed, and the subject may not invert with the head of the complex predicate in interrogative constructions.[6]

In the HPSG literature on Romance complex predication, the French and Italian structures have received more attention than their Spanish counterparts. It can be observed that the basic argument composition analysis proposed to capture the monoclausal properties of complex predicates straightforwardly produces the flat VP structure appropriate for these languages, when the composition verb combines with its arguments in the syntax, via the head-complement construction. It will however, produce the wrong structure for the verb-cluster variety of Spanish.

The first part of this paper is devoted to an analysis of the verb-cluster variety of Spanish, with the aim of capturing both the structural difference between this type and the flat VP type, and also the properties common to both constructions, which derive from the shared argument structure. To this end, I adopt a head-cluster analysis of the type proposed for verb clusters in various non-Romance languages.[7] Coupled with a simple morphological analysis of Spanish affixation, this analysis predicts the range of pronominal affixation phenomena exhibited by Spanish causative and perception verb complex predicate constructions. I restrict here the discussion to causative verbs, though the analysis should extend straightforwardly to perception verbs also.

For readers familiar with HPSG analyses of Romance complex predicate affixation (e.g. Miller and Sag, 1997; Tily and Sag, 2006), it will be apparent that the present analysis does away with many of the 'book-keeping' features and types that characterise previous analyses. The type- and feature-heavy nature of these analyses has been primarily due to the problematic facts pertaining to reflexive affix realisation. Because, in the second part of this paper, I show (for Spanish, at least) that the locus of explanation for these constraints can be shifted to an entirely different domain of the grammar, that of the binding theory, the affixation analysis I present is consequently far more abstemious in its reliance on ad hoc types and features than its predecessors.

Across Romance languages, reflexive affixes[8] constitute a striking apparent exception to the generalisation that all affix arguments in complex predicate constructions climb: when the affix is reflexive, it is constrained to remain attached to the infinitival verb:

[6] See Abeillé and Godard (2007), for a detailed description, and language specific differences among the flat VP languages.

[7] See, *inter alia*, Müller (2000) for German, Rentier (1994) for Dutch and Chung (1993) for Korean.

[8] In French there is a further series of 'intrinsic' affixes, idiosyncratically associated with specific verbs, which also fail to climb. Because Spanish does not possess this set of clitics, I do not touch on the behaviour of these elements here.

(5) *Yo* *lo* *hice* *lavar-**se***
I him.acc made.1sg wash-refl
'I made him wash himself

Previous analyses have approached these facts from a morpho-lexical perspective, positing distinct verb types for verbs that realise reflexive affixes and for those that realise non-reflexive affixes (Abeillé et al., 1998; Tily and Sag, 2006). Specific constraints on complex predicate forming verbs then ensure that the verb selects for a certain type of infinitive only.

The second part of this paper provides a more parsimonious alternative to this morpho-lexical approach to the constraints on reflexive affix realisation in complex predicate constructions. I show that the constraints follow from independently motivated binding principles, in conjunction with the particular argument structural properties of complex predicates. As such, there is no need to complicate the type hierarchy and the lexical entries of complex predicate forming verbs in order to handle the reflexive facts. Crucially, this analysis does not depend on particular selectional or type constraints which might be predicted to vary across languages, but rather capitalises on the common property shared by complex predicates across the Romance family: their composed argument structure.

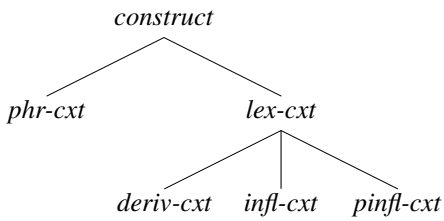
2 The Analysis

The framework adopted in this paper is that of sign based construction grammar (Sag, 2007a,b), which treats lexical items and phrases alike as *constructs*, which are modeled as feature structures (6), with a MOTHER (MTR) feature and a DAUGHTERS (DTRS) feature. The value of the MTR feature is a sign, and the value of the DTRS is a (possibly empty) list of signs.

(6) $$\textit{construct} \Rightarrow \begin{bmatrix} \text{MTR } \textit{sign} \\ \text{DTRS } \textit{list(sign)} \end{bmatrix}$$

The immediate subtypes of *construct* are *phrasal-construct* and *lexical-construct*, under which the rest of the type hierarchy of *constructs* is classified:

(7)



We can think of constructs as local trees which are licensed by some *construction* of the grammar. A construction is a type constraint which licenses a distinctive class of constructs. Lexical entries are constructions (of type *lexical class*) which license a class of lexical items. From lexical items, lexical and phrasal constructions (*combinatoric* constructions) serve to build larger signs.

