The Lexicon-Syntax Interface*

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0. Introduction

Pronominal clitics in Romance have long represented a particular challenge for the
generative approach. The standard Government/Binding model usually assumed includes a
lexicon module and a syntax module. Pronominal clitics, which exhibit both morphological
properties and syntactic properties, must be treated either in the lexicon, by affixation to a
host, or in the syntax, by either base-generation or movement from an argument position.
Either type of analysis can account only partially for the behaviour of clitics. Affixation to a
host in the lexicon is problematic for theoretical as well as empirical reasons, as Sportiche
1992 discusses. Syntactic movement is empirically motivated but raises insurmountable
theoretical problems. Holding to the Lexicalist Hypothesis, base-generation of the clitic as an
affix at D-structure is simply not an acceptable option, if the clitic is later seen and

It is argued in this paper that empirical and theoretical observations support the
existence of an interface level between the lexicon and the syntax. We refer to this level as
the Lexicon-Syntax Interface, or LSI. The function of the LSI is to process lexical items
drawn from the lexicon so that they may be treated in syntax. Intuitively, then, the LSI is the
level of grammar responsible for what is generally referred to as inflectional morphology. The
LSI associates unordered bundles of features to lexical items. A checking mechanism applies
in syntax to ensure a match between syntactically relevant feature specifications and
morphological specifications. The lexical items contextualized in a syntactic representation
through X-bar theory are then processed through the interface level between syntax and
Phonological Form, where language-particular templates, of the kind devised by Bonet 1991
ensure that the representation satisfies the principle of Full Interpretation at PF. Otherwise, the
representation crashes at PF.

Our paper is organized as follows: Section 1 presents some empirical motivation for
analyzing Romance pronominal clitics as morphological, i.e. inflectional, elements. The
discussion starts with results of a survey of the position of object clitics in relation to various
morphological forms of the verb. Section 2 presents the theoretical context in which our
analysis is couched. It is shown that the Minimalist Program of Chomsky 1992 provides most
of the theoretical apparatus needed for a morphological analysis of pronominal clitics.

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1. **Empirical motivation**

A survey (Cummins 1992) was undertaken of the position of the object clitic relative to various morphological forms of the verb in 27 dialects of Italian and French spoken in southern France, Northern Italy, and neighbouring areas of Switzerland. This work consisted entirely of documentary research using grammars and descriptions of the dialects, usually works of an atheoretical bent, often written from the perspective of comparison with the standard variety.

A list of the dialects surveyed is given in (1). The dialects fall into seven main groups ranging geographically from southwestern France to northeastern Italy.

(1) Dialects surveyed:  
**Dialects straddling the border of langue d'oc and langue d'oïl**: Vendéen, Saintongeais  
**Occitan**: Gascon, Béarnais, Auvergnat, Velaisien, Gévaudanais, Vivarois, Périgourdin  
**Franco-Provençal**: Bettant, Vaudois, Savoyard, Valais, Valdôtain  
**Gallo-Italic**: Piedmontese, Ligurian, Corsican, Mendrisiotto, Milanese, Bergamasco, Valmaggiore, Cremonese  
**Venetian**: Rovigno d'Istria  
**Emiliano-Romagnolo**: Emilian-Romagnolo, Bolognese  
**Ladin**: Friulian, Goriziano

The order of clitic and verb was determined for the structures listed in (2).

(2) Structures surveyed:  
a. simple tensed verb (French: *je le regarde*)  
b. compound tensed verb (French: *je l'ai regardé*)  
c. infinitive (French: *pour le regarder*)  
d. gerund (French: *en le regardant*)  
e. non-negated imperative (French: *regardez-le*)  
f. negated imperative (French: *ne le regardez pas*)  
g. possibility of clitic climbing: (Italian: *lo voglio fare*)

Even within this narrow band of dialects, a surprising amount of variation was found for some constructions, as well as a high degree of consistency for others. The results are summarized below, with examples to illustrate certain atypical forms.