2.1 Affixation

It has been widely recognised for some time that Romance 'clitics' exhibit all the behaviour of pronominal affixes (see Miller 1991 for an extensive discussion), and thus that verb forms bearing these affixes should be formed in the lexicon, rather than in the syntax. A recent analysis in this spirit, for pronominal affixation in French, is found in Tily and Sag (2006) (henceforth TS06), which builds on the comprehensive earlier analysis of Miller and Sag (1997) (henceforth MS97). TS06 take the presence of an affix to correspond to the presence of a *pro* (a definite null instantiated argument)[9] on a verb's argument structure list. They implement this by means of a derivational construction which removes an affixal element from the verb's ARG-ST and replaces it with a *pro* argument.

For Spanish affixation,[10] I will follow TS06 in taking affix realisation to correspond to a replacement element on the ARG-ST list, but will simply allow this to be an element of type *nominal object*, which is constrained to be a non-affix (to avoid repeated application of the rule to its own output). It is also constrained to share the same SEM value as the affixal element on the DTRS list (indicated by the colon preceding the tag).[11] This will ensure that the relevant referential properties of the affixal argument such as person, gender and number information, together with the nominal object type (*ppro*/*ana*) (and thus the binding constraints on these types) will be inherited. The retention of these referential properties is crucial, and will be directly relevant in the analysis of reflexive affixes in §2.3.1.

I capture the same effect as the *pro* analysis by enforcing an argument structure/ valency discrepancy:[12] the affixed argument is 'canceled' off the valency list, such that the MTR's ARG-ST list is longer than the VAL list by one.[13] This reflects the intuition that affix realisation, although a morphological rather than a syntactic process, nevertheless serves to saturate an argument. The choice of an argument structure/valency mismatch as opposed to a phonologically null *pro* analysis will allow us more easily to define certain constraints on the types of infinitives that complex predicate forming verbs must select for in order to enforce affix climbing (see §2.2.1), and is more amenable to a straight forward account of reflexive binding facts (see §2.3.1).

Because affixes always attach to already inflected verb forms (*words*), and because in Spanish the location of the affixation depends on the type of inflected verb form (left edge for finite verb forms, right edge for non-finite forms), I take affix realisation to be derived in the lexicon via a type of post-inflectional construction (an *aff-cxt*),[14] which takes as both its DTRS and its MTR a value of type *word*.

[9] *pro* on this analysis is a phonologically null subtype of sign.

[10] The analysis of Spanish affixation presented here is not intended to be restricted to the verb cluster variety of Spanish, but rather should hold generally for both varieties.

[11] cf. the mechanism of 'content-sharing' in HPSG, e.g. Davis (2001).

[12] See Abeillé et al. (1998) for a similar argument structure/valency discrepancy analysis for French.

[13] I side-step the complicated issues surrounding the phenomenon of Spanish 'clitic doubling' here.

[14] As opposed to a derivational construction as assumed by TS06 for French.

The function F*aff* (essentially the same as F*praf* introduced by MS97), determines the FORM value of a given affixed word. It takes as input the inflected form of the host, the syntactic category of the host, and the affixal element to be affixed, returning the affixed form.

For finite verb forms, the constraints on the ARG-ST list of the DTRS guarantees that the first affixal element on the list is realised as a pronominal argument on the MTR's ARG-ST:

(8)

$$\textit{aff-wd-cxt} \Longrightarrow \left[\begin{array}{l} \text{MTR} \left[\begin{array}{l} \textit{word} \\ \text{FORM} \ \langle\ \text{F}_{aff}(\boxed{3},\boxed{4},\boxed{1}\ )\ \rangle \\ \text{ARG-ST}\ \boxed{A} \oplus \langle \text{NP}_{\textit{nonaff}}\textit{:}\boxed{2}\rangle \oplus \boxed{B} \\ \text{SYN} \left[\begin{array}{l} \text{CAT}\ \boxed{3} \\ \text{VAL}\ \left[\boxed{A} \oplus \boxed{B}\right] \end{array}\right] \\ \text{SEM}\ \boxed{5} \end{array}\right] \\ \text{DTRS}\ \langle \left[\begin{array}{l} \textit{word} \\ \text{FORM}\ \boxed{4} \\ \text{ARG-ST}\ \boxed{A}\textit{list(nonaff)} \oplus \langle\ \boxed{1}\textit{aff}\textit{:}\boxed{2}\rangle \oplus \boxed{B} \\ \text{SYN}\ \left[\text{CAT}\ \boxed{3}\left[\text{VFORM}\ \textit{finite}\right]\right] \\ \text{SEM}\ \boxed{5} \end{array}\right] \rangle \end{array}\right]$$

Because both MTR and DTRs are of type *word*, an affixed word may occur as the DTR of an *aff-wd* construct, for as long as there are still affixes on the list.[15] This is relevant in the case of ditransitives, for example, where there may be multiple object affixes that need to be realised. The ordering constraint (that affixation always targets the *first* affixal element on the ARG-ST list) further guarantees that the process of multiple affixation will follow the obliqueness hierarchy which corresponds to the relative proximity of affixes to the finite inflected verb stem in Spanish (where there are accusative and dative clitics attached to the verb stem, the accusative is closer to the verb stem):[16]

(9) a. *Roberto dió el libro a Miguel*
Roberto gave the book to Miguel
'Roberto gave the book to Miguel'

[15]This avoids the division of *clitic word* and *plain word* introduced by Miller and Sag (1997), which as pointed out by Monachesi (1999), and TS06, is syntactically unmotivated.

[16]For non-finite forms, multiple affixes have the inverse relative proximity with respect to the verb: the accusative is farther away from the verb stem than the dative. Non-finite verb forms are therefore constrained to always realise the *last* affixal element on the ARG-ST list of the DTRS as a pronominal argument on the MTR's ARG-ST.

b. *Roberto se lo dió*
Roberto dat acc gave
'Roberto gave it to him'

The post-inflectional affix realisation construction interacts with the lexical entries for complex predicate forming verbs, and with the head-cluster construction to predict the affix climbing facts. I turn to these two components of the analysis in the next section.

2.2 Constructing complex predicates

We saw above that S2 complex predicate constructions are structurally distinct from the French, Italian and S1 complex predicate types. While the latter show the characteristics of a flat VP structure, the infinitival V in the S2 constructions forms a constituent with the matrix verb. Clitic climbing, passive formation and occurrence in bounded dependencies all indicate, however, that, independent of their variable constituency, complex predicates across the family are characterised by a shared argument structure, to which these monoclausal properties are attributable.

A simple way of capturing the structural difference between S2 on the one hand, and French, Italian and S1 on the other is to take bare V arguments in the verb cluster variety of Spanish as not being privileged to participate in the same combinatoric constructions as phrase level complements. This can be enforced by specifying that the unsaturated verbal complement be listed as the value of a special valence feature, VCOMP (Chung, 1993; Rentier, 1994; Müller, 2000), the value for which for all other verb types is specified as the empty list. Because the bare V does not occur on the ARG-ST list, the valence principle does not apply to it, and so, unlike other complements, it does not appear on VAL list. By this means, it cannot be realised via the Head-Complement construction.

In order to guarantee that cluster forming verbs combine first with their bare verbal complement before combining with any phrasal nominal complements (thus producing the correct constituency structure), the head in the Head-Complement construction is required to have an empty VCOMP value (see (15) below). Verbs which have a non-empty VCOMP value are thus licensed not by the Head- Complement construction, but by the Head-Cluster Construction, some form of which has been proposed already for various non-Romance verb cluster constructions.[17] Before I present the Head-Cluster Construction, we shall first look at the nature of the lexical entry of the Spanish causative and perception verbs that are licensed to participate in this construction type.

[17] See, e.g. Chung (1993), Rentier (1994) and Müller (2000).

(10)
$$\left[\begin{array}{l} \textit{cluster-vb-lxm} \\ \text{SYN}\,|\,\text{VCOMP}\ \langle \left[\begin{array}{l} \textit{verb} \\ \text{ARG ST}\ \langle \boxed{1} \rangle \oplus \boxed{B} \\ \text{SYN}\ \left[\begin{array}{l} \text{CAT}\ \left[\text{VFORM}\ \textit{inf}\right] \\ \text{VAL}\ \langle \boxed{1} \rangle \oplus \boxed{B} \\ \text{VCOMP}\ \langle\ \rangle \end{array}\right] \\ \text{SEM}\ \boxed{2} \end{array}\right] \rangle \\ \text{ARG-STR}\ \langle\ \text{NP}_i\ \rangle \oplus \boxed{B} \oplus \langle \boxed{1}\text{NP} \rangle \\ \text{SEM}\ \textit{cause}(i,\boxed{2}) \end{array}\right]$$

(10) gives the (simplified) lexical entry for the verb cluster forming verb, a subtype of transitive verb. The verb semantically selects for an NP subject, and an infinitival V, denoting an event. The VCOMP value of the verb is the infinitival V.

The ARG-ST list of the causative lexeme includes the arguments inherited from the infinitival V, in keeping with the standard argument composition approach to argument sharing. I stress here that this argument composition component of the lexical entry is not particular to the verb-cluster variety of Spanish, but is common to complex predicate forming verbs in both varieties of Spanish. The composed ARG-ST is the locus of the monoclausal properties common to the complex predicates of both varieties of Spanish (and in Romance generally), and thus is a feature of both construction types. Furthermore, it is the properties of the composed ARG-ST which, I show in §2.3.1, are relevant for accounting for the reflexive affix constraints. These constraints are present in both varieties of Spanish and thus it is expected that they should derive from properties shared across both construction types.