With a *simple tensed verb*, all varieties have the order cl + v.

With a *compound tensed verb*, all varieties have the order cl + aux + pp. One variety, Valais, also allows the order aux + cl + pp, as shown in example (3).

(3) *y è ché metuch a dzenólyon*  
she is refl put to knees  
'She knelt down' (Olszyna-Marzys 1964)
Valais, along with Valdôtain and Piedmontese, also commonly displays the order aux + pp + cl. Example (4) is from Valdôtain.

(4) Pierre l'at mandà-lei cuna lettra
    Pierre he has sent to him a letter
    'Pierre sent him a letter'  

With the *Infinitive and the Gerund*, the varieties are about equally divided between the typically French order of cl + v and the typically Italian order of v + cl. Béarnais and Gascon allow either order, as shown in the sentences in (5).

(5) a. que m'èy desmoubrat de t'at dise
    enun. refl-aux forgot to you-it say
    'I forgot to tell you it'

b. que calerà tourná-m-at
    enun. be necessary return-me-it
    'it must be returned to me'  

With a *Non-negated imperative*, all varieties have the order v + cl; three varieties, Saintongeais, Savoyard, and Friulian, also allow the order cl + v in certain constructions, such as the conjoined clause of the Savoyard example in (6).

(6) mòezi e ti kizò
    eat and you be-quiet
    'shut up and eat'  

Data on the *Negated imperative* were found for only 13 varieties; they are split nearly evenly between the order cl + v and the order v + cl. Valais allows both orders, even simultaneously, as the examples in (7) show.

(7) a. wi bale pa
    to-him give not

b. bale wi pa
    give to-him not
    'don't give (it) to him'

c. m ən parla me pas
    to-me of-it speak to-me not
    'don't talk to me about it'  

Lastly, for *Clitic Climbing*, of the 20 varieties for which data were found, most allow clitic climbing; only five seemed not to: Saintongeais, Savoyard, Valdôtain, Mendrisiotto, and Cremonese (although these results are sometimes uncertain).

To summarize, for some morphological forms—namely tensed verbs—the relative position of verb and clitic is consistent across varieties (and indeed across Romance). However, variation does crop up with the compound verb. With all the other forms, variation is widespread. Aside from the generalization that within a single variety, clitic position vis-à-vis infinitive and gerund seems to be the same, there appears to be no correlation among the
results; it cannot be said, for example, that all varieties allowing clitic climbing also have the order infinitive + cl.

This kind of variation within a very narrow range of closely-related dialects suggests that the position of the object clitic in relation to the verb is not a result of different syntactic structures and rules, but rather a case of more trivial morphological variation (as proposed in Bessler et al. 1992). Following Chomsky 1992, we expect these kinds of differences, like parametric variation, to be reducible to morphological properties. Bonet 1991 shows that the order of clitics within a clitic string is not related to syntactic function and cannot reasonably be derived syntactically; under her analysis, the order is the result of morphological rules and templates. Our proposal is that the order of the entire verbal complex-- clitics, stems, inflection--similarly cannot be determined entirely on syntactic grounds. The rest of the paper is devoted to developing a model to generate it in other ways.

2. Theoretical context

The two principal views on clitic constructions put forth in the literature--movement analyses and base-generation analyses--are radically opposed. We consider each in turn.

2.1 Movement analyses

Movement analyses involve a base-generated pronominal NP in argument position which is moved to adjoin to an X\(^0\)-level category, namely V in Romance. This type of analysis raises important questions about the types of operations that are permitted in syntax.

Two types of movement are usually accepted. The first, XP movement, can substitute a YP for an XP or adjoin XP to YP. The second, head-to-head movement, can take an X\(^0\)-level category and adjoin it to another X\(^0\)-level category, or substitute Y\(^0\) for X\(^0\). Clitic movement analyses do not fall under any of these four possibilities, since an X\(^\text{max}\) is adjoined to an X\(^0\). Interestingly, most analyses seem to assume, although not explicitly, that the pronominal NP changes to an X\(^0\) in the course of movement. Moreover, the moved NP can change category to become a CL (clitic) in its landing site, a change from a syntactic entity to a morphological entity.