I will now briefly discuss these composed ARG-ST properties. First, note that VAL and the ARG-ST lists of the infinitival V are required to be identical. This is crucial for the analysis of clitic climbing, to be presented in the following section.

Second, note the order of elements on the composed ARG-ST list of the finite verb: the first element (subject) on the infinitive's ARG-ST list is 'demoted' to occur after the infinitive's object argument. This ordering of elements is adopted in recent composition analyses such as TS06, in order to capture the case distribution facts (the final (infinitival subject) element on the combined ARG-ST receives dative rather than accusative case). Significantly, this ordering will also play a crucial role in the binding account of reflexive affix realisation presented in §2.3.1, which provides independent motivation for this ordering of obliqueness.

Finally, observe that on this analysis, Spanish verb cluster lexemes are semantically dyadic. The literature is somewhat divided as to the semantic arity of complex predicate forming causative and perception verbs cross linguistically. Like the present analysis, TS06 assume semantic dyadicity for their French composition causative constructions, as does Rentier (1994) for causative and perception

cluster forming verbs in Dutch. Abeillé et al. (1998), by contrast, propose that the French causative *faire* take three semantic arguments when it combines with a transitive infinitive, while adopting a raising analysis of *faire* with intransitive infinitives. While it is not made explicit in their analysis, the consequence of Abeillé et al's approach is that both double complement constructions and composition constructions with transitive infinitives are taken to involve semantically selected controllers (causees), and thus have the same semantic arity. While this may be an appropriate characterisation of the French data, it does not appear to be for Spanish.

Moore (1996) observes that the double complement construction (11a) has an interpretation of direct causation, where the agent directly acts on the causee, to bring about the caused event. By contrast, the complex predicate construction (11b) has an indirect causation reading:[18]

(11) a. *Los hizo quemar las casas*
them.acc made.3sg burn the houses
'He made them burn down the houses'

b. *Les hizo quemar las casas*
them.dat made.3sg burn the houses
'He had them burn down the houses'

The semantic generalisation is that in the double complement construction, the accusative marked participant is a semantic argument of the causative verb, while the complex predicate forming verb is semantically dyadic (causer, caused event).[19]

The semantic dyadicity of the complex predicate construction is made particularly evident by the fact that while *hacer* imposes selectional restrictions on causees in the double complement construction, it never does on the equivalent participant in the complex predicate construction. Thus, (12a) (from Moore (1996)) is unacceptable in the double complement construction, because *hacer* requires animate causees. By contrast, the complex predicate example in (12b) is well formed, because here *hacer* selects only for an event, and thus imposes no restriction on the animacy of the agent of that event.

(12) a. *?*El ingeniero la hizo (a la pared) resistir el temblor.*
The engineer it-acc made to the wall resist the tremor.
'The engineer made the wall resist the tremor'

b. *El ingeniero le hizo resistir el temblor (a la pared).*
The engineer it-dat made resist the tremor to the wall
'The engineer made the wall resist the tremor'

[18] Because there is no independent NP in these two examples, word order does not distinguish the two structures. However, the accusative affix in (11a) shows this to be a double complement construction; the dative affix in (11b) signals that it is a complex predicate.

[19] In the literature on the semantics of perception verbs, it is generally agreed that a perception verb selecting an infinitival complement is semantically dyadic (Felser, 1999; Higginbotham, 1983), so for this verb class at least, this is not a particularly controversial claim.

In addition to the semantic evidence presented above, treating these verbs as dyadic will end up being pivotal for the reflexive binding facts.

I turn now to the head-cluster construction, which licenses verb cluster forming verbs:

(13)

$$\textit{head-cluster-cxt} \Longrightarrow \begin{bmatrix} \text{MTR} \begin{bmatrix} \textit{phrase} \\ \text{SYN} \begin{bmatrix} \text{VAL } \boxed{A} \\ \text{VCOMP } \langle\, \rangle \end{bmatrix} \end{bmatrix} \\ \text{DTRS } \langle \begin{bmatrix} \textit{word} \\ \text{SYN} \begin{bmatrix} \text{VAL } \boxed{A} \\ \text{VCOMP } \langle \boxed{1} \rangle \end{bmatrix} \end{bmatrix}, \boxed{1}\text{V } \rangle \end{bmatrix}$$

The DTRS of this construction consist of the head verb of type *word*, and a second complement, also a verb of type word, which is the VCOMP value of the first daughter. The MTR of this construction is of type *phrase*.

It is important to note that verb-cluster formation must be treated as a syntactic process, rather than a morphological one. Evidence ruling out a morphological derivation includes, *inter alia*, the fact that certain prosodically 'light' adverbs can occur between the two verbs, and that the lexical coordination of two non-finite verbs is permitted (See Abeillé and Godard (2007) for details). Thus, the MTR of a head cluster construction cannot be of type *word*.[20]

This creates a problem when we consider the fact that the Head-Complement construction as it is standardly formulated does not license phrasal heads. In order to ensure that in spite of being phrasal, the head cluster can still participate the Head Complement construction and thus have the noun phrase complements on its VAL list realised in the standard way,[21] I leave the type of the head daughter of the Head Complement construction underspecified, simply allowing it to be of type *expression*, rather than *word*. Although the head type remains underspecified, the head complement construction will nevertheless not ordinarily allow a phrasal head, by virtue of the specification that it have a non-empty VAL list (i.e, it cannot have saturated complements). The only exception to this will be verb clusters, which, despite being of type phrase, have no (non-affixal) arguments saturated. In this manner we can faithfully capture the mixed properties of verb clusters: the fact that they are produced combinatorically in the syntax like phrases, yet participate as complex heads with respect to immediate dominance schemata.

Finally, note that the empty VCOMP value on the DTRS will ensure that verb cluster forming verbs that have not already combined with their infinitival V complement are not licensed to participate in the Head-Complement construction, thus ensuring the correct constituency in verb cluster constructions.

[20]Thanks to Danièle Godard, who alerted me to the relevant data points.

[21]Rentier (1994) captures this via the feature LEX.

(14) **Spanish Head-complement construction**

$$\textit{head-cmp-cxt} \Longrightarrow \left[\begin{array}{l} \text{MTR} \left[\begin{array}{l} \textit{phrase} \\ \text{SYN} \left[\text{VAL } \langle \boxed{1} \rangle\right] \end{array}\right] \\ \text{DTRS } \langle \left[\begin{array}{l} \textit{expression} \\ \text{SYN} \left[\begin{array}{l} \text{CAT} \left[\text{XARG } \boxed{1}\right] \\ \text{VAL } \langle \boxed{1} \rangle \oplus \boxed{B} \\ \text{VCOMP } \langle\,\rangle \end{array}\right] \end{array}\right] \rangle \oplus \boxed{B}\textit{nonempty} \end{array}\right]$$

2.2.1 The interaction with (non-reflexive) affix realisation

Let us now consider how the morphological analysis of affix realisation interacts with the head cluster construction. First, clitic climbing is enforced by the lexical specification that the finite cluster-forming verb selects for an infinitive that has no ARG-ST-VAL mismatch. Recall that any affixed verb form features a valency reduction (cf. 28). This constraint will therefore disallow the matrix verb to select an infinitive that has had its affixes already realised. If a complex predicate forming verb selects for an infinitive that bears any affixal arguments, then these will be inherited on the combined ARG-ST list. When inflected, this complex predicate forming verb can function as the input to a post-inflectional affix realisation construction:

(15)
$$\left[\left[\begin{array}{l} \textit{aff-cxt} \\ \text{MTR} \left[\begin{array}{l} \textit{word} \\ \text{FORM } \langle \textit{ le, hice} \rangle \\ \text{ARG-ST } \langle \boxed{1} \rangle \oplus \boxed{B} \oplus \langle \text{NP:}\boxed{3} \rangle \\ \text{SYN} \left[\begin{array}{l} \text{CAT} \left[\text{VFORM } \textit{fin}\right] \\ \text{VAL } \langle \boxed{1} \rangle \oplus \boxed{B} \\ \text{VCOMP } \langle \text{V}\left[\text{ARG ST } \langle \text{NP:}\boxed{3} \rangle \oplus \boxed{B}\right] \rangle \end{array}\right] \end{array}\right] \\ \text{DTRS } \langle \left[\begin{array}{l} \textit{word} \\ \text{FORM } \langle \textit{hice} \rangle \\ \text{ARG-ST } \langle \boxed{1} \rangle \oplus \boxed{B} \oplus \langle \boxed{2}\textit{aff}\text{:}\boxed{3} \rangle \\ \text{SYN} \left[\begin{array}{l} \text{CAT} \left[\text{VFORM } \textit{fin}\right] \\ \text{VAL } \langle \boxed{1}\text{NP} \rangle \oplus \boxed{B} \oplus \langle \boxed{2}\textit{aff}\text{:}\boxed{3} \rangle \\ \text{VCOMP } \langle \text{V}\left[\text{ARG ST } \langle \boxed{2}\textit{aff}\text{:}\boxed{3} \rangle \oplus \boxed{B}\right] \rangle \end{array}\right] \end{array}\right] \rangle \end{array}\right]\right]$$

The resulting affixed verb form, having a non-empty VCOMP value, is licensed by the verb-cluster construction (but not the head complement construction), and in this way can combine with its infinitival V complement.