A second point has to do with the chain established between the clitic and the trace left by movement of the pronominal NP. In order for the chain to be formed, the syntax must be allowed to decompose the CL+V structure created by movement so that the clitic will c-command and/or govern the trace. The problem is that the clitic is not a syntactic entity anymore and therefore should not be able to participate in structural syntactic relations.

As for empirical problems, Sportiche 1992 provides a list of clitic constructions which are difficult to account for in a movement analysis: clitic doubling, ethical datives, and dative-of-possession constructions. Accounting for the position of the clitic with respect to its host has always been problematic for movement analyses. Kayne (1991) attempts to account for the position of object clitics with respect to simple tensed verbs and infinitives in French and Italian. In Italian a clitic precedes tensed verbs but follows non-finite verbs. Kayne's hypothesis is that affixation of inflectional elements and cliticization are done in syntax. Constraints on verb movement account for the ordering of clitics and inflectional endings. It is argued in Heap 1992 and Bessler et al. 1992 that such an analysis fails to account for cases in various Spanish dialects where a clitic can appear between the root and the desinence of certain verb forms, e.g.
(8) a. Demen un vaso de cerveza.
   Give-me a glass of beer
   'Give me a glass of beer.'

b. Sientesen!
   Seat-oneself
   'Sit down.'

It would be simpler to account for such cases morphologically rather than by unmotivated syntactic movements. The burden of explaining the observed variation would fall on morphology rather than syntax, along the lines of Chomsky's Minimalist Program (Chomsky 1992:34).

2.2 Base-generation analyses

Base-generation of clitics is the more widely-proposed account. Clitics are base-generated as affixes on an X₀ at D-structure and enter into a licensing and recoverability relation with an empty argument position through the X₀ to which they are affixed.

Several empirical problems arise. Again, Sportiche 1992 points out that a base-generation analysis fails to account for Specified Subject Constraint effects, impossibility of cliticization from within a PP or a DP, and past-participle agreement facts. The position of the clitic with respect to its host is not usually addressed in base-generation analyses.

Theoretically, it can be argued that base-generation analyses as described above should be excluded as a matter of principle. If the central aspect of syntax is X-bar theory, then an item drawn from the lexicon and processed in syntax should project some X-bar structure. No base-generation analysis of clitics, with the exception of Sportiche 1992, proposes the projection of X-bar structures above the clitic node. Base-generation analyses, from this point of view, are a case of having your cake and eating it too.

2.3 A model

The task we face therefore is to find a way to base-generate clitics while respecting the integrity of syntax, i.e. without allowing affixation at D-structure. There are two ways to achieve this result.

First, one could treat clitics as heading their own functional projection in syntax (a kind of base-generation) and moving the NP or DP argument to the Spec of the functional projection headed by the clitic. Actual affixation of the clitic is achieved either by right-adjunction of V to the clitic or left-adjunction of the clitic to another functional projection. This is essentially the account proposed in Sportiche 1992.

It is difficult to conceive how the ordering facts presented in Section 1 could be accounted for in this framework without heavy reliance on ad hoc variable syntactic constraints on movement, since ordering facts are taken as a reflection of the syntactic structure containing the clitic. On a theoretical level, Sportiche's account forces a vision of syntax that provides for one projection per inflectional affix or clitic. Participial morphology would have a projection (PmP), as would infinitival morphology (InfnP) (cf. also Kayne 1991). Under this approach, syntax is a way of doing morphology.
The second option is to base-generate the clitic as affixed to its host prior to syntactic treatment of the host. Under the standard GB model, one is forced to affix the clitic in the lexicon, an undesirable option, since it amounts to treating clitics as derivational affixes. An intuitive distinction between derivational and inflectional affixes is that the former are more morphologically determined and the latter more syntactically determined. Under this view, clitics as morphological entities are much closer to inflectional affixes than to derivational affixes.