2.3 Reflexives

In the present analysis, the lexical specification that the causative/perception verb combine with an infinitive V whose VAL list is identical to its ARG-ST list enforces any affixal argument specified on the V's ARG-ST list to be realised on the matrix verb. That is to say, clitic climbing is enforced absolutely given this lexical requirement.

At first glance, this would appear to make entirely the wrong predictions for reflexive affix realisation. Recall the constraints on reflexive affix climbing: the reflexive *se* does not attach to the finite verb in complex predicate constructions such as (16). This is the case regardless of whether the intended co-indexation is with the causer, or the causee:[22]

(16) **Curro*$_i$ *se*$_{i/j}$ *hizo* *afeitar* *a* *Jose*$_j$
Curro refl made.3sg shave to Jose
'Curro made Jose shave himself'

As discussed above, previous HPSG analyses for French, which exhibits similar constraints, have dealt with these facts by positing distinct verb types for verbs that realise reflexive clitics and for those that realise non-reflexive clitics. Specific constraints on complex predicate forming verbs then ensure that the verb selects for a certain type of infinitive only (Abeillé et al., 1998; Tily and Sag, 2006).

Abeillé et al. (1998), for example, distinguish between two types of verb: *basic* and *reduced*. Basic verbs are either those that have been realised without clitics or else intrinsic clitic verbs, one of whose arguments is realised as a reflexive or intrinsic clitic. Because the composition causative is constrained to select for a basic infinitive, reflexive clitics will never surface on the finite verb in composition constructions, because the infinitive selected for already must have had its affixes realised. By virtue of the same constraint, non-reflexive clitics will always surface on the finite verb, but they are never realised on the infinitive type selected for the composition verb.

There are problematic aspects to this type of analysis. First is the general question of why it should be the case that reflexive affixed verbs pattern differently from non-reflexive affixed verbs to begin with. Simply positing a distinction between verb types is perhaps descriptively adequate, but has no particular explanatory force. Of course, it may be that this is simply an arbitrary morphological phenomenon, but if a less stipulative account can be arrived at, it is certainly preferable.

[22]The reflexive examples in this section are taken from Moore (1996).

Moreover, if it is simply an arbitrary phenomenon, we might expect to see some variation across the family in this regard. It is telling that these constraints on reflexive affix realisation are shared across the family, which suggest that they derive from some property common across complex predicate constructions in these languages.

A more immediate problem for Spanish is that there is prima facie evidence that there can be no general constraint barring the possibility of reflexive affixes attaching to the finite causative verb, because there is one context where precisely this can happen, namely where the infinitive is an impersonal form (that is, when it has an uninstantiated subject with a generic interpretation):

(17) *Curro$_i$ se$_i$ hace castigar*
Curro refl make.3sg punish
'Curro makes people punish him'

Requiring the causative verb to select for an infinitive verb that has realised its reflexive affix locally would therefore erroneously rule out cases like (17), at least, without further stipulation.

I pursue in the next section an alternative approach to reflexivisation which relies on the independently motivated binding theory, and the argument structural properties of complex predicates we have already reviewed above. This analysis thus extends to both varieties of Spanish, because it hinges in no way on the specific structural type of complex predicate (flat VP vs. verb cluster).

2.3.1 A binding account of the reflexive affix constraints

Reflexive clitics *must* be bound within the clause in Spanish (Aissen, 1979), i.e., they must be locally O-bound.

(18) *Pablo$_i$ se lavó*
Pablo refl washed.3sg
'Pablo washed himself'

Thus, the following binding relation is ruled out, because there is no local ARG-ST list on which the subject of the control verb can bind the reflexive:

(19) **María$_i$ me permitió besarse$_i$*
Maria me let.3sg kiss.refl
'Maria let me kiss her'

In control constructions the *object* of the matrix verb may bind the downstairs reflexive, because this argument occurs on the local argument structure of the infinitive, and is therefore an available local antecedent for the reflexive:

(20) *Le*$_i$ *permití lavarse*$_i$
3sg.dat let.1sg wash.refl
'I let him wash himself'

Given the grammaticality of (20) above, it is at first blush counter-intuitive that in a complex predicate construction, the following binding relation, where the object Jose binds the reflexive, should be ruled out:

(21) **Curro*$_i$ *se*$_j$ *hizo afeitar a Jose*$_j$
Curro refl made.3sg shave to Jose
'Curro made Jose shave himself'

However, this illicit binding relation has a straightforward account given the analysis of these complex predicates presented above. Recall that in the combined argument structure list in the complex predicate construction, the causee *is more oblique* than the object of the infinitive (in this case, the anaphoric element), which is motivated independently by the case assignment facts (cf. TS06). Assuming that the reflexive affix is of type *anaphor*, and is thus subject to the same constraints as anaphoric pronouns (cf. MS97), and §2.1 above), this will result in an O-command violation, and the structure will not be licensed. Note that this account relies crucially on the posited semantic dyadicity of the cluster forming verb: if such verbs selected semantically for a causee, then this causee would occur on the ARG-ST of the matrix causative, which would provide an appropriate antecedent for the anaphor. The semantic facts presented in §2.2, which argue against such a triadic semantic argument structure therefore dovetail with the binding constraints described here.

(22) A-command violation, where $l = k$

$$\begin{bmatrix} \textit{cluster-vb-lxm} \\ \textsc{arg-str}\ \langle \mathrm{NP}_i, \textit{ref-aff}_k, \mathrm{NP}_l, \rangle \\ \textsc{syn}\,|\,\textsc{vcomp}\ \langle \mathrm{V}\left[\textsc{arg st}\ \langle \mathrm{NP}_l, \textit{ref-aff}_k \rangle\right] \rangle \end{bmatrix}$$

The only way to express this binding relation is with the double complement construction, in which there is no conflicting combined ARG-ST ordering, and in which, as in (20) above, the antecedent outranks the reflexive on the local argument structure of the infinitive:

(23) *Curro*$_i$ *hizo a Jose*$_j$ *afeitarse*$_j$
Curro made.3sg to Jose shave.refl
'Curro made Jose shave himself'

The relative ordering of the infinitive's arguments on the combined ARG-ST does not, however, account for why the *causer* should also not be able to bind into a reflexive element, as in:

(24) *$Curro_i$ se_i *hizo* *afeitar* *a* $Jose_j$
Curro refl made.3sg shave to Jose
'Curro made Jose shave himself'

If these are monoclausal constructions, then we would expect the subject to be a suitable antecedent for the reflexive. What then rules out this binding relation? An answer is also provided by the Binding Theory. In order to satisfy Principle A (*A locally O-commanded anaphor must be locally O-bound* (Pollard and Sag, 1994)), if the causative selects for an infinitive with a reflexive object, and if on that infinitive's ARG-ST there is an O-commanding antecedent, it must be bound by it (in the example below, l must be identified with k). If it doesn't, it will produce a Principle A violation. However, if the two arguments on the infinitive's ARG-ST are co-indexed, this will rule out any possible co-indexation with the causer on the combined ARG-ST: although the anaphor will now have a suitable binder (the causer), the co-indexation on the lower ARG-ST required by Principle A will force the causer to also be co-indexed with the non-anaphoric argument. This will produce a Principle B/C violation. Thus, whatever the co-indexing relation, some violation will result.

(25) Principle A violation where $l \neq k$; Principle B/C violation where $i = l$

$$\begin{bmatrix} \textit{cluster-vb-lxm} \\ \text{ARG-STR } \langle \text{NP}_i, \textit{ref-aff}_k, \text{NP}_l \rangle \\ \text{SYN} \mid \text{VCOMP } \langle \text{V} \left[\text{ARG ST } \langle \text{NP}_l, \textit{ref-aff}_k \rangle \right] \rangle \end{bmatrix}$$

The binding theory can thus account in a simple way for the constraints on reflexive affixes. Instead of stipulating an *ad hoc* division between verb types on the basis of affix type and equally *ad hoc* verb selectional restrictions on composition verbs, the reflexive affix constraints simply follow from well motivated binding principles, given the independently motivated obliqueness ordering of composed arguments in complex predicate constructions.

Let us now turn to the data from impersonal constructions. As we saw above, in such contexts, the reflexive affix attaches to the finite verb:

(26) $Curro_i$ se_i *hace* *castigar*
Curro refl make.3sg punish
'Curro makes people punish him'

Such examples are highly problematic for an analysis such as Abeillé et al. (1998) where realisation of reflexives is enforced via a verbal type division together with the lexical specification that complex predicate forming verbs select for an infinitive of a certain type only. This will exceptionlessly require complex predicate forming verbs to combine with infinitives that have a reflexive argument realised locally, and without further stipulation, (26) is predicted not to be possible.

On the present binding account, however, the location of the reflexive affix in these constructions is straightforwardly predicted, when we consider the properties of impersonal uninstantiated subjects.