Chomsky 1992 suggests that lexical items have inflectional features in the lexicon as an intrinsic property. These features are checked in the Computational Component of the grammar (i.e. syntax). Another feature of his Minimalist Program is the crucial importance attributed to interface levels. Chomsky proposes two interface levels, one between the CC and PF and the other between the CC and LF. The minimalist model looks like this:

\[
\text{Lexicon} \\
\text{Computational Component} \\
\text{(X-bar theory)} \\
\text{(Interface level)} \quad \text{(Interface level)} \\
\text{PF} \quad \text{LF}
\]

We wish to propose a third interface level, the Lexicon-Syntax Interface (LSI), which mediates the passage from the lexicon to the CC, as shown in (10).

\[
\text{Lexicon} \\
\text{(Interface level)} \\
\text{Computational Component} \\
\text{(X-bar theory)} \\
\text{(Interface level)} \quad \text{(Interface level)} \\
\text{PF} \quad \text{LF}
\]

The function of the LSI is to process or prepare lexical items drawn from the lexicon for treatment in the CC. This implies that lexical items are bare uninflected forms in the lexicon (aside from transparent lexicalized items) and are assigned inflectional features in the LSI. Checking is done in syntax through a mechanism made more explicit elsewhere (Roberge 1993, Cummins & Roberge 1993). Syntax is exclusively concerned with X-bar structures but inflected lexical items count as $X^0$. The effects of the relevant components of the grammar on a lexical item are represented in a simplified form in (11):
Lexicon: \([a \, R\, ]\)  
Bare root of category \(a\)

LSI: \([a \, R-I_1\ldots-I_n]\)  
Root with inflectional features I of category \(a\)

Syntax:  
\[\alpha''\]  
\[\mid\]  
\[\alpha'\]  
\[\mid\]  
\([\alpha^0 \, R-I_1\ldots-I_n]\)  
\(\alpha\) projected to X-bar

The syntax "sees" only \(\alpha\), including the effects of the inflectional features on the lexical properties of \(\alpha\).

After checking, \(\alpha\) in its syntactic representation is processed through PF and LF. If checking has failed, the representation crashes at PF; if it has been successful, the representation converges at PF. The same applies in LF but in a different manner.

The main aspects of this model are then:

a. an interface level (LSI) between the lexicon and the CC
b. checking mechanisms in the CC
c. PF constraints on the spell-out of the LSI features on R of \(\alpha\).

In the following section, we make each of these aspects more explicit.

2.3.1 The Lexicon-Syntax Interface

As we said above, the LSI takes lexical items and treats them so that they can be inserted into syntactic structures and manipulated by syntactic rules. Three examples of LSI processes are verbal inflection, cliticization, and complex verb formation. More generally, local agreement features are assigned in the LSI and checked in the CC.

The LSI has its own stock of morphological items (which surface as inflectional affixes, essentially). These differ from lexical items in that they are labelled bundles of unordered features, rather than fully-specified phono-semantic entities. Object clitics in Romance are such morphological entities, although there is room for parametric variation in the characterization of clitics.

In the LSI, compatibilities such as that between a transitive verb and a direct object clitic are not relevant. A representation violating such compatibilities would simply crash at LF, essentially for semantic reasons. Constraints such as the one disallowing *je me lui montrer, for example, are not handled in the LSI either. Such a representation would crash at PF, for reasons to be developed in 2.3.3.