English null instantiation has been studied comprehensively by Fillmore (1986); following Fillmore, Lambrecht and Lemoine (2005) have more recently developed a typology for French. In these studies a basic division is drawn between Indefinite Null Instantiated Objects (INIs) and Definite Null Instantiated Objects (DNIs). In the case of INIs, no inference is possible as to the identity of the missing object, and the subject receives a generic interpretation. DNIs, by contrast, share properties with anaphora, involving a specific referent who is identifiable from the context. TS06 have argued for French that, on the basis of these distinct properties, and also certain case assignment facts in complex predicate constructions, that DNIs are present as *pros* on the ARG-ST list of the predicate that subcategorises for them, while, by contrast, INIs are truly absent.

I will follow this treatment of INI objects for Spanish impersonal (unexpressed) subjects, which similarly receive a generic interpretation, taking these to be absent on the ARG-ST list of the subcategorising verb. This has the result that in the complex predicate constructions in (26), there is no subject on the ARG-ST structure list of the infinitival word which would enforce the binding of the reflexive affix, and thus rule out a binding relation with the causer, as in (25) above. Because the reflexive is nevertheless bound locally on the combined ARG-ST list of the complex predicate by a local antecedent, it satisfies Principle A, and thus the binding relation is licensed.

(27) $\begin{bmatrix} \textit{cluster-vb-lxm} \\ \textsc{arg-str}\ \langle \mathrm{NP}_k, \textit{ref-aff}_k \rangle \\ \textsc{syn}\,|\,\textsc{vcomp}\ \langle \mathrm{V}\left[\textsc{arg st}\ \langle \textit{ref-aff}_k \rangle\right] \rangle \end{bmatrix}$

Note now that a reflexive element affixed to the right edge of the infinitive is ruled out, where the construction is impersonal:

(28) **Curro*$_i$ *hace* *castigarse*$_i$
Curro make.3sg punish.refl
'Curro makes people punish him'

If we take seriously the consequences of the argument composition analysis presented above, namely that causatives and perception verbs require their infinitival V argument to have no mismatch between their VAL and ARG-ST lists, and as such that affixes (reflexive or otherwise) in complex predicate constructions must always climb, then affix realisation on the infinitive in examples such as (28) is a diagnostic for a double complement construction.[23] And thus the ungrammat-

[23]There is some cross-dialectal variation in this regard. Moore (1996) reports that for some speakers a reflexive on the downstairs infinitive is possible with a dative causee. It is unclear how much of this is due to the independent influence of *leísmo*, whereby the dative *le* is used in place of accusative masculine *lo* (or, exceptionally, accusative feminine *la*) as a pronoun for the direct object.

icality of (28) provides further evidence that INI elements are not present on the ARG-ST list: if there is no subject on the ARG-ST list of the infinitival complement (and no combined ARG-ST where a local antecedent could save the relation), then there exists no local antecedent which can bind the reflexive in (28). Because Spanish reflexives *must* have a local binder, (28) is thus not a permissable sentence. It should be noted that examples such as these do not create a Principle A violation, as it is formulated in HPSG, because Principle A says nothing about cases where there is no local antecedent. But the Spanish specific requirement that reflexive affixes must be bound locally renders them ungrammatical.

Space prevents any detailed analysis of the French facts here, or consideration of intrinsic affixes (which Spanish does not possess). I simply note that it is probably significant that reflexive affixes climb in French complex predicate constructions involving tense auxiliaries. Notably, just as in the case of impersonal constructions, in the French tense auxiliary complex predicate construction, because the auxiliary is a subject to subject raising verb, there is no clash between local binding requirements on the infinitive's and on the combined ARG-ST: the only available local binder of a reflexive is the subject of the combined ARG-ST. The binding analysis of reflexive affix realisation constraints thus may well prove elucidating for the French facts also, in explaining the contrast between the presence of reflexive affix climbing in tense auxiliary constructions and the lack of it in causative/perception verb constructions.

3 Conclusion

I have presented an analysis of the verb cluster variety of Spanish complex predication which (1) captures the structural differences between this construction and the flat VP construction common to French, Italian, and other dialects of Spanish, and (2) faithfully preserves those features that are common across both construction types. (1) is achieved by the introduction of a separate construction type, the Head-Cluster Construction, and the additional feature VCOMP, both of which have in some form been successfully used in analyses of various non-Romance verb cluster constructions. (2) is achieved by retaining the basic argument composition analysis standardly assumed for Romance complex predicates. Coupled with a simple morphological treatment of affixation, intended for both varieties of Spanish, this analysis predicts the range of clitic climbing facts.

The parsimony of the affixation analysis, which dispenses with many of the types and book-keeping features of previous analyses, is afforded by the analysis of reflexive affix constraints I have presented in the second part of this paper. Departing from the standard morpho-lexical approach to reflexive affixation, with its reliance on stipulative type divisions and selectional restrictions, I have shown how the constraints follow from independently motivated binding principles. Reflexive affix constraints thus reveal a further property of Romance complex predicates that can profitably be analysed as deriving from their composed argument structure.

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