Let us illustrate LSI representations for the following sentences:

(12) a. Anne me le donnera.
'Anne will give it to me.'

b. Jean te croyait malade.
'Jean thought you were sick.'

c. *Marie lui connaît.
'Marie knows him.'
The lexicon provides the following items, for each of the sentences:

(13) a. \( n\text{[ANNE]; } v\text{[DONN-] } x \text{ (donner } y, z) \)
    b. \( n\text{[JEAN]; } v\text{[CROI-] } x \text{ (croire } y) \); \( a\text{[MALADE] } (malade } x) \)
    c. \( n\text{[MARIE]; } v\text{[CONNAI-] } x \text{ (connaitre } y) \)

The LSI associates inflectional material to lexical stems as follows (order irrelevant):

(14) a. \( v\text{[DONN-} \text{ accusative } - \text{ dative } - \text{ tense } - \text{ subj agr]} \)
    \hspace{1cm} \text{person 3} \hspace{1cm} \text{person 1 mood} \hspace{1cm} \text{person 3}
    \hspace{1cm} \text{singular} \hspace{1cm} \text{singular} \hspace{1cm} \text{singular}
    \hspace{1cm} \text{masculine}

    b. \( v\text{[CROI-} \text{ accusative } - \text{ tense } - \text{ subj agr]} \)
    \hspace{1cm} \text{person 2} \hspace{1cm} \text{mood} \hspace{1cm} \text{person 3}
    \hspace{1cm} \text{singular} \hspace{1cm} \text{singular}

    c. \( a\text{[MALADE-} \text{ singular]} \)
    \hspace{1cm} \text{masculine}

    d. \( v\text{[CONNAI-} \text{ dative } - \text{ tense } - \text{ subj agr]} \)
    \hspace{1cm} \text{person 3} \hspace{1cm} \text{mood} \hspace{1cm} \text{person 3}

These items then participate in syntactic processes in the Computational Component as usual. Agreement is checked in the Computational Component, in the manner formalized in Roberge 1993.

2.3.2 The Phonology-Syntax Interface

Many features of the interface between syntax and phonology are adapted from Bonet’s work on pronominal clitics in Romance (Bonet 1991). Bonet’s model includes a mapping of the features present in syntax onto hierarchical clitic structures, containing nodes such as ARGUMENT, PERSON, and (plural). The structures may undergo morphological rules that alter their shape; it is through such rules that Bonet accounts for non-transparent clitic outputs in certain dialects of Catalan. She posits templates to which the clitic structures are then submitted to yield the correct linear order.

Thus, adapting this model to French, the feature bundles such as those shown earlier are mapped onto clitic structures, which represent the same features hierarchically, as in (15).

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1These lexical representations are overly simplified and are merely intended to grossly represent grammatical functions, thematic roles, phonological shape, etc.
Among the Agreement features (Agt), a value for [±1] must be obligatorily selected, but the features [fem] and [pl] are optional and privative. Structure (15a) underlies the clitics me (moi), te (toi), se, nous, vous, depending on the feature values selected. Structure (15b) underlies le, la, les, and structure (15c) underlies lui, leur.

Morphological rules apply to some of these structures, to eliminate morphologically redundant features. For example, a first person plural accusative clitic will have its case node pruned, since that feature is not morphologically relevant. Then the clitic structures are linearized by being submitted to a template.

The parts of clitic structures that are relevant for a template for preverbal clitics in French are shown in (16).

(16)  
\[
\begin{array}{ccc}
\text{CL} & \text{CL} & \text{CL} \\
\text{ARG} & \text{ARG} & \text{ARG} \\
\text{PERSON} & \text{ACC} & \text{DAT}
\end{array}
\]

The assignment of a clitic to a slot in the template depends on the presence or absence of a case feature node, and if such a node is present, on which case is specified, accusative or dative. Caseless clitic structures are assigned to the first slot, accusatives to the second, datives to the third. A further constraint—the Missing Link Constraint—stipulates that the slots must be filled contiguously. Therefore, filling slots 1 and 2 results in a grammatical output, as does filling slots 2 and 3; filling only slots 1 and 3 results in an ungrammatical output.

3. **Conclusion**

We have sketched the outline of a model that allows us to account for morphological variation in a simple, straightforward manner. The main proposal presented here is for an interface level between the lexicon and syntax, expanding on the model of Chomsky's Minimalist Program. With this interface, we are in a better position to account for both morphological and syntactic properties of clitics.
References


